

DESIGNING SUPPORT FOR WEB-BASED CONTINUING EDUCATION
USING COMPUTER CONFERENCING

A THESIS

SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF ADULT EDUCATION

BY

DIANA RUTH DEACON

SAINT FRANCIS XAVIER UNIVERSITY

ANTIGONISH, NOVA SCOTIA

MARCH, 2000



National Library
of Canada

Acquisitions and
Bibliographic Services

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale
du Canada

Acquisitions et
services bibliographiques

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-53631-9

Canada

ABSTRACT

In this thesis I discuss how I developed, implemented, and evaluated a Web conference for learners enrolled in Web-based courses through the continuing education division of my university. I address a number of research questions: How can continuing distance education personnel support learners who are isolated from the university and from each other? How can computer-mediated forms of on-line education address support needs in an immediate fashion, allowing learners to share their stories? How can the principles of adult learning, the nature of distance learners, and the characteristics of computer-mediated on-line education inform the design and delivery of on-line support? In order to answer these questions I reviewed the literature related to qualitative research in adult education, computer-mediated adult education, adult learning theory, and the nature of distance learners. From the literature, I derived guiding principles for the design and implementation of the Web conference and became aware of the potential value of sharing our stories.

I evaluated the study using informal qualitative methods. My major finding was that the conferencing system used for Web-based courses at my university could be used to provide a supportive forum for continuing education students. Learners reported that the forum was of value in overcoming their sense of isolation from the university and from their fellow learners. The principles in common among the areas of literature I researched worked in practice. Nevertheless, like other researchers, I found that participation rates and the degree of interaction within the forum were low due to time constraints and the demands placed on learners by their academic, work, and home lives.

ACKNOWLEDGEMENTS

First and foremost, I acknowledge my advisor Dr. Leona English. She exemplified the qualities of support for the whole person, attention to process, and reflective practice which are cornerstones for guiding learners at a distance. Her patience, understanding, and zest for learning helped me tremendously throughout the process. I also thank other members of the Department of Adult Education at Saint Francis Xavier University who made me feel welcome to the campus during orientation, challenged my thinking, and helped with many practical matters.

I thank my husband Christopher and daughter Christine for their constant support and encouragement as I worked through the Master of Adult Education Program. When the process was difficult and progress seemed slow, they were always there to restore my perspective and keep me going. Their own love for learning continues to inspire me.

My parents, sisters, friends, and colleagues were also great supports during the program. In particular, I acknowledge the contribution of my colleagues in the School of Continuing Education. Without their willingness to share their expertise, provide new perspectives on my work, and support the forum in operation, the study would not have been possible.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENTS	ii
<u>Chapter</u>	<u>Page</u>
1. INTRODUCTION	1
Background Information for the Study	1
Origin of the Study	5
Problem Statement	7
Purpose of the Study	8
Research methodology	9
Scope and Limitations of the Study	10
Resources	12
Definition of Terms	13
Plan of Presentation	13
2. LITERATURE REVIEW	15
Research Method: Understanding Stories as Qualitative Research	15
Trends in Usage of Qualitative Research	16
Concerns of Practice	17
Ideological Concerns in Using Story	19
Computer-Mediated Learning and Adult Education	21
History	22
Current Themes in Research and Practice	25
Adult Learning Theory and the Design of Learner Support	27
Distance Learning and Learners	30
The Changing Concept of Distance Learning	30
The Nature of Distance Learners	31
Support for Distance Learners	34
Working With the Stories of On-Line Learners	35
From the Learners' Perspective	35
From the Instructors' Perspective	38
Theoretical Framework Drawn from Literature	39
The Overarching Framework	39
Computer-Based Learning Design	41
Adult Learning Theory	41
Distance Learning	42
3. DESCRIPTION OF THE STUDY	43
Design of the Study	43
Design Elements Derived from Adult Learning Theory	44

Design Elements Derived From Research on the Characteristics of Distance Learners	48
Design Elements Derived from the Nature of On-line Learning	50
The Intersection of Adult Learning Theory, Distance Learning, and Computer-Mediated Learning	52
Organizing the Implementation	53
The Forum in Action	58
The Process	58
The Learners and Discussion	59
Winter 1999 semester (January to April).	60
Spring 1999 semester (May to August).	72
Fall 1999 semester (September to December).	73
Evaluation	81
Learner Evaluation	82
Instructor and Colleague Evaluation	84
Facilitator/Researcher Evaluation	85
 4. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	 88
Overview of Study Outcomes	88
Discussion and Conclusions	89
Research Method and Program Design	89
Qualitative research.	90
Computer-based education.	90
Adult learning theory.	94
Distance learners.	97
Program Implementation: A Process of Qualitative Research and Practice	100
Qualitative research methods and ideological issues.	100
The nature of the learners.	102
Themes and concerns raised by the stories of on-line learners.	103
The role of the facilitator / researcher.	105
Evaluation of Strengths, Weaknesses, and Limitations of Web Conferencing for Learner Support	107
Recommendations for Practice	111
Recommendations for Further Research	113
 REFERENCES	 115
 APPENDIX A	
GLOSSARY OF TERMS	123

CHAPTER 1

INTRODUCTION

Computer-mediated delivery of continuing education via the Internet and World Wide Web has become increasingly popular with educational institutions and the learners they serve. Learners who are connected to the on-line world of learning have new opportunities to build connections with the institution, instructors, and each other. Their stories provide insight into their experiences as distance education students and can inform the professional development, learning, and practice of continuing education staff. Sharing these stories, in turn, enriches the experience of on-line learners in continuing education courses .

In this thesis, I examine how I developed, implemented, and evaluated a Web conference for learners enrolled in Web-based courses in my university. My study was motivated by a need to alleviate the sense of isolation experienced by many distance learners, enable them to discuss issues that are not bound to a particular course, and develop a sense of belonging to a community of learners that parallels the on-campus experience.

Background Information for the Study

The use of computer-mediated communication for learner-instructor feedback in distance courses is increasing. Creative outreach through effective use of new technologies has been highlighted by senior administrators, including those at the university where I work. It is now an essential strategy for meeting post-secondary education's mandate in a changing and challenging environment. Development of Web-based courses at the university where I work has become a priority activity of the School

of Continuing Education; it is projected that within the next few years, more than 50 undergraduate and graduate credit courses will be delivered on-line at the university where I work. Fostering rich on-line environments for learning demands attention to theoretical and practical considerations in computer-mediated adult education, adult learning, and distance education. Situating the study in the intersection of these perspectives illuminates areas for work and reflection on ways that on-line tools can be utilized in creating these learner-centred, rather than course-centred, environments for learning.

Researchers recognised quite early that simply transferring lecture- and paper-based text into computer text was unsatisfactory (Garrison, 1989; Mason & Kaye, 1989). Over the past decade, research, writing, and practice in designing and evaluating computer-based forms of adult education have emerged from a singular focus on the technology and how one could use technology to translate content for computer-based delivery. To a large extent, much of the current writing in the area still deals with specific, course-based exemplars of design and delivery rather than with a more critical delineation and assessment of principles for good design (Canadian Association for University Continuing Education, 1998). However, a more holistic approach to computer-based learning design is beginning to appear in practice and, as a result, it is also appearing in the literature of the adult education field (e.g., Berge & Collins, 1993; Burge, 1994; Eastmond, 1995; Garrison, 1989; Mason & Kaye, 1989). Good design is now less frequently defined by how it uses the technology and is less frequently evaluated by measures of efficiency and economies of scale. More often, it is being

framed in terms of the learner characteristics, learning styles, and adult learning principles that are required for successful learning and teaching. What is missing to date is the extension of this holistic approach into the use of computer-mediated avenues for more generalized learner support, development of meta-learning, and enhancement of on-line environments for learning.

Adult learning as a field of study has been characterized by efforts to build viable theoretical frameworks to guide adult program planning. For much of this century, a dominant theory shaping adult education has been the evolving concept of self-directed learning. Educational theorists such as Candy (1991), Knowles (1975), and Tough (1979) have tried to describe and delineate self-direction as a trait of successful adult learners and the nature of self-directed learning as a phenomenon. A major barrier to applying this theoretical framework to program planning and learner support has been the tendency to fuse self-direction with independence and to define self-directed learners as independent learners. More recent work in this area by authors such as Campbell (1995), Garrison (1992), and Griffith (1983) has taken a fresh look at self-direction, and added the dimensions of interdependence, connection, and community to the picture of how truly self-directed individuals operate. In light of this expanded view of adult learning, an examination of ways in which learner support mechanisms and structures can add interdependence and a sense of connection to on-line learning for adults is timely.

Distance learning has been a part of adult education from the earliest days of correspondence courses, but has been relatively under-represented as an area of study

within adult education. The impact of a paradigm shift in distance education theory and practice has been described by several writers (i.e., Hall, 1996; Garrison, 1989, 1997). Several authors contrast the traditional, mass-produced, and industrial model for distance education with a post-industrial model largely driven by computer-mediated communication and characterized by a critical, reflective, collaborative, highly interactive, and personalized approach. Structures and planning for distance education are only beginning to incorporate principles derived from the themes of constructed knowledge, a knowledge-based society, learning rather than instruction, and support for learning communities.

More attention is also being directed towards distance learners as a group, especially as new technologies such as on-line delivery increase the numbers of individuals involved in learning at a distance. Accessibility, flexibility, and a good fit to self-directed learning styles have often been cited as reasons why distance delivery of programs is particularly valuable for many learners (Burge, 1990; Collins & Haughey, 1986; Coulter, 1989). However, based on the experiences of distance learners, the literature reveals both positive and negative aspects of even the most innovative distance education delivery (Hipp, 1997; Hotchkis, 1992; May, 1993, 1994). For example, new technologies can create more supportive, open learning environments, but they may also reinforce existing hierarchical ones based on the teacher as expert and the learner as a passive recipient of pre-packaged knowledge. Planning and learner support need careful attention in order to meet the diverse needs of distance students. This study attempts to bring the field closer to the best uses of distance education for adult learning.

Origin of the Study

Several adult education principles and perspectives were important elements in the design of this study. As Percival (1993) indicates, professional development for adult education programmers must interweave theory and practice, reflection and action, while building strong relationships with other practitioners and the learners they serve. I envisioned the study as a means of encouraging transformative learning (Cranton, 1994; Mezirow & Associates, 1990) that moves beyond the boundaries of content and course work and connects learners. Brookfield's (1984) discussion of the relationship among adult learners, adult education, and the community further supports the value of bridging formal and non-formal modes of learning in an on-line environment. The questions that Potter (1994) raises about if, and how well, adult educational programmers support our distance education learners, and her call to researchers and administrators to address the complexity and diversity of the support needs of adult learners at a distance, challenged me to think about how distance education could enrich learners' experiences. And, as Boud and Griffin (1987) demonstrate, a true appreciation and understanding of adult learning practice must be grounded in the perspectives of the learner.

Several research perspectives on the use of computers for adult education were equally important in the design process. Burge (1994) offers a powerful rationale for studying learning in computer conferences from a qualitative perspective based in the learner's experience. Garrison (1989) presents a process-based paradigm for distance education planning that treats the computer as a processor of information in the educational transaction and a potential tool for combining independence and

interactivity. The unique nature of communication via computers in distance education and its impact on both learner interactions, and the structure and cultures of the distance education unit, is a central theme in Mason and Kaye's (1989) research. Work by researcher practitioners (i.e., Berge & Collins, 1993; Eastmond, 1995; Westrom & Pankrantz, 1997; Wong, 1998) provided models for implementing on-line projects that focus on collaboration, communication, and attention to the learner. These were all important guiding principles for the design and implementation of my study.

The choice of the form of on-line communication to use was, in large part, dictated by what was available and by the study's setting in a moderate-sized university offering programs by distance and on-campus. As the study was centred in my professional practice and involved learners enrolled in Web-based graduate and undergraduate credit courses at my university, in consultation with my St. Francis Xavier University advisor, I discussed the study with colleagues in the School of Continuing Education throughout its development, design, and implementation. They were able to help me place the study in the overall context of Web-based course development in our university, as well as to guide me through the technical and procedural steps necessary. The study benefited considerably from their extensive experience in working with instructors to translate their courses into this new delivery medium, their experience using the AltaVista system which is used for student and instructor computer conferencing within Web-based courses, their attention to the principles of good educational design, and their expertise with the technology.

Problem Statement

The university where I work is a mid-sized comprehensive institution offering undergraduate and graduate programs in arts, sciences, and a number of professional schools to approximately 16,000 full- and part-time students on several main campuses. After its elevation from college to university status in the 1940s, the university experienced rapid expansion from the 1950s to the 1970s. At the same time, outreach was identified as a critical objective of the university and, in the 1960s, distance offerings to rural communities throughout the province were established. For more than 25 years, the School of Continuing Education has offered credit and non-credit courses on campus and around the province through evening classes, intersessions and summer sessions, as well as through correspondence, video-taped, teleconference, and Web-based courses. In the early 1990s, e-mail was introduced as a means of student-instructor communication in some distance courses; the first Web-based course was offered in 1996. The School is relatively large, with more than 50 staff in a variety of development, delivery, and instructional support roles; in recent fall, winter, and spring semesters there have been approximately 10,000 single-course registrations in some 250 distance courses. The main focus of the School is on the provision of continuing and distance education to serve the needs of its home province, but its outreach also extends throughout Canada and internationally to students as far away as Asia and the Caribbean.

Distance education learners in my university frequently cite a sense of isolation from the institution and from fellow learners as a barrier to learning. For many learners,

the constraints of time, work, personal situations, and geography mean that distance formats offer their only access to the educational opportunities they need, yet they miss the feeling of connection and community that face-to-face settings engender naturally.

The problems this study addresses can be framed in terms of several questions: How can administrators and learner support agents overcome this isolation? Is there potential within the new computer-mediated forms of on-line education to address this problem in an immediate and powerful fashion? How can an understanding of the principles of adult learning, the nature of distance learners, and the characteristics of computer-mediated on-line education inform and shape the design and delivery of on-line support and community?

Purpose of the Study

The purpose of this study was to examine the potential of a Web-conferencing tool (AltaVista) to create an on-line community of learners in a university-level continuing education program. The study focusses on three general aspects of practice and inquiry: the effectiveness of the design, implementation, and evaluation of the program to meet the needs of distance learners in continuing education.

The program design draws upon adult learning theory, ideas about computer-based adult education, and the characteristics of distance learners. The implementation of the study seeks to operationalize this theoretical and philosophical stance within the practical constraints of a given institution and system. It also provides a testing ground for working with administrators and instructional designers to bring the principles of

good instructional design and delivery to bear on the wider arena of community building.

The study also seeks to evaluate the effectiveness of this tool in actually meeting the needs of distance learners. By analyzing learners' contributions to the discussion forum, I developed a qualitative assessment of the ways in which learners were able to use an open forum for discussion of meta-issues rather than course-specific concerns. Evaluative feedback from learners, instructors, and colleagues within the continuing education unit places these results in the larger context of the institution. By combining these perspectives, I draw conclusions about the relevance and usefulness of this tool in the longer term. This study may be of use to other adult educators who want to increase interaction and to establish a sense of community with the learners they serve.

Research methodology

My study uses a qualitative research methodology in keeping with the literature of qualitative research in adult education. Consistent with Guba and Lincoln (1983) and Denzin and Lincoln (1998), I defined my role in the study as inquirer and as the vehicle for my inquiry. I was involved as a researcher and as a co-learner with the learners who participated in my study. From my first contact with the group, I established a multiple role as a learner, a continuing education professional, and a researcher.

Denzin and Lincoln (1998) also address the design of qualitative research. They stress the value of emergent research design which responds to the changing nature and needs of the group involved. The computer conferencing system which I used for the study facilitated this research approach. I was able to change topics, add new

discussions, respond to the interests of the learners, and capture discussions to be re-read and reflected on to suggest new avenues and strategies. I believe that this emergent research design allowed me to adapt my study to the reality of learners' lives and that qualitative research methods are appropriate for the design and study of on-line learner support.

Scope and Limitations of the Study

The study describes my experience as I designed, implemented, and evaluated a Web conference (which I named *Student Talk*) with a group of learners enrolled in "new media" continuing education courses at my university. The conference was open to both men and women with varying degrees of familiarity with learning at a distance who are in various undergraduate and graduate classes and courses. After securing the permission of the course instructors, learners from all 33 Web-based courses offered by my university over three successive semesters in 1999 were invited to join the conference. Of these courses, a total of 17 learners representing approximately 1% of total Web-based course enrolments for these semesters participated in the forum. They were volunteers to the study and were self-selected.

I actually wanted a small group of learners to ensure a good comfort level and to encourage sharing. I facilitated guided discussions that formed an important part of both the group process and the evaluation of its effect on learners' experience of distance learning. Although it was not required, most learners indicated which Web courses they were enrolled in. In one semester of the study, two learners from the same course participated in the forum. Learners from the first and second semesters were contacted

by e-mail and invited to participate in subsequent sessions; however, none did so. Of the 17 learners, 12 (70%) were women, and the most frequent, repeated, and detailed participation in the forum was by women.

Because the study depended on the solicited participation of learners enrolled in Web courses, its implementation was limited to the 13-week academic semester of the university with the inherent time constraints this entailed. Once a base group of learners was involved, and the permission of the Web administrators was secured, the forum could be kept open outside of the academic semester format with new learners joining whenever they wished. Because instructors' permission for access to course forums was necessary to inform learners about *Student Talk*, a certain amount of lag time was encountered between the initial contact with instructors before the term started, and the time that the forum became active.

Confidentiality issues were also important. For example, although I posted an invitation letter to potential learners in each course forum, I did not view other messages in individual course forums because those discussions were private to that course. Furthermore, within *Student Talk*, I exercised sensitivity to the learners' need for privacy and balanced this with the need to use their posted messages within the study. I explicitly pointed out the nature of Web-based communication in which posting to public forums assumes that messages are not private and can be shared. By doing so, I was insuring that learners knew from the beginning that their comments could and would be part of any published results, such as this thesis. They were all very clear on this point and knew that they could drop out at any time.

Because this was an ongoing forum rather than a discrete educational event, it was not feasible to run several trials of the study. Instead of several sessions in which variations of techniques could be assessed, the forum in each semester was a continuing process of trying various strategies, assessing their effectiveness, and responding to learners' feedback. This thesis is therefore reflective of a continuous feedback and response loop, and sets the flow for the future continuation of the *Student Talk* forum as a tool in my professional practice.

Resources

Human and technological resources were vital components in the implementation of the study. Colleagues from within my university were invaluable in setting up the forum and teaching me the technological and procedural "ropes," most notably those involved in faculty development, instructional design, and administration of the Web-based conferencing system. Cooperation from the instructors of Web-based courses was essential, as was the participation of the learners who responded to the initial invitations to join the study. Implementing the study was simplified by the availability of the AltaVista system and an established Web environment for distance education at our university.

In addition to these immediate resources, my study design was heavily influenced by research and reading in the area of computer-mediated on-line communication. Ideas published in journals provided key concepts for doing ongoing searches on the Web, as did involvement in several on-line discussion groups,

conferences, electronic journals, and listservs devoted to distance education and computer-mediated learning.

Definition of Terms

The speed and diversity of growth in the field of computer-mediated communication has been accompanied by the development of a working vocabulary of its own. Terminology has kept pace with technology and terms such as bytes, the Internet, the World Wide Web, and on-line are becoming common in everyday speech. However, it is premature to assume that every practitioner has had the same level of exposure to the language of the on-line world. In addition, many common terms in everyday speech (e.g., thread, file, conference, Web) have specific and limited uses within this language. For convenience, I provide a glossary in Appendix A that defines the terms used within my study.

Plan of Presentation

In the next chapter, I examine the literature related to qualitative research, computer-mediated education, adult learning, and distance education as it informs the design process and the implementation of the study. In the third chapter, I describe the planning process and structure of the *Student Talk* forum, the learners, and the discussions that took place over the course of the study. This chapter includes an evaluation of the effects that participation in the forum had for the learners, including what I learned as a participant and as the forum moderator, and an evaluation of the forum's potential from instructors and administrators. In the final chapter, I examine how the results of the study relate to adult education theory and practice, and present

some overarching themes and recommendations for practice that derive from this experience.

CHAPTER 2

LITERATURE REVIEW

The increased usage of computer-mediated delivery of continuing education via the Internet and World Wide Web has implications for educational institutions.

Furthermore, using on-line learners' stories as a method of data collection requires a critical analysis of the methodology of narrative as a form of qualitative research within computer-mediated learning in order to ensure that the work is both methodologically sound and conceptually consistent. The design of learner support that can give learners a forum for presenting their stories and building community further requires attention to the nature of adult learning in general, and the needs of distance learners in particular.

In this chapter I review relevant literature on these topics. First, I discuss some key works relevant to my research method, focussing in particular on understanding stories as qualitative research. Second, I focus on computer-mediated learning as a field of study in adult education. Third, I discuss adult learning theory as it relates to the design of learner support interventions. Fourth, I review literature pertaining to the needs of distance learners. Finally, I review studies that rely on the stories of learners to provide perspectives and to improve practice in the provision of learning opportunities via computer-mediated communications.

Research Method: Understanding Stories as Qualitative Research

The literature of qualitative research is both large and interdisciplinary. I have chosen some representative works that are significant for my understanding of the use of narrative, and of the field in the most general sense. Guba and Lincoln (1983) outline

methods for designing and implementing qualitative research. Their perspective is grounded in naturalistic means of inquiry as alternatives to quantitative methodologies. More recently, Denzin and Lincoln (1998) survey the field of qualitative research from historical, paradigmatic, and theoretical perspectives. In their examination, which is a reference point for much of the current literature in qualitative research, they reinforce the long-standing point that a key element of qualitative research is the role of the inquirer as a tool of inquiry. The researcher is not only the means of collecting and analyzing data, but participates jointly and actively with the subjects of research in knowledge creation within the research setting.

Trends in Usage of Qualitative Research

Several researchers in the latter part of the 1980s used a qualitative approach similar to that of Guba and Lincoln (1983) in order to examine learning from the perspective of the learner. Belenky, Clinchy, Goldberger, and Tarule (1986), in their landmark work *Women's Ways of Knowing*, challenge the male hegemony of developmental psychology through an examination of women's relationships to knowledge. Their research process involved interviews with women from a variety of backgrounds who told their stories of schooling and learning. Boud and Griffith (1987) draw on a body of master's and doctoral research in adult learning carried out at the Ontario Institute for Studies in Education and in other centres to give adult education practitioners a view of learning from the adult learner's perspective. They include work by Griffith (1983, 1987), who extended the concept of researcher as tool to see the

researcher as a co-learner in a mutual exploration of the stories she presents and interprets.

A volume of work by the Personal Narratives Group (1989) is a particularly powerful example of the use of women's written narratives as a tool for critical analysis of women's history and experience. Although the research reported is not directly connected with adult education, it is a clear example of a thoughtful and thought-provoking use of story. The authors are careful to examine their background assumptions in their treatment of women's stories; they tackle several methodological issues, including the role of interpreter in relation to subject.

A similar attention to the methodological implications of qualitative research is characteristic of recent reviews of qualitative research (i.e., Eisner & Peshkin, 1990; Denzin & Lincoln, 1998). These works are representative of current qualitative research in the discourse around qualitative methodologies. Although they do not exclusively deal with narrative as a starting point for learning, these recent surveys yield a picture of a field that is in an ongoing process of self-examination and critical analysis of practice and ideology. Such a process implies that an examination of the concerns of practice is necessary before engaging with the stories of learners. The next subsection deals with these "how to" questions.

Concerns of Practice

Guba and Lincoln (1983), and Denzin and Lincoln (1998), emphasise a how to approach to qualitative studies. The major elements of their model for good qualitative

practice are: (a) the inquirer as the instrument of research, (b) emergent research design, and (c) patterns as units of analysis.

Belenky et al. (1986) eschew what they refer to as a male-dominated discourse of developmental psychology in looking at women's ways of knowing. Their use of taped interviews brings the voices of women learners into their account, but their reliance on blind coding, contextual analysis, and a drive towards homogeneity raises some questions about methodology. For example, does their focus on commonality and stages leave out important concerns? As will be discussed, documenting the diversity of women's experiences has led to a richer and more complex analysis of factors influencing women's learning and practices that can improve adult education for many learners.

A series of more recent articles and texts provides some benchmarks for the practice of working with, and for, learner's stories. The learner's perspective is the primary focus for Boud and Griffin (1987); however, they place nearly equal importance on the stories of researchers as learners. Griffith (1983) makes this point more explicitly when she notes, "Understanding in the study came from both its content and its process" and "I, as researcher participant, strived to be interdependent as I interacted with the participant researchers, myself, other persons, the data and the literature" (p. 105). Her research method included reflecting on her own experience through journal-writing and "dialoguing" with the data (Griffith, 1987). Barrick (1988) also reflects on the interpersonal nature of working with people's stories in a naturalistic inquiry into the relationship between environmental remembrance and life satisfaction among the

elderly. Block (1995) describes how learner-written cases based on personal experiences enhanced recall and application in an adult learning course. Similarly, Randall (1995) suggests ways in which adult educators can assist learners with the re-storying of their lives; ways in which identity is understood and defined through the interpretation and presentation of events. The adult educator can act as co-auditor, co-editor, and co-author of learner's stories.

Brookes (1992) takes the use of story even further. Her work is based on an autobiographical narrative of her learning. She acknowledges the work of Belenky et al. (1986) as a new way of looking at existing assumptions and frameworks, but concludes, "I want to begin from a different place, from which I can simultaneously celebrate difference and acknowledge inequalities" (p. 60). In contrast, Barone (1992) chooses to be more direct in the crafting of worthwhile stories while maintaining more distance between storyteller and subject. Razack (1993) would perhaps take exception to this distance; in her view, critical pedagogy has to pay close attention to the context in which people hear and tell stories, the relative difference between teller and listener, and the use to which stories are put. She raises some critical questions that lead to the next subsection on ideological considerations.

Ideological Concerns in Using Story

Guba and Lincoln (1983) remain faithful to an ideological status quo, in which research is seen as relatively value-free and objective, even as they challenge the quantitative status quo. As Denzin and Lincoln (1998) assert, it is clearly important to

examine not only *how* to use story but also *why* to use it, and what ideological consequences result from its use.

As an example of the way in which such a critical analysis of methodology can inform practice, I have chosen to focus on critiques of Belenky et al. (1986) by several feminist scholars who base their own work in the stories of women. Code (1991) devotes a significant section of her consideration of feminist theory and epistemology to an in-depth critique of Belenky et al. She concludes that “their claim that they studied and learned from ‘the ordinary voice’ reduces diversity to a harmonized, composite ‘voice’ in which specificities are effaced” (p. 260) and questions their basic conclusion that women learn in different ways *because* they are women. She notes that their perspective is incomplete in its lack of attention to the ways in which “the construction of adult subjectivity takes place within a culturally transmitted and subsequently internalized ‘sex/gender system’ ” (p. 262).

Brookes (1992) concurs with Code's (1991) point of view. Although she feels that Belenky et al.'s (1986) work is an important text, she goes on to say, “Yet, to conclude that women know differently without theoretically analysing why this is so, is, I think, to render invisible the practices which keep women's ways of knowing outside the state-legitimated educational institutions which inform learning and knowing ” (p. 59). She delineates two areas that are especially problematic in her reading of Belenky et al. First, they build on Perry's hierarchical scheme of development while criticizing it. Second, their assumption that women learn differently from men and, therefore, require a woman-centred education isolates women learners even further and locates problems

in the differences between men and women rather than in the political realm of gender discourse.

Lather (1992) also expresses concerns with what gets lost in Belenky et al.'s creation of distinct epistemological categories. Her approach to women's narratives includes interviews, research reports, journal entries, and her own reflections, which are used in turn to create four types of tales: realistic, critical, deconstructive, and reflexive. The resulting analysis is able to give a richer and more complex interpretation of the diversity of women's experiences and the contexts in which they occur.

Qualitative research provides an alternative to quantitative methodologies in which the inquirer becomes the tool of inquiry and a co-learner with the individuals whose stories she presents and represents. Research based on narrative provides some guideposts for my practice in using story. Ideological concerns raised in critiques of research based on people's stories indicate that it is also important to be aware of the complexity and contingency of such inquiries. A similar attention to complexity and contingency characterizes the study of computer-mediated adult and distance education, as discussed in the next section.

Computer-Mediated Learning and Adult Education

The development of adult and distance education has been intimately linked to new technologies throughout its history. Technologies for print, video, radio, telephone, and television have been incorporated into the adult educator's toolkit and have affected both the way we "do" education, and the way we think about it. Computer technologies have had no less profound an effect on the provision of education to adults. In turn, the

increased prevalence and attractiveness of computer media for distance education has made it a key area of inquiry in adult education research. Imel (1998) reports that, since 1995, courses taught through the World Wide Web have grown into the thousands. In 1996 some 1,000,000 learners were involved in Web-based courses; this number was projected to grow to 3,000,000 by the year 2000 (Imel, 1998). Within this enterprise, the stories of on-line learners play a pivotal role.

History

Computer applications for education have been around since the development and spread of the use of personal computers. However, the 1980s saw this use evolve beyond drill-and-practice, computer-aided instruction, and similar mechanistic applications that were based on isolated, unlinked users. Access to on-line applications such as computer conferencing, e-mail, and databases opened up a new way of linking learners and resources at a distance. The Open University in the United Kingdom pioneered one of the first large-scale systems for computer-mediated communications (CMC) in their high-population undergraduate courses, and hosted an early conference in the field (Mason & Kaye, 1989). Themes and issues explored in the conference papers and associated resource files set the stage for further research: the unique nature of computers as a communication medium, models for distance education process based on CMC, and the impact of CMC on the interactions between people and organisations in the distance education environment. In the same year, Garrison (1989) writes from a Canadian perspective to examine the potential of the computer as a processor of information within the educational transaction. He concludes his discussion of the

application of computers in distance education with a statement that foreshadows much of the research in the field in the 1990s, "In the past independence and interaction were regarded as mutually exclusive concepts; more of one necessitated less of the other....Computer based distance education has substantially altered this situation" (p. 88).

A number of authors in the 1990s reflected on the increasing availability and use of personal computers in academic settings for adult learners; their attention began to establish CMC as an area of study in adult education. Overviews of this growing and varied element in distance education (e.g., Berge & Collins, 1993; Cahoon, 1998; Chacon, 1992) provide practitioners with a theoretical framework for conceptualizing and understanding the capabilities, benefits and limitations of the "new media." Jones, Kirkup, and Kirkwood (1992) evaluated the Open University's Home Computing Project, which required learners to acquire personal computers for course work, and concluded that the evolution of educational models is tied to the evolution of the technologies on which they depend. New technologies bring new problems as well as new solutions, highlighting long-standing issues of equity and disadvantage.

In a discussion of research and practice in using virtual reality for education, Helsel (1992) contrasts technological and conceptual orientations. Helsel asserts that technology is the primary focus of the former, while the human processes of learners are the focus of the latter and technology is seen as a tool to facilitate these processes. Helsel's concern with the human dimensions of virtual reality in education is typical of much of the more recent writing in the area of computer-mediated adult education. De

Bruijn (1993) links computer-aided learning (CAL) with adult education principles and gives illustrations from research and practice of ways in which CAL can be designed to shift the locus of control from the instructor to the learner. Increasing attention is also being given to the role of the moderator in on-line discussion groups, as a recent bibliography of articles for moderators by Berge & Collins (1996) illustrates.

Canada has a long history of research and practice in adult, continuing, and distance education which has extended to include the study of new media including computers. An examination of the *1998 Yearbook of Exemplary Practice* of the Canadian Association for University Continuing Education reveals that of the 16 programs submitted for the year's program awards competition, 5 use Internet-based communications as an integral part of program delivery and student assessment. Internet sites for programs and courses, on-line seminars, and use of the Internet to connect learners in areas as remote as Nunavut Arctic College and the University College of Cape Breton are only some examples of the innovative use of computer technologies for Canadian distance education. One Web site called The NODE (home page available at: <http://www.node.on.ca>) is a focal point for information and discussion forums on issues related to teaching, learning, and technological development. A recent NODE forum (Blackburn, 1998) discussed how to build interactivity in learning environments on-line, and how this process can contribute to shared creation of knowledge. Other Canadian researchers such as Boshier (1988), Burge (1994), and Haughey and Anderson (1998) have drawn from the experiences and stories of on-line learners and instructors to relate learning and communications theory to the practice of adult education in the wired

world. Haughey and Anderson classify the major advantages associated with networked learning into communication and interaction, immediacy, permanence, diffusion, and excitement; suggested activities that build on these elements are outlined for facilitators.

Current Themes in Research and Practice

Three major themes emerged from an examination of current research and writing about the use of computer-mediated communication in distance education.

First, much of the research in this field derives from a constructivist viewpoint, stressing collaborative learning and the mutual construction of knowledge. Hollis (1991) reconciles and links humanistic learning theory with instructional technology, suggesting that instructional theories must draw on the foundations laid by learning theory as the field evolves. From a learner's point of view, the influence of constructivism on instructional design has encouraged the use of computers as tools to encourage shared creation of knowledge and reflection on how learning occurs.

Two recent examples illustrate how this trend has been manifested in innovative and learner-centred distance education. Through interaction with learners in her international on-line education course for practitioners, Pincas (1998) developed a deep sense of how people work in this new learning environment. She realized that engaging with each other was hampered in less-structured settings, and she formulated a model for a mental representation of virtual space and time to facilitate asynchronous discussion. In this theme, the stories people tell are rooted in time and place; practices that build a sense of time and place in virtual environments can enrich the stories that learners construct together. McVay (1998) has a wider scope--faculty and student development in

support of collaborative uses of on-line technologies--and McVay proposes that instructors need to plan, teach, and model behaviours that students can use to enhance knowledge construction and interactivity.

The second theme centres around the relationships between communication and community. On-line social networks are being seen as virtual communities that can be studied in order to understand their impact on individuals and society. One example of this is found in a recent review of research on the topic (Garton, Haythornwaite, & Wellman, 1997) which argues that a wide-ranging approach is necessary to understand the multiple levels and arenas that connect on-line and off-line relationships, especially as they relate to virtual communities in the real world. Carl Cuneo, program leader of the Network for the Evaluation of Education and Training Technologies and professor at McMaster University, applies this sociological concern for the effect of technology on individuals and social behaviours to the practice of on-line education (see the NODE, 1998a). Adult educators like Cuneo are examining the ways in which the computer can transcend boundaries of knowledge, time, structure, class, gender, and power to bring individuals together in interactive learning communities. Montgomery and Little-McGill (1997), for example, present a rationale and model for creating on-line learning communities based on technology as an enabler. They discuss ways in which e-mail, chat rooms, computer conferencing, and similar computer-mediated tools can be built into Web-based courses to increase a sense of collaboration and community that goes beyond traditional models for distance education teaching and learning.

The third theme concerns the emergence of new paradigms in psychology and education which are fuelled by the stories of individuals and groups involved in the growing on-line world. As Turkle (1995) postulates, computer culture has affected the way in which people think about basic concepts like mind, body, self, and machine. As she states, "Computer-mediated experiences bring . . . philosophy down to earth" (p.17) and are a means of making concrete the abstract ideas of postmodernism and the fluid, multiple self. Life in cyberspace is serious play that allows computer users to integrate this multiple self and enrich real-life experiences. As this section illustrates, computer-mediated tools for continuing and distance education are changing the way adult educators practice as well as the ways in which we study and reflect on this practice.

Adult Learning Theory and the Design of Learner Support

Theory and practice in adult education are tightly interwoven. Kidd (1977) establishes this connection in his groundbreaking treatment of adult learning, education to meet societal goals, and self-direction. Similarly, Cross (1981) directs attention to adults as learners with a view to helping practitioners facilitate learning and increase adult participation. Brookfield (1984) expands the application of theory about adult learning beyond formal settings to a consideration of how what adult educators know about informal adult learning can support and illuminate educational aspects of community development and activism. Throughout the growth of adult education as a field of study, theories about how adults learn have been used to guide program planning and implementation in a wide range of settings.

More recently, authors have brought together many strands from adult learning theory to create guidelines for practitioners. Several Canadian writers (i.e., Brundage & MacKeracher, 1980; MacKeracher, 1996; Waldron & Moore, 1991) stress the importance of understanding the nature, needs, and characteristics of adult learners when planning educational programs. MacKeracher presents an especially detailed and relevant model for the practitioner. She derives learning principles and facilitating principles from theoretical and research perspectives on learner characteristics, aspects of learning (emotional, cognitive, social, physical, and spiritual), learning cycles and styles, and facilitation models. Her overarching themes for facilitators include the need for focussed planning, relevance, responsiveness, passion, self-reflection, transformative power, critical thinking, and attention to both relational and autonomous learning. The importance of the learner's perspective in understanding adult education and the role of the researcher/planner as a co-learner in the development and implementation of programs is central to Boud and Griffin's (1987) collection of articles from qualitative researchers, adult educators, and learners. Connecting adult learning theory and practice is as relevant for university settings and practitioners as it is for programs more frequently associated with adult education (Brookfield, 1990; Percival, 1993).

One of the most pervasive theoretical constructs used to guide program planning has been self-direction, as described by authors such as Candy (1991), Knowles (1975), and Tough (1979). Although the concept has often been fused with independence, so that the ideal self-directed learner is frequently described as a totally independent agent, recent authors (Campbell, 1995; Garrison, 1992; Griffith, 1983) insist that self-direction

must incorporate interdependence. Griffith defines interdependent learning in terms of self-directed learning within a community and includes researcher participants as part of the interdependent learning community. Garrison argues that self-direction is not an autonomous and isolated activity, but rather one that allows individuals both to share control of their learning through collaboration and to take responsibility for their learning through self direction.

Adult educators who define self-directed learners as interdependent should incorporate elements designed to support and connect learners into their programs. Support networks are seen as crucial to transformative learning (Cranton, 1994) and, as will be seen later, to meeting the needs of multiple-role learners, particularly women (Edwards, 1993; Home, 1993; MacKeracher, Wall, & Doucet, 1993).

MacKeracher (1996) outlines several principles from adult learning theory that can guide the provision of learner support. Adults benefit from educational environments that have flexible time frames, lower stress, and an atmosphere of mutual trust. Learner self-concept and self-direction can be enhanced when facilitators plan for validation of learners as learners, integration of new learning, socialization with other learners, reflection, and opportunities for learners to assess and plan their own learning paths. Emotional, cognitive, social, physical, and spiritual aspects of learning can be fostered in small supportive groups where individuals are able to share their perspectives and to explore new ideas and skills together. From MacKeracher's principles, I infer that learner support interventions ought to be sensitive to the variety of learning styles (Kolb, 1984) possible for adult learners and to the cognitive and emotional cycles that learners

experience. Facilitators are directors, enablers, and collaborators of learning and should incorporate a variety of modes of facilitation to respond to learners' needs, behaviours, and preferred styles of interaction.

Distance Learning and Learners

Several writers (i.e., Hail, 1996; Garrison, 1989, 1997) have traced the effects of a paradigm shift in distance education theory and practice. Garrison contrasts the rational, objectivized, and mass-produced industrial model for distance education with a post-industrial technology of computer-mediated communication. The latter is slowly replacing the industrial paradigm with an approach that is critical, reflective, collaborative, highly interactive, and personalized.

The Changing Concept of Distance Learning

A 1996 task force of the International Council for Distance Education (ICDE) Standing Committee of Presidents (Hall, 1996) conducted a worldwide anecdotal survey of members from all sectors of the ICDE on challenges facing distance education in the information age. Their report confirms the paradigm shift that is occurring for practitioners--from objective to constructed knowledge, from an industrial to a knowledge-based society, from providing instruction to providing learning, and from current college and university models to as-yet-unknown structures for learning communities. A 1989 collection of articles on the state of post-secondary distance education in Canada (Sweet, 1989) confirms that policies and practices in Canadian universities are following this shift. New media, access and support for learners, technology and design issues, and partnerships with other providers are priorities.

In fact, the very definition of distance has been revisited and reframed in recent years, again largely driven by the growing use of computer networks for distance delivery. As Edwards (1994) explains, “The seemingly settled categories of ‘distance’, ‘learning’, and ‘the learner’ which appear in the dominant humanist discourse of distance education are actually fluid and subject to change and need to be theorised as such” (p.10). Distance is no longer only defined with relation to geography. As Haughey (1995) points out, distance is also frequently defined in terms of time and difference. For example, adults living in close proximity to a university may choose a distance course so they can schedule learning activities during times convenient for their work and family responsibilities, rather than during the times allotted for classroom-based courses. Differences can include cultural, social, and psychological distinctions that place learners at a conceptual distance from the educational enterprise. Within this conceptual distance, issues of learner independence and interaction, the role of the teacher, the role of technology, isolation, presence, and dialogue can be reassessed.

The Nature of Distance Learners

Assumptions about the needs and characteristics of distance learners are being challenged as the audience, importance, and scope of distance education increases and diversifies. Many new perspectives have arisen from examining women’s experiences with distance study, for example. May (1993, 1994) presents both commonalities and diversity in women’s experiences of distance education. The women in her studies consider time restraints, personal comfort, educational access, and study style preferences the most important factors in their choice to study by distance. However,

distance education for them is often a matter of necessity, not choice. May also finds that women learners actively endorse and prefer the solitary nature of distance study and that efforts to increase social interaction are not always useful, important, or appropriate for them. She concludes that institutional responses should provide models for collaboration that encourage and convince distance learners without imposing inappropriate institutional control over when and how much they are expected to interact.

Other writers such as Burge (1990), Collins and Haughey (1986), and Coulter (1989) explore the reasons why adult learners choose to study by distance. The most common reasons given are flexibility in respect to family and work responsibilities, accessibility of programs and courses to learners who cannot attend on-campus classes, time constraints, more ease with learning on one's own than in a classroom, better fit with personal learning style preferences, and higher degree of personal control over the learning process. As Coulter notes, feminist critiques of distance education have asserted that these factors can also lead to a further isolation of women students by encouraging their separation from the wider university community. She responds to these critiques by pointing out that distance delivery can overcome limitations and meet women in their real lives. In her study, distance education proves to be at least as effective as on-campus education in empowering learners to make choices and to act in their communities.

Burge (1990) reviews questions and issues facing women in distance education and concludes that access and retention, learning design, and course content can both reinforce existing hierarchical structures and break them down. The challenge facing educators is to design systems and curricula that are sensitive to the lives of students of

both sexes and that overcome inhibiting factors. New technologies need to be brought to bear on the creation of more supportive and open environments for learners. In addition, distance education programs can validate, publish, and celebrate the experiences and values of distance learners.

The role and value of independence and interdependence for distance learners has remained a key question. Garland (1994) distinguishes between individual learning and independent learning. Adults feel a need for respect, personal control, and fulfilment that can create tensions between their roles as student and adult in society. Those who successfully complete their programs are more likely to have integrated their independent learning with their societal roles. Based a on a study with adult learners at Athabasca University, Hotchkis (1992) concludes that distance learners are not as concerned with integration and interaction with the student community as they are with integrating their educational experiences with their own social networks. Unlike campus-based students, they have little division between academic and public communities. This study points to the need for distance education providers to remain sensitive to the wider social environment of their students, while raising questions as to how the rise of computer-based social networks could be used to foster a stronger sense of connection to the learning community.

Support for Distance Learners

Distance education students have varied backgrounds, different levels of familiarity with new learning formats, and many conflicting demands on their energy and time. Support services can enhance their chances of success and persistence in their

distance studies. However, the design of support for distance learners has generally taken second place to more immediate instructional design and delivery questions in the literature and in practice. Based on her review of literature related to the needs of returning learners, Potter (1994) concludes that supporting distance education students represents a largely unmet challenge for researchers and practitioners.

Learners in distance programs value prompt feedback and support from instructors (Stoffel, 1987). Work by Potter (1994) indicates that they are often individuals in transition, that is, at a period in their lives that demands personal re-evaluation and openness to change. Distance education promises equal access for the full range of gender, social, economic, and geographical groups. Equal access alone, however, is not a guarantee of a successful learning experience. As Hipp (1997) demonstrates in a study of the support needs of women in an Australian distance education program, learners need access plus equity once they are in the distance learning system. Planned, consistent support can build learner confidence, overcome isolation, and connect the learner to the university community.

Educators engaged in learner support can benefit from models for program planning, just as they do from models for instructional design. Brindley (1995) provides a timely and practical guide for learner services in distance education. Brindley's model begins from

the position that provision of learners services is one of the key ways in which those engaged in distance teaching can demonstrate a commitment to learner-centredness in order to become more competitive and better positioned strategically to serve the pressing demand for high-quality, accessible education and training. (p. 102)

According to this model, learner support services should have the following goals:

(a) developing independent learners; (b) empowering learners; (c) personalizing the system; (d) making the system more democratic; and (e) engaging and connecting with learners early in the educational experience. Suggested strategies for meeting these goals include recognizing and acting upon learners' experiences and ideas, minimizing and explaining administrative barriers and delays, making personal contact with learners through a variety of technologies, encouraging active involvement of learners in their educational plans by ensuring that they have access to relevant information and skills, and emphasizing the process of learning as much as the content.

Working With the Stories of On-Line Learners

As the Internet and related technologies are used to deliver more educational experiences to a wider range of audiences, an increasing number of reports from the field are available to guide and challenge the reflective practitioner. Following is a review of the literature, mainly taken from Canadian sources. As noted earlier, Canada has a long history of innovation in using technology for distance education. It has an equally well-established tradition of participant-based adult education research. Finally, relevant factors important to my own research and practice were present in cases from similar settings and sociological backgrounds.

From the Learners' Perspective

The majority of case studies in on-line and computer-mediated learning come from its application to the delivery of courses and events such as conferences, and they concentrate on the experience of learners/participants. An early Canadian example is a

labour and educators' computer conference by the Canadian Union of Public Employees (CUPE) and Athabasca University in 1992 (Spencer, 1993). The open agenda allowed diverse sectors of the labour and social movements to pilot the use of e-mail and computer conferencing to discuss labour education and the use of computers to deliver labour studies at a distance. Spencer presents a selection of messages from conference participants which displays the variety and interactivity possible when individuals can connect in this way, and which highlights the need for skilful facilitation.

An important field study by Eastmond (1995) in adult distance study through computer conferencing is based on the stories of learners and researcher/instructor alike. Eastmond's perspective is informed by his multiple roles as learner, teacher, and qualitative researcher; he presents a rich and detailed account of the impact of computer-mediated learning on the lives of a diverse group of individuals, through their own words and reflections on their experience. Human qualities of individual learners with unique experiences are central to discovering the meaning of adult on-line learning. From this analysis, Eastmond asserts that although computer conferencing can provide a medium for overcoming social, gender, age, and ethnic barriers, its ability to do so is not inherent. Course design, facilitation style, and learner characteristics interact with the medium to determine how effectively it can work. The experiences of learners form the foundation for a work that is speculative, questioning, and applicable to the practice of on-line education.

The voices of learners can be equally important in course design and evaluation. Wong (1998) reports on an ongoing project at the University of Saskatchewan to deliver

a mathematics readiness course to geographically-dispersed populations in Saskatchewan via the Internet. Learner input via telephone interviews, on-campus meetings, and focus groups supplements on-line feedback to improve course design, delivery, and learner support. Much of the report consists of information quoted directly from learners, often referring to the ways in which the course and the university intersect with their work and family lives. Similarly, the designers of an on-line course in computing for teachers relied extensively on learners' comments to modify the course thereby building a learning community through e-mail, discussion groups, and Web pages (Westrom & Pankratz, 1997).

Listening to learners' stories can also alert course designers, instructors, and administrators to problems and limitations of the technology. A survey of environmental science students in internal and external programs at the University of South Queensland, Australia (Spennemann, 1996) reveals significant differences between males and females in ownership of and access to computers. Such differences in access translate into severe disadvantages for females engaged in on-line learning and, as argued by Spennemann (1996), need to be taken into account for course design and administration. Limitations of on-line discussion listservs, conferences, and teaching are explored by Klemm and Snell (1996). Although their model for engaging learners more actively in these settings via the production of papers, discussions, and other academic products seems rather over-structured and formal, they do have practical suggestions to make for on-line facilitators who are struggling with low involvement, as will be discussed next.

From the Instructors' Perspective

The stories and experiences of instructors and facilitators can also provide a useful perspective for understanding on-line learning. Strickland (1998) gives a personable and readable account of her continuing engagement with colleagues and fellow students, beginning with her graduate school experience with an on-line seminar on human issues in electronic communities. Through this seminar, she became part of the creation of a working and long-lasting community whose geographically separated and diverse members communicated, interacted, and collaborated via e-mail. Her paper is a good example of how computer-mediated communication can extend the boundaries of educational events in time as well as space, enabling people to continue to influence each other long after a given course is over.

A similar collaborative effort is reported by Murphy et al. (1996). The collaborators are instructors, graduate students, and graduate assistants in six semester-long computer conferences for pre-service teachers and graduate students in education. Students took on the role of facilitating and moderating the conferences, with guidance and assistance from the instructors and graduate assistants; their accounts of the experience form the core of the conclusions drawn by the group about effective on-line moderating skills and the development of a community of learners.

A final example of adult education principles applied to on-line learning provides a fitting summary for this selection of case studies. McMaster University's LearnLink system is a university-wide network using e-mail, conferencing, and chat rooms to link learners and instructors (see the NODE, 1998b). It differs from many

applications of this technology in that it links individuals across disciplines and backgrounds, rather than being connected to one course or program. Learners in one class can access discussions in other classes, unlike most campus computer networks. The model is the little red schoolhouse where individuals can communicate and collaborate across subjects and grade levels as their needs and interests dictate. Responses from both learners and instructors have been positive, although there is some resistance (mainly on the part of faculty) to the breaking down of traditional boundaries. Developing this sort of fluid, unstructured, and open community of learners may represent the highest potential of on-line learning for the reflective practitioner.

Theoretical Framework Drawn from Literature

From this literature, I have drawn a theoretical framework within which to situate my study. I also reflect on areas where my study may extend this same framework.

The Overarching Framework

Qualitative research, adult education, distance learning, and computer-mediated learning share several noteworthy characteristics: (a) attention to relationships of power between researcher and subject(s), teller and listener, teacher and learner; (b) concern for the ideological consequences of research on practice; (c) willingness to ask “Who benefits from this inquiry?”; (d) sensitivity for the human element in educational transactions, with its attendant complexity and contingency; (e) grounding of research in experience, practice, and the lives of individuals; and (f) constructivist views of knowledge that stress collaboration and community as integral to research and learning.

Story interconnects these areas of inquiry. Adult educators are co-learners as well as practitioners. Such stories are the starting point from which adult educators attempt to make sense of learning communities. Sharing stories grounds our research and practice in the real lives of our co-learners and provides a richness and complexity that reflects the variety and uniqueness of shared experiences.

Computer-mediated communications have, in a sense, facilitated the telling and hearing of stories within the often isolating constraints of distance education. They can transcend social, geographic, class, gender, and time barriers among individuals and have considerable potential to enhance the creation of learning communities at a distance. Practitioners need to be aware of how this barrier-breaking occurs if they are to build in structures and practice skills that will encourage community in the on-line environment. However, it is a potential, not a given. On-line educators need to acquire facilitation skills that are often quite different than those needed for face-to-face settings-- moderating, technical, and communication skills have to be adapted to a text-based context with few cues to meaning. Practitioners can also ensure that program design and delivery maximize the technology's potential for creating critical, reflective, collaborative, interactive, and personalized environments for learning. Being attentive and receptive to the stories of on-line learners is essential to bring theory into practice in this rapidly-changing and technology-driven area of adult education.

Canadian universities have a history of applying leading-edge technology to continuing and distance education, and the advent of the "new media" of computers and the World Wide Web is no exception to this history. As momentum builds to deliver

more courses and programs on-line, adult educators need to build on existing content and design expertise. Course design must incorporate attention to learning from the learner's perspective. It is worth noting that the process of translating on-campus courses to new media delivery frequently challenges instructors' traditional views on how learning and teaching occur. Building community and connecting learners is especially important in our work because it extends over an ever wider geographical area.

Analysis and review of current literature in the fields of computer-based learning design, adult learning theory, and distance learning revealed areas in which my study could expand on previous work. In the following subsection I reflect on possibilities for study in adult continuing education that have been under-represented in the past.

Computer-Based Learning Design

Research, writing, and practice in computer-based learning design remains dominated by specific, course-based, treatments of design and delivery. However, increasing attention is being given to a more holistic approach that includes learner characteristics, learning styles, and adult learning principles. As seen in chapter 3, my study sought to extend this development to examine the use of computer-mediated avenues for more generalized learner support, development of meta-learning, and enhancement of on-line environments for learning.

Adult Learning Theory

Program planning has been a key field of inquiry within adult learning. Self-direction, as a trait of successful adult learners and as a learning phenomenon, has been a major influence on educational theorists seeking to build models for program planning.

A major barrier to applying self-direction to program planning and learner support has been the tendency to assume that self-directed learners are necessarily and only independent learners. More recently, self-directed learning has been reassessed to include characteristics such as interdependence, connection, and community. My study sought to incorporate this wider view of self-direction, which encourages interdependence and connection, into on-line learner support at my university.

Distance Learning

Literature in distance education theory and practice has documented a paradigm shift in the planning and delivery of distance learning, from a rational, objectivized, and mass-produced industrial model to a post-industrial model that is critical, reflective, collaborative, interactive, and personalized. Principles derived from the themes of constructed knowledge, a knowledge-based society, learning rather than instruction, and support for learning communities are becoming part of instructional design and delivery. As seen next, my study attempted to extend the application of these principles beyond course design and into the realm of learner support and community.

As new technologies increase the numbers of individuals involved in learning at a distance, more attention has been drawn to their characteristics and needs. Learners value the educational opportunities that are accessible, flexible, and fit their self-directed learning styles. However, as the audience for distance learning grows and diversifies, previous generalizations about the needs of learners have been challenged. Planning and learner support need careful attention in order for continuing education units to meet the diverse needs of distance learners.

CHAPTER 3

DESCRIPTION OF THE STUDY

As indicated in the previous chapter, the design and implementation of my study were situated in the intersection of perspectives from adult learning, distance delivery, and on-line education. This chapter begins with a description of the design of the study and provides an emphasis on the derivation of working principles from the relevant theoretical areas. Next, I describe the more practical decision-making involved in setting up the study forums. From the design issues, I move to a description of the forum in action; in this section I present learner messages as qualitative data and I describe the themes I extracted from these messages. The final section describes the evaluation of the study.

Design of the Study

Several adult education principles and perspectives were important elements in the design of the study. As an adult education programmer, I needed to interweave theory and practice, reflection and action, while building strong relationships with fellow practitioners and the learners I serve. I envisioned the study as a means of encouraging transformative learning that moves beyond the boundaries of content and course work, and connects learners. For me, the importance of the relationship among adult learners, adult education, and the community further supports the value of bridging formal and non-formal modes of learning in an on-line environment. Issues around support for distance education learners, and the need for researchers and administrators to address

the complexity and diversity of the support needs of adult learners at a distance, challenged me to think about how my institution could use the new media to enrich learners' experiences. And, perhaps most critically, my appreciation and understanding of adult learning practice prompted me to ground this study in the perspectives of the learner.

Several research perspectives on the use of computers for adult education were equally important in my design process. The unique nature of communication via computers in distance education and its impact on both learner interactions and the structure and cultures of the distance education unit is central to my study. Work by researcher practitioners provided me with models for implementing an on-line intervention that would focus on collaboration, communication, and attention to the learner.

Design Elements Derived from Adult Learning Theory

I found MacKeracher (1996) to be a useful model for deriving principles from adult learning theory which I, in turn, used to guide my program design and practice of facilitation. Key principles are derived from three areas of research and practice in adult learning: the characteristics of learners, aspects of the learning environment, and learning cycles and styles. Each of these categories can be used as a lens to focus attention on different areas that design of the intervention should address.

Many physical, emotional, and cognitive characteristics of adults are particularly important for adult learners. Most adults learn best when time limits and environmental factors are conducive to lower levels of stress. Their time perspective and the

importance of prior life experience demand that learning should have both immediacy and relevance. The literature supports the principle that learning should be designed to offer learners a safe environment in which they can reflect on and integrate their experiences. Most adults have a self-concept that incorporates multiple roles--worker, family member, social being--and benefit from interventions which help them to value the role of the learner as part of their development. Although individuals differ in their degree of self-direction (and despite conflicting theoretical opinions on the concept of self-direction), I considered it important to build opportunities for increased learner involvement and provide positive models for learners. The forum style I chose for *Student Talk* needed to be open, flexible, and not bound by course requirements to follow a strict format. Learners should be able to choose when, how, and how much they wanted to participate according to their physical, social, and developmental situations and needs.

The literature on aspects of learning (e.g., MacKeracher, 1996) indicates that the multiple dimensions of learning are encouraged most strongly in settings that are non-threatening, yet allow individuals to test new skills and ideas with other learners. I had to make several choices in the planning stage in order to ensure that the *Student Talk* forum addressed, as far as possible, this holistic point of view. For example, the group was open to learners from all Web-based courses regardless of level, background, or subject area, upon their request. Consequently, a variety of perspectives became integral to the discussions. Although I placed no limit on the number of learners, I expected that the number would be small enough to be socially comfortable and allow all members a

chance to participate. As the moderator, I needed to be attentive to creating an open and friendly climate while paying attention to the many facets of learning. The asynchronous nature of the communication could be used to give learners time to reflect before contributing, and to remove barriers to communication. Of the 17 persons who requested access to the forum over the three semesters, a total of 8 eventually posted messages on it.

Research on learning as a cyclical activity and on learning styles was also important in designing the *Student Talk* forum. I was aware that the individuals involved would join the process at differing stages in their individual learning cycles related to their course studies. As well, the forum itself was subject to its own cycles of concrete experience, reflection, experimentation, and feedback. The forum and my facilitation of it needed to allow time, structure, and encouragement for the learning cycle. As a facilitator and co-learner in the group, I had to remain sensitive to the emotional aspect of learning and open to the cycle of disorientation, exploration, reflection, and reorientation that might occur.

Computer conferencing can allow learners to begin where they are most comfortable in terms of their learning styles (Kolb, 1984). In order to accommodate this, I structured the forum with a series of folders, each of which contained discussions about a particular topic. Within a folder, it was possible for new layers of discussion to occur depending on responses to the folder topic. Individuals who preferred a more linear style of learning could benefit from the organized folder structure, while more holistic learners could move easily from topic to topic and get an overview of discussions. Using

Kolb's (1984) terms, learners can be described as divergers, assimilators, convergers, or accomodators depending on their preferred learning style. Divergers prefer to move from overall concepts to details; they could see the entire structure of the discussions at one level to get the big picture, then move easily to the individual folders and messages to build detail. Assimilators prefer to read information, reflect on it, and plan their responses with no time constraints; the conference format allowed them more opportunity to do so than most face-to-face discussions. Convergers typically build on specifics to develop larger concepts; they could focus on individual messages and move from there to the larger topics and themes of the forum. They would also be most likely to help define tasks, set goals, and suggest new topics. Accomodators are most comfortable when learning allows for hands-on application of knowledge in practical ways; they could focus their active participation in the forum on matters directly relevant to immediate needs and concerns. I knew that the conferencing system itself, with its combination of layered structure and open content, could be used to encourage the learners to integrate elements of other learning style orientations into their preferred style. Of course, my own learning style was important in the planning and facilitating phases. I am strongly divergent and therefore prefer to start by sharing experiences in order to generate ideas, questions, and topics to brainstorm. Thus, rather than starting by defining the entire structure of the forum, with folders and topics determined in advance, I decided that the best approach was to begin very simply and build the structure of the forum by adding folders and suggesting new threads of discussion in response to the group's feedback and interests.

Design Elements Derived From Research on the Characteristics of Distance

Learners

Several generalizations about the typical distance education learner are still current among practitioners. They are considered, as a group, to be older than their on-campus peers, more likely to have completed previous post-secondary courses, out of formal schooling for an extensive period, more likely to belong to social and economic groups that were previously under-represented in post-secondary study, and more likely to be female. Distance learners are, in my experience, often a more heterogenous group than on-campus learners--including rural and urban dwellers, many ethnic groups, a wider range of ages, differing socioeconomic levels, and both genders. They bring many individual characteristics and situations to the learning environment. They are also considered to be more self-directed and independent learners. I therefore planned the forum so that it encouraged individuals with a variety of characteristics to participate, to share their perspectives, and to exercise their capacity for choice. For example, my introductory message welcomed learners to introduce themselves, to describe what they were doing, and to indicate their interests; I introduced myself by describing my multiple roles as administrator, graduate student, and family member.

These distance learners' generalizations, while having much validity, are being challenged by more recent studies. Because learning at a distance is always mediated by some form of educational technology, learners are often isolated from the educational institution and from fellow learners. However, this does not necessarily mean that they are more independent learners or are less in need of learner support services. In fact, the

nature of distance learning and teaching necessitates a more conscious focus on balancing independence and interdependence in the educational transaction. The design and provision of support services are as important as the design of effective curriculum and delivery of distance courses. Learners at my university frequently tell me that they choose to study by distance because they see it as an easier, more accessible, flexible, or independent way of gaining educational credentials; they may, in fact, enter this form of learning relatively unprepared for the challenges it presents and become locked into a rigid and structured approach to their studies. For this reason, I believed that the forum should be open to learners in all Web-based courses at my university so that they could participate in a distance learning activity that was not bound to their course work. The topics I suggested in the introductory pages and contacts with learners welcomed their comments on both what works for them and what does not work for them as learners at a distance.

Brindley (1995) outlines five goals for learner support efforts aimed at distance learners: development of independence, learner empowerment, personalization, democratization, and early engagement and connectedness to the institution and to other learners. I found these to be pertinent and practical goals in planning my study forum. In order to foster independence, the forum was open and the degree of participation was the learner's choice. I decided to share my experiences and to validate their experiences as a way to encourage empowerment; and, equally important, I decided to respond to needs and concerns expressed in learners' posted messages, wherever possible, in order to reinforce their feeling that their ideas mattered. I decided that my initial e-mail responses

to learners, as well as the responses I posted in the forum, should convey a friendly and welcoming tone so that they would see the forum as a way to make easier and more personal contact with the institution. By setting up this sort of non-course-forum, I also hoped to democratize the process by offering learners at a distance the opportunity to talk about their experiences in the same way that on-campus learners are able to simply by virtue of being in the same physical space through much of their educational time. I also chose to base the *Student Talk* forum in the conferencing system which learners were familiar with through their Web-based courses in order to minimize barriers to early engagement, and to focus on topics that would encourage a more rapid sense of connectedness.

Design Elements Derived from the Nature of On-line Learning

On-line or networked learning has its own set of characteristics which I had to incorporate into the design of the study forum. Compared to other distance modes, on-line learning is more interactive and allows for more direct communication among learners, instructors, and institutional staff. Choosing computer conferencing for the study meant that the group could interact freely via a relatively familiar technology, while having opportunities for reflection and thought that would not be as readily available in a real-time forum such as a chat room.

Networked learning is characterized by immediacy, so I needed to ensure that communication with the group was timely, responsive, and sensitive to the time demands of the semester system. The latter, in fact, was a particular challenge given the short (13-week) semester. Contacting the Web-based courses had to take place late

enough in the semester that they were settled into courses and into using the AltaVista conferencing system, but not so late that course assignments and other demands would interfere with their participation. In practice, contacting the courses several weeks into the semester seemed appropriate.

Computer conferencing, like other forms of networked communication, has a degree of permanence in that the interactions (via messages posted to the forum) can be readily captured and saved--both for the purposes of the study, and for the benefit of the learners in reading and responding to each other. However, this public record could be a sensitive issue for learners. I decided to inform learners of this from the beginning, and to ensure as much confidentiality and safety as possible. By setting up a moderated forum, I could reassure learners that access was restricted to only those individuals who responded to my invitation to join. Early in the planning and implementation stage, the question arose as to whether or not instructors would be permitted to join the group. I decided, after some thought, not to include instructors in the forum so that learners would not feel intimidated or silenced. As administrator of the forum, I controlled access by adding the login names of only those learners who requested me to do so via e-mail.

Computer-mediated learning, especially over the Web, is characterized by diffusion. Learners can readily access a wide range of resources and expertise that need not be geographically concentrated. By setting up this forum in a Web-based environment, I was able to tap into this wider range of resources and provide support for learners that was not necessarily limited by our internal resources. For example, when

learners indicated that they were unable to consult printed copies of the university calendar in their home communities, I referred them to the university's on-line calendar.

The final characteristic of on-line learning, especially at present, is the excitement inherent in using a new means of communicating. I sought to communicate my own excitement and interest in on-line communication for learning and support, and to draw on the enthusiasm of learners who are exploring the rapidly growing networked world.

The Intersection of Adult Learning Theory, Distance Learning, and Computer-Mediated Learning

My review of the literature and personal experience working with learners helped me to identify several common themes that could guide my planning and implementation of the *Student Talk* forum. First, the forum had to be learner-centered and involve learners actively. It had to include avenues to share ideas not only about what they had learned, but how they had learned it. I knew that questions about what worked, what did not work, and the problems and pitfalls involved in learning via the Web would be valuable.

Second, it had to be flexible to accommodate the variety in learning styles, situations, and needs that the learners might bring to the group. The threaded discussion format of the AltaVista conferencing software used to support the *Student Talk* forum was an appropriate means of allowing learners some choice in the topics they contributed to, the time they spent on the forum, and when they participated. An asynchronous form of on-line communication was preferable to synchronous forms

because it allows learners to think about their communications to the group and to make them whenever their schedules allowed.

Third, the forum would serve to connect individuals, overcome isolation, and foster both a sense of interdependence and membership in a community of learners. Using the conferencing system that was already in place and associated with Web-based courses at the study institution connected the forum to the university and placed it as part of our university's service to learners in its Web-based courses.

Fourth, support for learners needs to operate at many levels including purely technical concerns, research and access to information, learning styles and skills, and affective elements. Again, the choice of the AltaVista conferencing system made sense in terms of reducing the technical barriers to participation. I structured the forum to address some immediate levels of support while keeping avenues open for others.

Organizing the Implementation

The first stage in implementing my study was to obtain approval from the School and from the instructors of Web-based courses being offered in the winter, spring, and fall 1999 semesters. I sent the following e-mail to instructors in all 33 courses which were offered over the three semesters.

Hello!

I'm writing to ask for your assistance in implementing a study required for my Master in Adult Education program from St. Francis Xavier University. I've included a copy of my study outline as an attachment to give you an idea of what I'm planning and how it fits with our work in <institution>'s distance education and 'new media' courses.

Essentially, I would like to facilitate a Web conference forum that would be open to any students enrolled in WWW-based courses at <institution> this term. <Name>, one of our instructional design team, has indicated that this would simply require that instructors in these courses give permission for a link to be established to this conference from their course Web page. Information on the study would be available to any students who choose to participate.

I would appreciate it if you could grant this permission for any courses you are teaching this term. Please feel free to contact me if you have any questions, concerns, or suggestions about the study.

Thank you for your time and consideration.

Diana
Program Developer
Certificate and Affiliated Programs
M.Ad.Ed. candidate, St. Francis Xavier University

E-mail messages and postings to my conference forum are presented throughout this thesis in text boxes for clarity and ease of recognition. Typographical and grammatical errors in the original messages are retained, without using [sic], to avoid interrupting the flow of the message text. Emoticons--computer shorthand indicating emotions or states of mind--are also used in these messages; the most common are :) (smiley) to indicate that the writer is happy or joking, and :((frown) to indicate that the writer is unhappy. In addition, the name of the individual posting the message is given at the head of each message, with the date and time that the message was posted in cases where a message was posted once. My introductory messages and e-mails were posted several times over the course of the study and are therefore not dated.

A total of 22 instructors replied granting permission for their courses to be contacted. The 33 courses contacted included undergraduate courses in business, education, folklore, religious studies, psychology, library studies, sociology, and technology, as well as graduate courses in education. Most of the instructors had taught via the Web for several years; one, a biology faculty member, was responsible for developing and teaching one of the first Web-based courses (called Biology and Society) offered at our university. A few were new to this form of teaching and very interested in any insights my study could give them on ways to encourage learner involvement. Several instructors raised additional questions and concerns. Most questions were about logistics--how learners would be contacted, how my contact with the course discussions would be limited, how much time learners would be required to devote to the study, and how much pressure would be on learners to participate. Many instructors gave very favourable initial reactions to the concept, noting from their experience with teaching courses in this format that the study might answer some important questions about supporting learners.

After discussing the means of notifying learners with the Web course administrator, we decided that the easiest method was for me to utilize a direct and temporary access to each of the existing course discussion forums in order to post a welcome message to learners. The instructors were contacted for permission to do this, and I was able to post the following message inviting learners to participate in the *Student Talk* forum.

Hello!

Isolation is a problem faced by many distance education students. We have limited opportunities to talk with other students about the challenges, triumphs, and day-to-day issues we deal with as we juggle home, school, and work. Computer-based communication offers one way to overcome this isolation and let us talk to each other, student to student, outside of the boundaries of our courses.

I'm posting to ask for your participation in a study that will give you the chance to talk to other students in an open forum via the AltaVista system you are familiar with from your Web-based course. This study is part of the work required for my Master in Adult Education program from St. Francis Xavier University, under the direction of Dr. Leona English.

If you'd like more information about the *Student Talk* forum, point your browser at the following URL

http://www.ce.mun.ca/student_talk/

Hope to meet you soon in *Student Talk*!

Diana

Diana Deacon

Program Developer

Certificate and Affiliated Programs

M.Ad.Ed. candidate, St. Francis Xavier University

In the meantime, I met with the Web course administrator/designer to discuss my study and to introduce me to the AltaVista conferencing system. Because I had previous experience with list servers, newsgroups, chat rooms, and Web browsing, we were able to accomplish this in two sessions of several hours each. She suggested that we set up an introductory Web page on the conferencing system where learners could read about the study, contact me, and log into the forum. This page is discussed in the next section on the forum. The AltaVista forum administration was set up so that I would retain administrative control over the forum and could add learners' login names to the access list. Once the message was posted to each course forum, I was removed from the access list for that course.

Setting up the forum and adding learners was fairly straightforward once the page and administrative setups were complete. Learners contacted me by e-mail to indicate an interest in joining the forum. I responded to them by e-mail welcoming them to the forum and requesting their login name for the AltaVista forum system so that they could be added to the list for *Student Talk*. Their addition to the list was confirmed by a second e-mail which alerted them to the location of the main Web page, method of access, and security/confidentiality issues.

Hello, <name>!

This is to confirm that you have been added to the list for the *Student Talk* forum. Just a few reminders:

- the Web page and discussion URL is http://www.ce.mun.ca/student_talk

- you should use the same username and password that you normally use to access your course discussion forum

- this is a secure public forum; you should be aware that anything we post to the forum may be used in my study report, with my assurance that your privacy will be protected and that you will have access to the report if you wish

I'm looking forward to getting this new forum off the ground. See you there!

Diana

With the forum in place and a group of learners added to the forum list, we were ready to begin the discussion. In the next section I describe the forum in action, including a “walk” through the process of accessing the forum, and the discussions which resulted.

The Forum in Action

This section is presented in two parts. In the first, I walk through the process of participating in the forum, from the initial Web page to the forum screens. In the second, I focus on the learners, the discussion topics, and the postings themselves--the study results.

The Process

Learners used whatever Web browser they were familiar with to access the forum through the *Student Talk* Web page at http://www.ce.mun.ca/student_talk. This page introduced them to the study background and gave basic information for contacting me and for accessing the discussion forum. My main concern in designing the page was to give necessary information in a clear and concise way, and to make access to the forum as simple as a click on the page. In order to create an initial atmosphere of welcome and openness, the page also introduced me to the learners, outlined my work and its relation to the study, and summarized my goals for the discussion forum.

When one clicks on a highlighted hyperlink on the Web page, an AltaVista forum login screen appears in which the learner enters his or her login name and password. Once these are accepted by the system, the reader is connected to the *Student Talk* discussion forum page. This page gives a short description of the purpose and topics covered in the forum, and lists the folders (which contain groups of entries with a common theme, or threads) and ungrouped entries. Navigation buttons displayed on this page are used to move between levels of the discussion forum from the main discussion page to folders and individual entries, to search the forum for key words, and to access

the built-in help feature for the system. A pull-down menu is used to perform actions such as adding a new folder topic, replying to a message, administering the forum, or editing an existing message. From this page, learners can navigate through the discussion, read messages, and respond to them.

Learners use the active links on the Web page to move around in the forum. As an example, by clicking on a *Problems and Pitfalls* folder link, they move to a new screen displaying a summary of the discussion topic contained in the folder (in this case, I set and described all discussion topics, but it is possible for any learner to add topics). A list of entries responding to the question is given, with the number of replies to each entry given in brackets. Clicking on the title of an entry moves the reader to another screen displaying the body of the entry and listing the replies to it, with the author and time of response indicated, and so on.

Learners in Web-based courses may also consult with Web support staff and a handbook explaining how to access the forums, use the most common tools, and perform common tasks in the system. In my experience, learners generally report that navigation in the discussions is easy to learn and that the user interface facilitates a fluid participation in discussions.

The Learners and Discussion

This section focusses on the *Student Talk* forum in the winter (January to April), spring (May to August), and fall (September to December) semesters of 1999. I introduce the learners through their entries and e-mail to me, and present the discussions that occurred. All names are fictitious.

Winter 1999 semester (January to April). Seven individuals responded by e-mail to the invitation to *Student Talk* which was posted in their course forums early in the winter term. Of these, four actively participated in the forum by posting at least one message over the term. Although the remaining three did not actively participate, it is possible that they participated by “lurking” (reading the posts and following the discussions without posting themselves).

In their initial e-mail messages to me requesting access, two of the three individuals who did not actively participate in the forum did give some insight into their situations and their reasons for being interested in the program. Albert described himself as “age 45, 25 yrs civil servant (20 in management), married, two teenagers, don’t know if this is pertinent, may let you know where ideas are coming from, though.” He did not identify the Web course he was involved in. Amanda introduced herself with an enthusiastic message:

Hi! I just read about the *Student Talk* thing and it sounds pretty cool, I’m doing business 2000, which is a communications course, by correspondence. The worst thing I find is that you don’t get to meet other people like in class and the only person you can talk to if you have any questions is the prof.

Bryan sent a basic message asking to be added to the forum, and identified himself as a student in the Bachelor of Technology program.

The four active learners gave somewhat fuller stories of their lives and motivations. Charles had done several distance education courses before, but this semester was his first experience with a Web-based course. Beatrice’s story was a series of firsts--her first graduate course (in Educational Psychology), her first Web-based

course, her first course at this university, and her first year in the province after moving here from another part of the country. She described herself as a teacher, mother of three children aged 2, 4, and 6, and wife of a United Church minister. Candace had much in common with Beatrice, as she described: "I would like to discuss concerns as a DE student with others... I am originally from St. Catharines Ontario and I am a teacher. I am in the Masters in Ed Psy program." Candace had been teaching as a guidance specialist and elementary teacher for the past 4 years (3 of them in a remote northern town); her husband was a high school teacher. They had no children. Dorothy was a "full-time mother, part-time student, part-time work" in the business communications course, and was working towards a certificate in business administration.

As a group, the learners were fairly representative of the range of roles, situations, and goals that are characteristic of adult and distance learners today. They were enrolled in courses and programs from introductory undergraduate/certificate level to graduate study. Multiple roles seemed typical of their stories, and their participation in such a forum was only one of many activities that they were juggling over the semester. Some lived in the same community as the campus, others were located in communities at a distance from campus, but most were at a psychological distance from campus.

The AltaVista conferencing system allows discussions within a forum to be organized in folders, each dealing with a defined topic and containing any messages that relate to that topic. Learners can also add independent entries, to which others can respond. My role as moderator of the *Student Talk* forum included setting the stage for interaction, response, and discussion by suggesting topics and guiding the resulting flow

of messages. As I and many of my on-line colleagues have discovered, active involvement in conferences must be fostered with care, patience, and attention to the realities beyond the screen. Over the course of the semester, three discussion folders and two independent messages were set up and attracted a moderate response from the active learners.

The first folder I set up was the Web conference equivalent of an icebreaker exercise in a face-to-face setting--a *Welcome and Introductions* thread. In my opening message, I began by introducing myself as both a practitioner in the school and as another distance education learner. The other learners were invited to share some of their own background and to begin telling their stories, as I told mine.

Diana

Posted on Thursday, February 11, 1999 09:42 AM

Hello, everyone, and welcome to *Student Talk*. I'm delighted by the interest in the forum so far, and I'm sure it will turn out to be valuable for all of us.

I thought that we could start by introducing ourselves to get some idea of who we are, what we're doing, and what interests us. Feel free to jump on in with an intro of your own!

As I mentioned in my invitation to the forum, I work as a program developer in the School of Continuing Education. My main responsibility is for the certificate and affiliated programs - you can find out more about them on our School Web page. I also work with some of our non-credit courses in areas such as gardening, nature, and math skills programs, and will be coordinating our Elderhostel program this summer. Helping students is a big part of the work I do - everything from helping a 5-yr old in one of our kid's camps, advising certificate students on course selection, to assisting a group of seniors on a boat tour to see seabirds and humpback whales!

Like many of us here in Continuing Education, I also "walk the talk" as a part-time student myself. Since my husband started the MBA program here on a part-time basis a few years ago, we sometimes feel like the lifelong learning poster family. Keeps us going, for sure! Right now, I'm exploring ways that my interest in communicating via the new technologies can help us to create learning communities for people like me who may be separated by distance (geographical, social, time, life, all kinds of distances).

I'm looking forward to meeting you all via this forum, and sharing our experiences and learning *as* learners.

All the best!

Dorothy, Beatrice, and Candace responded with introductions that were vivid pictures of busy learners with many demands on their time. Responding to their stories was an opportunity to make connections and highlight commonalities that could begin to build a sense of community and shared experiences. It is interesting to note that the

women in the group were the ones to immediately situate themselves in terms of family, work, and study.

Dorothy

Posted on Wednesday, February 17, 1999 01:24 PM

Hello,

I am a full time mother, a part time student and I work part time. I am working on a certificate in Business.

I enjoy web based courses because I have some flexibility with scheduling and still have the support of fellow students.

Diana

Posted on Thursday, February 18, 1999 10:48 AM

Welcome to the group! It sounds like you have a busy time of it. I know that I found the option of doing courses by "distance" (even though I live about 10 minutes from campus!) very helpful, especially when my daughter was younger. It was great to be able to use those little chunks of time to make some progress, rather than having to arrange for a whole evening away from home once a week.

Beatrice

Posted on Thursday, February 18, 1999 07:57 PM

Greetings! My name is Beatrice and I'm a student in the MEd program (Ed Psyc). This is my first grad course, my first web-based course (though certainly not my first distance ed course) and my first course at <institution> (I just got my first paper back with a much-less-than-desireable mark, so I'm feeling very sad :().

I just moved to <town> from <city>, although I grew up in <city>. I'm a mom of 3 (aged 6,4&2) and a substitute teacher in District 2. My husband is the local United Church minister.

Previously, have graduated with a BA, a BCEd, a post-bac and the professional development program (BC's answer to the teaching degree). I have attended <university> in Ontario, and <university> in BC. So, that's it! I'm anxious about beginning my MEd at a new university with a distance ed class (especially in an unfamiliar province!); I don't really feel like I "belong" at <institution>, especially since I was told I can't get a student card or use the library without flying there to get my picture taken (I don't think so).

So, that's all about me that I can think would possibly be relevant. I look forward to hearing about everyone else's experience and hope that this site will be a useful place to check in often to see what everyone else is doing/feeling/accomplishing/ or other.

Beatrice's comment about not feeling like she is part of the institution struck a chord. It is interesting that she refers to very specific, practical indicators such as not being able to get a student card. From an organizational point of view, her concern might seem trivial because she could only use the card to access on-campus services, which she is not likely to use as a very distant off-campus learner. However, her feeling of not belonging is real, and the university should be able to address it. My response discussed this.

Diana

Posted on Monday, February 22, 1999 10:34 AM

Welcome to the forum - it sounds like you've had lots of experience to share! Hope the course is going better for you. The first-paper blues can be daunting, as you said, especially when you're dealing with a whole lot of new stuff at once time (new place, new course, new university).

The sense of isolation and not feeling like a "real" <institution> student seems to be a common thing for many of us. Even as a <institution> staffer in town, I felt the same way sometimes when I was doing courses by correspondence or teleconference. Although I'm sure the "powers that be" have reasons for the student card thing, it must feel like you're not quite a proper student. That sort of thing is one of the reasons I'm interested in this forum and in the wider issues involved, for my Masters. I feel that we have the tools to overcome a lot of the lack on community and connection to the university - we just need to figure out how to use them!

All the best, and keep posting!

Diana

Candace continued this theme of not feeling connected to the university as an institution.

Candace

Posted on Friday, February 19, 1999 09:06 PM

Hello,

My nam is Candace and I am currently working part time on my Masters in Ed Psy at <institution>. I have been teaching for 4 years- my last 3 years were in <remote northern town> as the Guidance Counsellor and this year as an elementary teacher in <town>. My husband is also a teacher at the local high school. I am from St Catharines Ontario and hope to move back there some day. I do not have any children, but I still find the demands of distance courses so time consuming when working full time. I also feel somewhat out of touch with the regular of things from the university. I am doing a web course now, and I too am feeling a bit down about my first assignment... but there is still hope yet. Although profs are avaiable by phone and e-mail nothing is like that personal contact you get when on campus. I look forward to meeting you in this forum

Diana

Posted on Monday, February 22, 1999 10:41 AM

Welcome to a fellow St. Kitts-er :)

We all seem to have very busy lives around us - that's one of the things that I feel can come across in this sort of forum that might not in the more conventional course-based ones. Does that seem right?

Getting off the ground with a new way of doing coursework can indeed be a challenge. From what I've seen, the Web-based courses have their up and down sides, like any other format. I have heard that collaborating for assignments and the like can be easier, but can also be more difficult.

Looking forward to hearing more from <town>!

Our second discussion topic dealt with the problems and pitfalls we encounter as distance education learners.

Diana

Posted on Monday, February 22, 1999 10:48 AM

I'd just like to toss out an invitation to all the forum members to post your own "problems and pitfalls". Here are a few of mine:

- * logistics - practical matters like late texts or changes in the course which can be dealt with face-to-face in a classroom setting but tend to slow things down in a distance setting
- * getting in touch with the instructor - most are very good with their contact times and methods, but I found that problems or questions had to be at a higher level before I'd go to the trouble of contacting an instructor in a distance course
- * isolation - just talking to other students and getting other perspectives on the coursework

What would you add? If you were advising someone else about doing courses by distance, what would you warn them about? (a situation I often find myself in!)

Charles, in his only post to the group, picked up on this message and added some advice of his own. In fact, his approach was one that I often recommend to learners who are new to the distance education format--take a course or two in areas that you are familiar with to give yourself the space to get used to the method without as many challenges from the content.

Charles

Posted on Saturday, February 27, 1999 03:21 AM

Well, I think you've covered most of the problems I've found so far. I'm currently doing my second and third distance courses, so maybe I haven't done enough to find any other problems.

The only advice I can really offer on distance courses would be not to start with a full load. The best thing is to take one or two and see what it's all about. Try to find an interesting introductory level course (mine was Sociology 2000) that won't be too taxing while learning the ropes of distance education.

So far I really like all the distance courses I've done/am doing. I think I'll keep taking one or two each semester just for the freedom of not having to always be on campus.

Candace reiterated the problem of isolation and not being able to check one's progress against that of other learners. She also brought in a practical problem--not getting materials on time--that my university's delivery unit is very familiar with.

Candace

Posted on Monday, March 1, 1999 08:25 AM

This is about my 4th distance course. The problems I have encountered was not being able to talk to other students just to see if you are on the right track as regards assignments and comprehension of the course. Also, getting books at the right time is another problem. I have been behind in lecture material because I did not have the textbook to do the readings.

As Candace noted in this additional message, small problems from an administrative perspective can snowball for the distance learner who is not able to track down individuals and make sure that administrative changes are made.

Candace

Posted on Thursday, March 11, 1999 03:02 PM

Another problem I would like to add to my list is that when I moved from my old residence to my current residence I informed the office of the registrar by phone and the department of grad studies. However, because of inept workers my mail was still sent to the wrong address. I called about this to advise them of the change and for the next couple of months they still sent my information to the old address and told me that they had no record of the change. This happened recently within the last year. It was very annoying as I was waiting for tuition receipts to do my tax forms and I had to wait an extra 4 weeks to get the needed information.

Diana

Posted on Thursday, March 18, 1999 09:16 AM

Hi, Candace

Although I obviously can't comment on the staff at the registrar's Office :), I agree that logistical problems like this are bad enough when you live and work on-campus. They're multiplied by a large factor when you're at a distance. That's one of the reasons why I like the tack they're taking with the <institution> Web pages and student access to their Banner records - not a perfect solution, but the more direct ways we have for students to contact us as an institution, the better off we are.

For the third topic, I decided to go to a more positive focus -- what works for distance education learners?

Diana

Posted on Thursday, March 18, 1999 09:28 AM

Just a quick brainstorm on what works for me:

- the flexibility of self-directed and distance courses; if I already know a topic in depth, why waste three hours of my time sitting in class?
- "chunking" the work into manageable pieces and focusing on them. Some sorts of work (doing readings and research, for example) I find I can do well in little snatches of time, but writing requires getting that good big chunk of time when I can focus almost 100% on it for awhile.
- talking to other people. Whether it's a case where workmates are doing the same course, or an on-line friend in Georgia who's just switched majors to an interdisciplinary program on Technology and Society, it's great to get chances to talk about what you're doing with someone else on the same wavelength.

So, what works for you?

Beatrice gave an interesting solution to a typical challenge for multiple-role women learners. Sometimes creating a psychological space for one's learning is the key to making progress.

Beatrice

Posted on Wednesday, March 31, 1999 04:10 PM

Something that really works for me is getting our nanny to come in (for example, now, during break) when I'm not working but have a paper due. I've spent so much of my evening time in school over the years that I'm giving myself a break and trying to get things done during the day. This way I can fully concentrate and not worry that my children are not getting the attention they need. Also, this simulates what it would be like if I were on campus - we'd need to hire childcare then, anyhow.

Diana

Posted on Monday, April 5, 1999 08:18 AM

That's a great idea, Beatrice! I've also found that it's hard sometimes to establish "study/work time" (and space) when you're at home with the family. As my daughter's gotten older, she's better able to understand that Mommy is working on her homework now, but the instinct is still to drop everything when something needs to be done, etc. I've found that some of my most productive days for things like writing papers have been when I've taken a day off and stayed at home while the other two are at work and school. :)

In addition to these discussion folders, I also made some independent entries.

They related more to building a sense of connection than to practical matters. I wanted to keep in touch with the group at a time when I sensed they were becoming busy with other things, and also to explain my own absence. The responses to the semester break message indicated another way in which distance learners are isolated from the learning community. Being part of a community implies being aware of its time lines, schedules, and seasons. Learners at a distance are not a part of the ebb and flow of the university seasons unless distance educators make a deliberate effort to give them some sense of it.

Diana

Posted on Friday, February 26, 1999 10:53 AM

I know, the semester break is probably something that doesn't immediately mean a lot to those of us who are studying "at a distance" :) However, it does mark the part-way point for the semester, so it's as good an opportunity as any to send good wishes out to everyone who's on the forum list! I hope your respective courses and lives are going well.

I'd also like to invite everyone to take a minute or two to post to the forum...a little intro, a responses to one of the existing topics, a new topic, a question for me or any of the other members. Whatever *you* would like to see here.

Oh, and give yourself a little "semester break", in whatever form that can take for you!

Beatrice linked from the schedule idea into a more practical application of it, which Candace picked up on with her own comments. As my responses to them showed, this is an area where my university has made some progress!

Beatrice

Posted on Friday, February 26, 1999 11:14 PM

I actually had no idea it was break. Maybe it would help if I had a calendar that was more recent than 95/96. Hint, hint... how do I go about getting one? I wondered why no new lecture was posted!! The last U I attended didn't have any mid-semester breaks (darn!). 2 snow days and 1 no-school day is enough of a break for me!

Diana

Posted on Monday, March 1, 1999 02:23 PM

Luckily, this one is easy :) The complete <institution> calendar is on-line at <institution Web page>. Just follow the links from Admissions into the Calendar.

Candace

Posted on Monday, March 1, 1999 08:20 AM

I am in the same boat as you Beatrice, I too was wondering why there was no lecture posted for our course, well only through *Student Talk* i now know why because of holidays! Yeah about the calendar, I don't have one either, you think after sinking all the money into the university that we do on courses, books, etc that we would get one automatically, but I guess not.

Diana

Posted on Monday, March 1, 1999 02:30 PM

I can sympathize about the calendars - even <institution> staff are limited to a copy apiece if you request them special!! Fortunately, as I mentioned in my other reply, the latest calendars are always on-line these days. Not exactly "free", but close enough. I find that the <institution> Web site is getting more and more useful for up-to-date information. You can even have a look at the Senate minutes for program changes and the like, if you're up to plowing through minutes!

And, as the following post indicates, even facilitators have their down times.

Diana

Posted on Thursday, March 18, 1999 09:21 AM

I've been a little incognito the last week or so, so my apologies to everyone! I guess it was a pretty good example of the work-school-family balancing act...our daughter had her birthday last week and a sleepover on Friday, and I was putting in a lot of writing time on a literature review that's also part of my program! Add a bout of the devil flu, and, well, we've all been there, I'm sure.

Spring 1999 semester (May to August). The lowest response to the invitation to *Student Talk* occurred in the Spring semester. It was also the semester with the most logistical problems in running the forum. Instructors were contacted 2 weeks after the beginning of the semester, but I was unable to set up the forum on our system for several weeks after that due to the hospitalization of the Web administrator. As a result, it was towards the end of June and the beginning of summer before the forum was open to learners. At the same time, my workload increased considerably over a 3-week period because I was coordinating my university's Elderhostel program and needed to devote most of my usual spare time to it.

Although the same number of courses were contacted as in the winter semester, only 4 learners responded. Eliza lived in the same province as my university and was enrolled in an undergraduate psychology course. Fran gave no details about her background in her e-mail to me. Gina was also from the same province as my university, and was taking a library studies certificate course in the use of computers in library settings. As this was one of her first courses by distance, she expressed a sense of stress and uncertainty over following course instructions correctly, approaching her studies,

and finding distance courses more difficult than face-to-face courses. Holly, a graduate of the diploma program in adult education at my university, was completing her final courses in her Bachelor of Education degree in intermediate and secondary school methods. She lived in the same province as my university. Holly introduced herself by mentioning that she recognized my name from a presentation I had made to one of her adult education courses.

I set the forum up as before with a welcome and introductions folder, as well as general posts inviting people to contribute their positive and negative experiences. However, none of the learners who had joined the forum posted in response to these. I was unable to contact any of the learners from that semester to determine why they had not posted, but I suspect that the combined effect of the summer season, demands of work and family, and course requirements was as significant for them as it was for me.

Fall 1999 semester (September to December). A total of six individuals responded to the invitation to join the forum. As in the previous semesters, they represented a limited representation of the variety of people involved in Web-based learning at the study institution. Darcy was an undergraduate learner on-campus who was completing an introductory business course on the Web. Inez lived in an adjoining province and had completed a Bachelor of Arts in Geography and Women's Studies prior to her current program in elementary education at my university. She was enrolled in two Web-based undergraduate courses in education in the fall semester. Harriet was pursuing an undergraduate degree in maritime studies from my university and was enrolled in English and business courses. She lived in central Canada and was in a career

transition to operating her own business after 15 years in the workforce. Although this was her third time back to post-secondary study, it was her first experience with Web-based courses. Edward was a graduate of a naval architecture technology program who was studying towards a bachelor's degree in technology from my university. He was currently living in the same community as the university campus but had lived in the southern United States for a year and a half. While there, he had completed five of the seven distance courses he had taken. He was also the most experienced learner in Web-based courses, having completed four to date. The final two respondents never posted to the forum after they were added to the learners' list. Juliana was from the same province as my university and was taking two correspondence courses in business. She indicated that she had taken many courses by distance over the past 5 years. Katrina gave only a cursory response to the invitation, asking to be added and giving her login name but no further information.

As with previous forums, I began by setting up a welcome and introductions folder on the forum. I also introduced myself with the same message used in the previous sessions.

Darcy posted a brief introductory note several days later, to which I responded with a question inviting more information. Unfortunately, Darcy did not follow up to this post and this was his only contribution to the forum.

Darcy

Tuesday, November 2, 1999 04:03 PM

Hi,

My name is Darcy and I look forward to using this forum. I am currently doing business1000 via the web. I guess I am the first one to reply. Look forward to talking soon.

Diana

Tuesday, November 2, 1999 04:34 PM

Thanks for the intro, Darcy. You said that you were doing Business 1000 - is this your first semester at <institution>?

Inez's introductory note reveals one aspect unique to the fall group -- several group members were located outside the province of the study institution.

Inez

Monday, November 22, 1999 02:45 PM

Just a quick note to let you know who I am...My name is <name> and I am an elementary education student at <institution>. I have completed a bachelor of arts in Geography & Women's Studies. I am currently in <adjacent province> and am enrolled in two distance courses from <institution>....Ed/3380 & Ed/3520. I look forward to chatting with you soon! :)

Diana

Tuesday, November 23, 1999 09:10 AM

Thanks for the introduction. It's great to have someone from <adjacent province> in the group - you're the first out-of-province learner to participate! I'm looking forward to hearing your comments, especially about the differences you're finding between on-campus and distance courses.

As Harriet's message indicates, the forum learners in the fall had particularly diverse backgrounds, work experience, and educational histories.

Harriet

Tuesday, November 23, 1999 11:13 AM

Hi, my name is <name> and I am currently studying towards a bachelor of Maritime Studies at <institution>. I currently live in <town>, just west of <city>. I have spent many years living in <adjacent province> and also in <city> I have been in the work force for about 15 years and I am currently making a career switch where I will be running my own business.

This is my third time "back at school" and my first time studying by distance learning via the world wide web. I am currently studying business 1000 and English 1080 and plan to take more business studies to finish off my degree. I hope to be able to provide some input as to what I think about this form of learning.

In responding to Harriet's introduction, I was able to make some connections between her experiences and my own.

Diana

Wednesday, November 24, 1999 09:19 PM

Wow - this is interesting! Almost everyone this time around seems to be from outside <province> :-) Should make for some good discussion about how you "connect" with <institution>.

It also sounds like you're in a real transition time, Harriet. A few years ago, I spent about a year working with the Women's Enterprise Bureau here in <province>. I gained a great deal of respect for people who are willing to take the step to running their own businesses...lots of very enthusiastic and fascinating individuals!

I'm looking forward to your comments on the Web-based courses.

Edward was the final learner to introduce himself to the group. As his post indicated, he was able to bring a variety of experiences into the forum. Although he was currently living in the same city as the study campus, he had taken distance courses in correspondence, teleconference, and Web-based formats while living in the United States.

Edward

Posted on Tuesday, November 23, 1999 04:28 PM

hello

My name is <name>. I am a graduate of Naval Arch Technology at <institution>, currently studying towards my Bachelor of Technology.

Although I now live in <study institution city>, Of the seven courses I have completed, five of them were taken while I was living in <city> for a year and a half.

All of the courses I am taking are through distance ed. I have completed two web courses, and I am taking two more this semester. I have completed one telecon [ference] course. There have been problems along the way. I guess we'll get int it later.

Good to be here.

On the same day as the introductory posting, I set up a folder focussed on the problems and pitfalls encountered by the learners. As several of them had already indicated that they were interested in talking about problems they had encountered, I considered it important to respond immediately to this interest. I started the folder with a message similar to the "problems and pitfalls" post I made in previous semesters, describing some of my own difficulties with logistics, contacting instructors, and isolation. I asked learners what their experiences were and how they would advise other people who might be considering distance courses.

Harriet responded with a lengthy and well-considered perspective on doing courses for the first time by distance on the World Wide Web.

Harriet

Tuesday, November 23, 1999 11:24 AM

This is my first time studying by distance education and also a first for me to study via the internet. I enjoy using the computer and internet to do my studies, but I do find it very different from the more traditional class room style. One is more isolated. I enjoy interacting with other students. I think that doing group project work in small teams (not by distance) is also an important method of learning.

*Web site exercises provide a good learning opportunity. I miss the classroom interaction with students. I don't get to really meet them except by e-mail messages and this is rather one dimensional. I do feel a bit isolated at the end of my computer. There is a certain amount of value added by having interaction with real people in your class. I think you can learn more about a person by meeting them in person, even in just a few minutes.

Having discussion forums using AltaVista where students post responses to instructor questions is beneficial. It helps to fill the void. There is also the possibility of responding to other students responses. I find trying to read through all the responses to "discussion topic questions" is time consuming and I don't have seem to have enough time to do the course work and read all the responses, and formulate replies. I also feel somewhat reluctant to reply to what someone wrote when I haven't met them before.

I feel that a real class situation or group setting communication is more spontaneous.
Any comments from the group?

In my response, I related Harriet's ideas to the rationale for my study and reflected on the establishment of a sense of personal contact in on-line environments.

Diana

Wednesday, November 24, 1999 09:30 PM

It's interesting that you mentioned the person to person contact and isolation factors - my interest in testing out this sort of forum is very much related to that. Most of what we (as institutions and educators) are doing so far with on-line learning is mainly concerned with content and delivery of courses. Sort of "translating" existing courses to the new media. What we haven't done as much of (yet) is to create on-line environments that help people get that sense of knowing each other and connecting through the computer.

I agree that there's an element of trust, maybe, that happens when we meet people face-to-face. In some on-line settings, people seem to be able to get that same sense of connecting with others. In fact, for some people the on-line setting removes barriers to getting to know the person - such as the assumptions we unconsciously or consciously make based on appearance.

What do other people in the forum think? Is the lack of personal contact a barrier to your learning at times? Can we use this medium to overcome this?

Edward reported on his experiences with Web courses, focussing on practical problems of access and organization. He associated positive outcomes with Web-based courses that were well-organized and instructors who were actively involved in structuring the course and responding to learners.

Edward

Tuesday, November 23, 1999 04:46 PM

I am currently doing my third and fourth web courses. I have mixed feeling towards them. One course I am currently doing is very poorly organized, and we are left to wing it on our own. Students are expected to answer other students questions, and although this is a good way to facilitate discussion, If I was in a classroom, I would want the instructor to answer my question, not another student.

In contrast, the other web course is well organized, it is broken down into an announcement folder, class discussion folder, and a general social discussion folder. The instructor is very involved, and does answer students questions, or comments on other students answers.

Another big problem I had was with a teleconference course I was supposed to do. The telecon session was at 6:00pm <location of study institution> time. Problem with that is it was 3:30pm in <city>, the middle of my work day. Distance ed suggested I try to resolve it with my prof, but he turned out to be one of the rudest uncooperative people I have had to deal with yet. I was basically accused of trying to get out of the mandatory session. That was really insulting. I am 32 years old, and I don't expect to be treated like a kid.

The other main problem is simply trying to get the courses you need, by distance when you are ready to do them. There needs to be more cooperation from the facilities.

Ironically enough, the two toughest courses so far, have been the best run from a distance stand point, those being Engineering Economics, and Stats.

Again, I related Edward' concerns to the university's responsibility to understand the needs of its adult learners.

Diana

Wednesday, November 24, 1999 09:38 PM

Good points, Edward. Looks like courses delivered over the Web are subject to the same sorts of variations as more traditionally-delivered ones. The people involved - especially the instructors - are still key to the quality of the experience for the learners.

It can be especially frustrating to have the experience of being treated "like a child", as you say. We can still do a lot to orient instructors to the needs and characteristics of non-traditional learners!

Anyone else have some responses to the points Edward has raised? What makes a course work or not work for you?

No further discussion resulted from this series of posts on problems and pitfalls. I posted a message inviting ideas from the group on what worked for them, as in previous semesters. None of the learners responded to this posting or to the following end-of-term message I posted a week later.

Diana

Posted on Wednesday, December 1, 1999 08:04 AM

I know that everyone must be feeling the end-of-term crunch right now. It can be pretty hectic - especially in the fall term, when it comes at the same time as so many pre-holiday demands in our home and work lives.

So, just a few good wishes from me, and an invite to stay in touch here if you need to vent, need some boosts, and after the term is over for a little "decompression".

To summarize, I was able to engender several limited discussions in the forums on areas of interest to distance learners. Participation rates were low for all sessions, with the most active use of the conference occurring in the winter semester. The learners used these messages as springboards to introduce some of the realities of their experiences with the system. A higher proportion of women than men in the study continued to contribute to the forum after their initial post. Although the time and scope were limited by practical constraints, the discussion was pertinent and proceeded with no technical problems. The following section describes the evaluation of the study from the point of view of the learners, instructors, and continuing education personnel.

Evaluation

The evaluation of the *Student Talk* study focuses in three main areas. The first level of evaluation is concerned with the outcomes of the study from the learners' point of view, the second level reports feedback from colleagues and instructors, and the third

level evaluates the study from my perspective as the researcher and facilitator, and in reference to the stated goals and objectives.

Learner Evaluation

Evaluating the effectiveness of the forum for the learners was, in part, an ongoing process. As the forum proceeded, their feedback and suggestions for topics were implemented in the discussion. A small group such as this does not lend itself to overly formal, quantitative evaluation techniques. However, I did attempt to gather some survey feedback at the end of the study in order to determine reasons for participation/non-participation and perceived value of the forum experience.

I contacted all 17 individuals who had expressed an interest in the forum, whether or not they actively participated. I used e-mail after the last day of courses in each term. Respondents were asked if they accessed the forum after receiving the confirmation notice, if they posted to the forum or lurked, and their reasons for participating or not participating. I also encouraged them to add comments about their experience with the forum and to make suggestions for improvement.

The response rate to this e-mail survey was low: only two of the learners involved in the study responded. As a result of a chance meeting with Darcy on-campus, I was able to add his feedback to theirs. Several learners could not be reached because their e-mail addresses were no longer active.

Beatrice, from the winter semester group, responded to the e-mail, noting that she had participated actively in the forum. Her comments on the experience indicated that she felt it was a positive one for her and that "it was a great idea." She went on to

explain that, "I liked especially how you made an effort to participate, which is more than we get in our course Web sites some of the time." In a final note, she suggested that the only area she can see for improvement is more activity and participation, which could be encouraged by promoting the forum and devoting more time to it.

Harriet, from the fall semester group, also replied to the survey. She noted, "I read a few posted items, but found that there was not much there early on and then was too busy with end of semester work and exams." Time constraints were a barrier for her, as she explained: "I found that I did not have enough time to get as involved as I might have liked. I had a lot of forums to respond to with my course work."

I met Darcy, also from the fall group, by chance in the university library and we discussed his impressions. He was very interested in the forum idea, and had joined the group with the intention of participating more actively. However, he found that the work involved in his other courses and the amount of on-line time required for his Web-based course left him without enough time to follow the forum and to post to it. These other activities were of much higher priority for him and were more directly related to his educational goals. He believed that opportunities to share ideas and information with other learners were valuable for learners in Web-based courses, but might be more valuable to him if they focussed on certain subject or program areas (in his case, business).

An informal evaluation of the forum can also be derived from a qualitative assessment of the messages themselves. All the learners showed an early willingness to share their stories, with details of their home lives, and reasons for pursuing distance

education courses in their introductions. The most active learners were graduate students in education, who are also experienced teachers or experienced distance learners. Thus, their ability to get into the process relatively quickly is perhaps not surprising. The messages discuss a mixture of specific practical questions (such as the calendar discussion) and more wide-ranging topics such as how to approach distance study as a new learner. These two levels interacted throughout the semester, depending on the immediate concerns of the learners and the prompting of the moderator. Most of the direction of communication was between the moderator and individuals, and it was only toward the end of the term that people began to refer to each other's comments. Given the limited time frame within a single 12-week semester when all learners were actively involved in study, work, and family activities, it seems reasonable to conclude that greater interactivity and community could evolve under less limiting time constraints.

In general, the limited results at the time of writing this thesis indicate that the forum did have a positive effect for the active learners, that this effect could be enhanced by continuing the forum, and that increased attention to the process might lead to more active community-building within the group.

Instructor and Colleague Evaluation

Feedback from instructors and colleagues in the School of Continuing Education who were involved in my study also occurred through e-mail and personal communication as my study proceeded. Most of the people who assisted me with the study commented that it was an interesting approach to providing learner support and that it could help alleviate the isolation experienced by learners in Web-based courses.

Colleagues in the School of Continuing Education reacted positively and offered support readily when approached. Based on their experiences with distance education students in general, the consensus was that a general learner support forum like *Student Talk* could enhance our service to learners.

Several instructors noted that they had also encountered difficulty in encouraging participation in course conferences. This was especially true in cases where participation was not directly related to course evaluation or grades. Instructors also reported a variety of logistical challenges in teaching through the World Wide Web, including the time limitations of the semester system, the impact of technical problems, and the difficulty in knowing how learners were responding to their instruction without direct face-to-face contact. Most of the instructors and colleagues I worked with were also new to this form of instructional delivery. They were therefore eager to learn from each other, from their students, and from my study.

Facilitator/Researcher Evaluation

I kept notes throughout my study and reflected on how well the study was meeting the goals and objectives which I set out for it in the planning stage. My stated research questions were: How can continuing education administrators and learner support agents overcome student isolation? Is there potential within computer-mediated forms of on-line education to address this problem? How can an understanding of the principles of adult learning, the nature of distance learners, and the characteristics of computer-mediated on-line education inform and shape the design and delivery of on-line support and community? Within the limitations and constraints of my study, I

believed that I made significant progress toward answering these questions. More importantly, my study has put an avenue in place for me to continue to learn from other learners in *Student Talk*. A general Web-based forum for learners in our programs is a workable concept, and one that can contribute to our university's ability to support its learners.

The planning and implementation of the study also contributed to meeting more specific knowledge and skills objectives. In order to plan the *Student Talk* forum I had to connect to a number of resources, including knowledgeable individuals, on-line references, conferences and readings in the area of computer-mediated communication, learner services, and learning theory and design. This process enabled me to consolidate a theory base that could support the development of the study in action. These connections continue to inform my work within continuing education.

Analyzing, assessing, and prioritizing a variety of influences was an important part of planning the forum, choosing topics, and responding to messages. Throughout the study design and implementation, I became increasingly aware of the need to balance the available technology, Web course procedures and processes, needs of the learners, instructor concerns, and administrative constraints in order to get the forum on-line and running smoothly. At the time of writing, the *Student Talk* forum has not been in operation for a semester because of the time needed to balance my work and thesis-writing. However, it is feasible that I will continue the forum in the fall semester of the 2000-2001 academic year with the approval of the School of Continuing Education.

In chapter 4, I analyze how the program design and implementation I describe in this chapter worked in the practical context. My findings are discussed in relation to the relevant literature in the fields of qualitative research, adult learning, distance learning, and computer-mediated education. I return to the questions outlined in chapter 1 and close with a set of recommendations to guide my and other continuing education practitioners' future efforts to support their on-line learners.

CHAPTER 4

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, I give an overview of my study in which I return to my research questions. Then I re-visit the literature on qualitative research, adult learning, distance learners, and computer-mediated education and discuss the practical results I obtained in relation to this literature. Within these discussion topics, I highlight conclusions and insights I gained through my study.

Overview of Study Outcomes

The *Student Talk* study began with a set of questions. Namely, how can administrators and learner support agents overcome the isolation experienced by students at a distance? Is there potential within the new computer-mediated forms of on-line education to address this problem in an immediate and powerful fashion? How can an understanding of the principles of adult learning, the nature of distance learners, and the characteristics of computer-mediated on-line education inform and shape the design and delivery of on-line support and community? Computer conferencing through the AltaVista system (already in place for Web-based courses at my university) proved to be a workable environment for examining one response to these questions. A forum that was open to all learners and free of course constraints attracted interest and generated a small but encouraging community of learners.

The implementation of the *Student Talk* forum during the winter, spring, and fall semesters of 1999 proceeded successfully, largely due to the strong existing team of Web support and instructional design specialists who were able to help me translate my

concept into working form. Instructors and administrators in the School of Continuing Education were willing to support the study and offered valuable insights into the nature of their students. Despite the limitations imposed on them by busy lives and work and family responsibilities, a group of learners was interested in participating and sharing their stories in the forum. Although a limited degree of student community-building was possible given the constraints of time and other priorities, the forum shows promise for helping distance learners to feel more connected to the institution in a community of learners.

Discussion and Conclusions

The purpose of my study was to examine the potential of a Web-conferencing tool to create an on-line community of learners in a university-level distance education program. I present my conclusions in relation to three areas of inquiry: program design, program implementation as a process of qualitative research and practice, and evaluation of the tool for practitioners.

Research Method and Program Design

As I designed the study and the *Student Talk* forum, I was able to approach the problem of meeting the needs of on-line learners at my university from several perspectives. Viewing program design through the lenses of qualitative research, computer-based education, adult learning theory, and distance learners gave me a sense of common themes and strategies that have proven to work in other contexts. The ideas present in the intersection of these themes guided my choice of methods, technologies, and facilitation style.

Qualitative research. The literature of qualitative research in adult education influenced how I chose to define my role within the planned intervention. Consistent with Guba and Lincoln (1983) and Denzin and Lincoln (1998), I was present in the study as inquirer and as the vehicle for my inquiry. I was involved as a researcher and as a co-learner with the learners who joined the forum (as described by Belenky et al., 1986; Boud & Griffin, 1987; Griffith, 1983, 1987). From my first messages to the group, I tried to make this multiple role clear by introducing myself as a learner, a continuing education professional, and a researcher.

Denzin and Lincoln (1998) also speak to design issues in qualitative research. Their emphasis on the value of emergent design which responds to the changing nature and needs of the learners was a useful guiding principle for my study. The computer conferencing forum through AltaVista allowed me to change topics, add new discussions, and respond to the interests of the learners. It also captured our discussions in a form that could be re-read and reflected on to suggest new avenues and strategies. For example, the lack of response later in the winter semester due to learners' busy academic schedules led me to post most of my initial messages as soon as the forum was active in the following sessions. Being able to use an emergent research design allowed me to adapt my study to the reality of learners' lives, and I conclude that qualitative research principles are appropriate for the design of on-line learner support and for the study of such support interventions.

Computer-based education. The School of Continuing Education at my university is experiencing phenomenal growth in the delivery of courses on the World

Wide Web and is entirely in keeping with the trend reported by Imel (1998). Several authors (Berge & Collins, 1993; Cahoon, 1998; Chacon, 1992; Garrison, 1989; Jones et al., 1992; Mason & Kaye, 1989) have traced the impact of computer-mediated delivery in distance education. Our experience mirrors their consensus that new technologies open new possibilities for designing good education, but also create new problems. For example, my program design used one application of the technology for computer conferencing as a means of addressing problems of access, isolation, and lack of connection that can be heightened by the delivery of courses on-line. I conclude that it is feasible for universities using interactive teaching media to design interventions for on-line learners using the technology, resources, and systems already in place for on-campus and distance course design and delivery.

In planning the forum and working with Web course developers, I also gained an appreciation for the importance of building in five elements common to good computer-based education. The first of these elements is the use of computer-mediated tools to shift the locus of educational control from the instructor to the learner (DeBruijn, 1993; Helsel, 1992). I planned the conference as an open forum where every learner was welcome to contribute ideas for discussion. In practice, much of the control of the forum still rested with me and with my university because the conference was hosted on our system and subject to the system's limitations and constraints. Learners could only be added to the forum through me, for example. However, I was able to overcome this, to some extent, through the invitation and welcome messages I conveyed to learners. Hollis (1991) speaks of the shared creation of knowledge that is possible when designs for

computer-assisted learning are learner-centred. Our discussion in the winter semester session on strategies for combining study with work and family roles indicates that keeping the learners at the forefront in my planning stage helped them to see themselves as experts in their own learning.

As Berge and Collins (1996) assert, the role of the moderator is a second key element in effective design for computer-based learning. Successful moderation of on-line forums must be set up in the design phase, with attention to the facilitator's role in building interactivity (Blackburn, 1998), modeling behavior and standards of conduct (McVay, 1998), and creating a conducive environment for learning (Pincas, 1998). As I planned the forum, I found that decisions about how to proceed and how much direction I should provide were informed by the work of practicing facilitators of on-line learning. I was able to apply the threaded discussion format of AltaVista to set up several open-ended topics for discussion, giving some structure to the conference while reinforcing my less directive facilitation style and preference.

A third element of successful design is the application of learning and communication theory to planning on-line adult education (Boshier, 1988; Burge, 1994; Haughey & Anderson, 1998). In order to ensure that the conferencing system was an effective medium of communication and mutual learning for the learners, I paid particular attention to how I crafted my messages to Web-based courses, instructors, and to the forum. Haughey and Anderson's characteristics of networked learning proved to be applicable to my concept and to the forum design. For example, the structure of the forum encouraged communication and interaction by organizing posts into folders and

threads, so that learners could choose topics of interest, read the complete thread of messages involved, and respond with their comments. Learners in the study were familiar with the AltaVista system because they used it in their Web-based courses. Because none of the learners reported technical problems with using the system, I conclude that their learning curve for the technology was small and they were able to take advantage of the immediacy of computer conference discussions. By choosing to leave all messages intact in the forum over each semester, I was able to capitalize on the permanence of networked communications and to read and reflect back on our dialogues. Haughey and Anderson refer to the diffuse nature of networked learning in which learners can be linked to resources in many locations. Within the forum, we could refer to other Web-based resources and link to them as quickly as needed; a good example is the question about the university calendar, where I referred the learners immediately to the Web site for that information. Above all, my interest in using this technology to reach my learner audience was engendered by the excitement of the new media and my experiences in connecting to people around the world through the Internet. I conclude from my work with learners, resource people in the School, and faculty in the Web courses that others share this sense of excitement and are motivated to participate in activities that use the Internet and World Wide Web.

The fourth element is concerned with using the tools of computer communication to increase and enhance the sense of a virtual community of learners. A number of case studies (Garton, Haythornwaite, & Wellman, 1997; Montgomery & Little-McGill, 1997; the NODE, 1998a, 1998b) indicate that e-mail, chat rooms,

conferencing, and similar computer-based systems can build connections that cross the usual boundaries of status, disciplines, and access within educational institutions. This was a primary goal of the study; it was important that the forum be open and accessible to learners in undergraduate and graduate courses in a variety of disciplines. The only criterion I used for including individuals in the forum list was that they be learners in our university's Web courses.

Turkle (1995) speaks convincingly of the element of play, the final element which I found to be essential in my computer-based design. To Turkle, cyberspace is a place to play with our concepts of ourselves and of others. As I planned the *Student Talk* forum, worked with Web designers and instructors, and thought about how I would involve learners, I often felt a sense of playful experimentation and fun. The same sense of enjoyment comes across in many of the messages the group exchanged over the course of the study. For example, Beatrice responded to my message about mid-term break with a joking comment that snow days and school holidays were enough of a break for her. I conclude from my experience with the forum that practitioners can plan Web-based interventions that give learners a chance to play with their learning. Opportunities to reflect on learning are important; it is also important to allow opportunities to brainstorm, joke, experiment with new ideas, and otherwise play with learning.

Adult learning theory. Adult education researchers have connected theoretical perspectives on adult learning to program design for self-direction (Kidd, 1977), facilitating learning (Cross, 1981), and community development (Brookfield, 1984).

These general goals of adult learning are in keeping with the way I planned the forum. More specific models for program planning (Brundage & MacKeracher, 1980; MacKeracher, 1996; Waldron & Moore, 1991), co-learning in adult education research (Boud & Griffin, 1987), and applying adult education principles in universities (Brookfield, 1990; Percival, 1993) also informed my thinking about the design of the study. As I discuss in chapter 3, I found that the learning and facilitating principles outlined by MacKeracher were especially useful guideposts for structuring the intervention because of their clear connection to theory and their practicality for facilitators. For example, I applied principles for reducing stress levels in adult learning environments, which MacKeracher derived from the study of learner characteristics, to the messages I posted to welcome learners to the forum.

Two areas of theoretical concern--self-direction and learner support--were especially valuable for my program design. Based on my experiences as an adult learner and with other adult learners in our university, I agree with the wider conceptualization of self-directedness described by Campbell (1995), Garrison (1992), and Griffith (1983). For example, as Dorothy noted in one of her messages, many of the learners valued the flexible scheduling possible in Web-based courses but also appreciated the opportunity that this delivery method provided for gaining support from other learners. I am in agreement with Griffith's (1983) conclusion that the characteristics that enhance self-directed learning, such as independence and personal control, have to be balanced by activities that build interdependence and connections within the community. As Garrison notes, self-direction can allow learners to share control and take responsibility

for their own learning. Computer conferencing proved to be a workable means of applying these principles. The conferencing tool allowed any learner to make contributions, add new topics, and respond as and when they wanted to other's comments. Although I was in control to a certain extent as forum administrator, I could step back and encourage others in the group to take a lead role. I conclude that self-direction can be planned into computer-assisted interventions for adult learners.

Learner support is a cornerstone for programs designed for transformative learning (Cranton, 1994) and for multiple-role learners (Edwards, 1993; Home, 1993; MacKeracher, Wall, & Doucet, 1993). Again, my experience is that many learners in distance programs at my university are going through transitions in their lives and trying to balance numerous roles; the learners in my study are parents, workers, and learners who are taking Web-based courses to effect changes in their lives. I was able to use several of the support strategies presented by MacKeracher (1996) in my design for the forum. My initial contacts with learners by e-mail, on the forum Web page, and in my opening posts set the stage for an environment with flexibility, low stress, mutual trust, and validation of individual experiences. I was able to include attention to the emotional, spiritual, cognitive, social, and physical aspects of learning by openly sharing my own story and encouraging others to share theirs. In addition, the forum was conducive to meeting the variety of learning styles (Kolb, 1984) that we brought to it. As an example, Edward's frustration with Web courses in which "students are expected to answer other students' questions" and his preference for the instructor to answer questions, contrasts with Harriet's appreciation of Web-based group work and learner contributions to course

forums. I conclude that it is feasible to provide learner support which is responsive to the characteristics and needs of adult learners in a Web-based learning environment.

Distance learners. My university's distance education program exemplifies the media-driven paradigm shift highlighted by Hall (1996) and Sweet (1989). Web-based courses in particular are more interactive and responsive to our learners, rather than simply vehicles for the delivery of course content. Even the definition of distance is changing. As Edwards (1994) and Haughey (1995) describe, geographical distances are not the only ones separating our learners from the campus. They take courses by Web-based and other distance modes for convenience of time, access, and learning style preferences as well--as documented in other settings (Burge, 1990; Collins & Haughey, 1986; Coulter, 1989; May, 1993, 1994). I was aware of these diverse types of distance as I planned the forum and was able to accommodate learners' needs for flexibility, time, choice, personal control, and freedom from institutionally-imposed expectations. For example, I chose an asynchronous form of conferencing for the *Student Talk* forum so that learners could read and respond to discussions at times that suited their schedules.

Distance learners benefit from programs and services that help them integrate their individual lives, their independent learning, and their academic requirements (Garland, 1994; Hotchkis, 1992). I envisaged *Student Talk* as a place where the academic and public lives of the learners could meet and be validated, where learners were free to discuss whatever aspects of their lives affected their studies, and how their studies impacted on their lives. In this, I chose to lead by example, presenting myself as a multiple-role learner with work, family, and study in my life. The topics I put forward

to draw out initial discussions included questions about what works and does not work as learners tried to balance their many responsibilities and roles. I was successful in integrating these elements into the design of the forum. Beatrice, for example, reported that bringing her nanny in to care for her children while she worked on papers was a good strategy for her.

Support for distance learners remains a lower priority than course design and delivery at my university, as Potter (1994) asserts for the practice of distance education in general. The willingness of colleagues within the School of Continuing Education to assist me with program design and implementation indicates their interest in developing stronger learner support initiatives. As I reflect on the design process, I realize that support networks within institutions are as important as networks between institutions and learners in developing support activities for the learners.

My thinking about the study was also influenced by other work on the needs of distance learners and on models for planning learner support. Learners in Web-based courses have similar needs to other distance learners, and I kept these in mind as I set up the forum. They looked for feedback, support, and prompt responses, consistent with Stoffel (1987); the computer conferencing tool enhanced my ability to respond quickly to learners' messages although some delay was inevitable as in any mediated communication. I had to be sensitive to the transitions that many learners experience, as Potter (1994) suggests; Harriet's transition from the workforce to her third return to university-level studies is typical of the multiple-role learners that Potter describes. The open nature of the forum, where clues to status are less obvious, meant that I could

encourage a sense of equity among the group members. As Hipp (1997) indicates, the distance learners in the study benefited from interactions that encourage this sense of equity between individuals from diverse backgrounds; for example, the Winter 1999 group included Charles, who had done several distance courses, Beatrice and Candace, who were masters' students, and Dorothy, who was a certificate student. Brindley's (1997) model for planning distance learner support helped me to clarify the goals of the forum and select activities that enhanced independence, empowerment, personalization, democratization, and engagement. I used several of Brindley's strategies for meeting these goals. As an example, in the dialogue with Beatrice and Candace about mid-term break and their lack of access to the university calendar, I was able to recognize the learners' experiences with the institution, act on them, and thereby reduce one administrative barrier they had encountered.

Reflecting on the project, I conclude that program design for the study successfully incorporated elements from qualitative research and practice, computer-mediated learning, adult learning theory, and the nature of distance learners. The process was enhanced by my work with colleagues within the School of Continuing Education and demonstrates that we can plan interventions for our distance learners that use existing systems and good adult education principles to meet the needs of our learners. In the next section, I analyze the implementation of the *Student Talk* forum as a process of qualitative research and practice in adult education.

Program Implementation: A Process of Qualitative Research and Practice

Throughout the planning and implementation of the study, I found that principles of qualitative research and practice exemplified in the work of Belenky et al. (1986), Boud and Griffin (1987), Denzin and Lincoln (1998), Griffith (1983, 1987), and Guba and Lincoln (1983) gave important guidelines. At each stage, I needed to think carefully about the purpose of elements such as the introductory Web page, the forum descriptions, topic folders, and message content. Several areas of analysis became evident as the study proceeded: qualitative methods and ideological issues, the nature of the learners, the role that various kinds of distance play for them, the themes and concerns raised by the stories they tell, and my role as facilitator and researcher.

Qualitative research methods and ideological issues. A number of methodological issues were apparent throughout the study. Similar to the work by the Personal Narratives Group (1989), and by Eisner and Peshkin (1990), I had to remain aware of my relationship with my co-learners as I engaged with their stories in the forum. Qualitative inquiry is intrinsically interpersonal. The voices and perspectives of the learners involved in the forum were the most important outcome, in keeping with the conclusions of Belenky et al. (1986), Boud and Griffin (1987), and Griffith (1983, 1987). Although it was sometimes difficult to shift the balance of control in the discussion away from me as the contact with Continuing Education, I was able to present myself early in the forum sessions as a co-learner, and I reinforced this throughout the discussions. As Harriet's and Edward's contributions in the fall semester

show, the learners felt that they had important things to say and were not hesitant about sharing their viewpoints.

My focus on the stories of learners worked well in the forum context. As Barrick (1988) and Block (1995) indicate, and as the feedback I received from Beatrice, Harriet, and Darcy confirmed, telling their stories enhanced the learning experience of learners to some degree even when practical concerns limited their ability to contribute. I found myself following Randall's (1995) suggestion that adult educators can help learners to understand themselves by helping them to tell and interpret their stories; I was able to help the learners present and re-present their stories, building on what they posted and relating it to my own story and to their practical concerns as learners. As Brookes (1992) did by beginning with an autobiographical account of her learning, I discovered that my own story became part of the inquiry as I shared my work, home, and study with the group. However, the degree of mutual story-building that I had hoped for did not arise from the study sessions. Although I did not deliberately distance myself from the learners, as Barone (1992) did, it is possible that there is a certain inevitable distance between storyteller and subject. Razack (1993) alerted me to the need to understand the context in which stories arise and the ways in which the real lives and priorities of the learners did not always fit well with my goals for the forum. For example, Harriet noted that her lack of involvement stemmed partially from the fact that "there was not much there early on" in the fall semester--my decision to be less directive and wait for responses did not work for her.

The ideological critiques of Belenky et al. (1986) by Code (1991), Brookes (1992), and Lather (1992) helped me to think about the complexity and contingency of inquiry. As they do, I focused on the need to represent a diversity of voices in my study and needed to challenge my own assumptions about the learners in our Web-based courses. Beatrice, Candace, Dorothy, and Harriet, for example, were multiple-role women at a distance from campus with varying experience as distance learners. Darcy, in contrast, was an on-campus undergraduate student who took Web-based courses for convenience of scheduling. Edward and Harriet brought considerable experience with distance study to the group.

I conclude that a qualitative approach to the implementation and study of support for distance learners worked well in practice. The methodological and ideological guides provided by the literature kept me aware of my role as a co-learner with the group, helped me to work with the learners' stories, and alerted me to the diversity within the study groups.

The nature of the learners. As seen in chapter 3, the learners were a varied group of individuals. The *Student Talk* learners displayed independence and self-direction. For example, Edward completed five of his courses at a considerable distance and in a different country from campus. His story about problems with scheduling teleconferences indicates that he was proactive in dealing with the instructor as well as keenly aware of being treated in a way that did not fit with his self-concept as an adult learner. However, the learners did seek and need connection with other learners, as discussed by several writers on self-direction and interdependence (Campbell, 1995;

Garrison, 1992; Griffith, 1983). How do distance educators encourage a healthy balance of independence and interdependence in our approaches to program planning and support? Do we, as administrators struggling with scarce resources, count too much on the assumption that part-time and distance learners prefer independence and simply require well-crafted delivery of content? The study results indicate that a balanced approach is possible and that as Harriet notes, "It [contact with other learners] helps to fill the void."

The concept of distance is also an intriguing one. Traditionally, the concept of distance has been defined in terms of geography. From the stories of *Student Talk* learners, I gained a sense of distances that are more complex and include elements of time, place, and context as well as geography (consistent with Edwards, 1994; Haughey, 1995). My own experiences as a part-time student who lives less than five miles from campus paralleled those of the people living across the island and outside the province. Even from the limited scope of this study, I conclude that the stories of distance learners do raise valuable questions about adult education theory and its application in my professional practice.

Themes and concerns raised by the stories of on-line learners. Much has been written about multiple-role on-line learners and how difficult it can be to get them involved in initiatives beyond their course commitments (Westrom & Pankrantz, 1997; Wong, 1998). The low rate of participation in the study forum and evaluation bears this out. However, a small number of on-line learners at my university were willing to add to their busy lives by participating in a forum that was flexible, accessible, and supportive.

In common with learners in studies by Spencer (1993) and Spennemann (1996), the learners in my study often focused on practical logistical concerns such as computer access, using the Internet for the first time, and navigating the administrative maze of the university. Candace's account of her problems with change of address and its negative impact on her studies highlights the way in which seemingly trivial matters can snowball, especially when learners are not on campus to track down key staff members. Through the forum, I was able to offer some more direct assistance with these logistical concerns.

Isolation and connection is a second element in the posts from *Student Talk*. Beatrice notes that she does not feel like she belongs at the university, Candace comments that she feels "somewhat out of touch with the regular" flow of university life, and Harriet feels "a bit isolated at the end of my computer." Feedback from the groups indicates that the forum did help to overcome this sense of isolation to some extent. Beatrice, in particular, appreciated the effort I made to participate and suggested that more activity and participation might enhance the forum's effectiveness at connecting learners. *Student Talk* was not inherently able to overcome barriers between learners, the university, and each other; this is consistent with Eastmond's (1995) caution that computer conferencing can be a medium for overcoming barriers but that its effectiveness is determined by the interaction of design, facilitation style, and learner characteristics with the medium. However, the blend of personalities and contributions from the learners, my facilitation style, and the design elements I used combined to ease

at least some of the isolation felt by learners and to connect learners from several provinces and many life situations.

Student Talk learners also focused on the balance (and sometimes lack of balance) between their student and other roles. As Westrom and Pankrantz (1997) and Wong (1998) discuss, feedback from learners in this area contributes significantly to successful on-line course design and implementation. Dorothy defined herself as “a full-time mother, a part time student and I work part time” and many of the other learners are in similar situations. Sharing strategies for maintaining this balance was one of the most involved discussions for both of the active semesters. Charles, for example, suggested taking it slow and giving oneself a chance to “learn the ropes of distance education.” Beatrice used childcare to mimic the on-campus situation and to give her space to work on assignments without worrying about her children. Edward valued courses that are well-organized and instructors who are prompt in answering questions. By responding to these suggestions I validated the learners as experts in their own learning. I conclude that on-line distance learners are interested to a limited degree in opportunities to share and to learn from each other’s stories, despite the challenges they face as multiple-role learners using a new delivery medium.

The role of the facilitator / researcher. Because Web conferencing is, above all, a text-based environment (Eastmond, 1995; Haughey & Anderson, 1998), I found myself concentrating more consciously on language and how it could be used to encourage, support, and create context. As an example, crafting the invitation post to the course Web pages involved putting myself in the learners’ place and trying to convey a

sense of welcome while emphasizing the potential value of participating. Discussion topics had to be selected and written from the point of view of “what questions are important to ask?” In the absence of visual, auditory, and other face-to-face cues, I needed to provide written cues. Details and background information added contextual richness to the dialogue.

As facilitator, I also had to use conscious planning and attentiveness to feedback from the learners. As Berge and Collins (1996) describe, a facilitator in a face-to-face setting can adjust strategies to respond to a wealth of perceptual cues. In the on-line setting, less can be taken for granted and the reasons for a lack of response are not as obvious. For example, early in the semester I set up one welcome and introduction folder and got a good response. The other discussion topics, which were somewhat more open-ended and asked for more suggestions from the learners, did not attract as much response. This is consistent with the findings of Klemm and Snell (1996) that learners are more engaged in on-line learning when they are required to produce reports, group responses, and other formal products. My strategy of posting an introductory message with my own experiences as starting points, then waiting for responses, did not work as effectively as I had anticipated. Taking a more leading role as a facilitator and source of information, and using the specific practical questions of learners to highlight wider issues, was more successful. I conclude, as Eastmond (1995) does, that facilitation style interacts with the medium of computer conferencing in a dynamic fashion. On-line groups, like other groups, need different levels of direction and facilitation at different stages.

Evaluation of Strengths, Weaknesses, and Limitations of Web Conferencing for Learner Support

The process of setting up the forum was successful, and led to a careful appraisal of the limitations and potential inherent in using computer-mediated communication to connect with learners at a distance. Although the response was limited, it was appropriate in the context of learners' multiple roles and responsibilities and indicates that this type of non-course-specific forum could be a helpful service to some learners in Web-based courses, as was also demonstrated by the LearnLink system at McMaster University (the NODE, 1998b). *Student Talk* worked as a means of offering support to learners and I can envisage continuing to use it to assist learners in my university. It holds considerable promise for the future of continuing distance education.

As noted in the previous section, the AltaVista conferencing tool in general, and the *Student Talk* forum in particular, proved to be effective in practice. A small group of learners was willing to participate, instructors were supportive, and the design and administrative resources of my university were well-organized and readily available. Significant elements include the technology itself, the process of planning and moderating the forum, and the testing of theory in practice. These results are consistent with literature on the testing of educational applications of on-line technology (e.g., Jones, Kirkup, & Kirkwood, 1992; Mason & Kaye, 1989).

The AltaVista system was relatively easy to learn and none of the learners to date reported difficulties with using it, despite the fact that most of us were new to this particular conferencing tool. Support from the instructional design specialists and Web

administrators responsible for the implementation of many of the institution's new media courses was essential. It highlighted the importance of design support that blends a high degree of technical knowledge with attention to the principles of good adult learning and is consistent with the approach taken by other Canadian researchers (e.g., Boshier, 1988; Burge, 1994; Haughey & Anderson, 1998) who connect learning theory to on-line adult education.

Access to technology is an equally important concern. The group members self-selected themselves on the criterion of familiarity with and access to Web technology. In order to participate, they had to be enrolled in Web-based courses that have minimum requirements for hardware, software, and connectivity. An examination of their e-mails shows that they had this access through both institutional and private channels, but it is fair to assert that most learners were in positions as teachers, managers, and university students where access to the technology and the knowledge to use it were greater than average. Future use of Web conferencing for building an on-line community will need to address the access issue in order to avoid contributing to a widening of the gap between those who have the technology and those who do not. Initiatives in place in Canada and other countries are making this access more available through schools and libraries; forums like *Student Talk* can benefit from the wider participation this could encourage. And, it would seem that access is growing in some of Canada's remote regions. As the number of Internet-based programs included in the 1998 CAUCE *Yearbook of Exemplary Practice* indicates, many learners in remote regions of Canada have gained access to on-line educational endeavours.

I also needed to reflect on the less successful outcomes of the study. The low response rate was a concern. It was especially difficult to maintain contact with learners who chose not to continue posting to the forum. There was no non-intrusive way to contact “no-shows” or unresponsive learners, as there might be in a face-to-face setting where chance encounters in hallways provide non-intrusive opportunities for contact with learners. Strategies proposed by Klemm and Snell (1996), which use academic products such as reports and group contributions to encourage participation, may not be appropriate for an activity that is not purely academic. Time constraints imposed by the semester length at my university only magnified small delays due to technical problems or other demands on my time and that of the learners. Although the AltaVista conferencing system worked well in practice, the administrative practice of clearing all course conferences (including mine) at the end of each semester hampered our ability to carry the forum discussion and involvement of learners through to subsequent semesters. On this point, it would seem that some protocol could be put in place to ensure that such student support conferences were kept open past the end of the semester, that the access list for each semester was recorded so that these learners could be added to the conference in subsequent semesters, or that learners were contacted prior to the end of each term to confirm their interest in continuing to participate in the forum.

Finally, the study allowed me to evaluate the potential usefulness of computer-mediated communication to foster an interdependent learning community similar to others reported in the literature (the NODE, 1998b; Murphy et al., 1996; Strickland, 1998). Even within the short time frame and with the concerns noted above, these small

groups began to encourage an interdependent approach as questions and concerns sparked responses and new questions. Connections between the learners were fewer than between the moderator and the rest of the group, but this is an area that can be addressed by using similar interventions in the future. The AltaVista system is an accessible, fluid, and practical tool for building connections with the learners I serve.

In conclusion, my evaluation of the strengths, weaknesses, and limitations of Web conferencing in *Student Talk* reveals 3 main points of interest to adult educators who are considering the use of this technology for learner support. This study examined three questions about the potential of Web-conferencing: How can administrators and learner support agents overcome isolation? Is there potential within computer-mediated forms of on-line education to address this problem? Can an understanding of the principles of adult learning, the nature of distance learners, and the characteristics of computer-mediated on-line education be applied to the design and delivery of on-line support and community-building? As several learners mentioned in their messages, a sense of isolation from the institution and from other learners was a common experience for them. As Harriet notes, they enjoyed interacting with other learners in *Student Talk* and in their Web course forums. We were able to discuss issues, such as access to university calendars and strategies for success in distance study, that were not bound to course content. Although the degree of community building was severely limited by time constraints, course demands, and multiple responsibilities, learners were able to read about each other's experiences and expressed an interest in participating in this sort of on-line community of learners. *Student Talk* represents a synthesis of technology and

process, learners and facilitator, software and stories that shows a potential which is very real and worth pursuing.

Recommendations for Practice

Based on this study, I make the following five recommendations:

1. The *Student Talk* forum, and similar learner support initiatives, need to be a regular feature of Web-based course delivery systems in continuing education. Learners in the study groups expressed an interest in continuing to participate as they move into new courses.
2. Technical and procedural issues should be worked out with continuing education staff, especially forum administrators, to ensure that security of the system is maintained and that administrative protocols do not hamper support. For example, forum administrators should be consulted to determine ways in which support conferences can be kept open from semester to semester.
3. Web-based learner support needs to be publicized and promoted to a wide audience of continuing education students, instructors, and administrators if it is to attract significant numbers of learners. Information about such programs can be added to learner support publications and continuing education Web sites to encourage participation. As well, instructors and students should be approached directly through the Web-based courses, with appropriate care for course integrity and confidentiality as in the study, in order to build and maintain active support for the concept.

4. Results of research concerning support for on-line learners should be shared with continuing education students, instructors, and administrators. For example, learners, instructors, and administrators involved with this study will be informed via e-mail so that they can read the thesis when it is available.

5. Facilitators of Web-based learner support forums need to encourage more active participation, refine their facilitation skills in the on-line environment, and connect students in a viable community of learners. This can be accomplished by participating in on-line conferences, listservs, computer forums, and electronic journals in order to connect to other continuing educators who are using similar avenues for learner support.

Can computer-mediated communication break down the barriers between distance education learners and the on-campus community of learners? Can on-line conference systems provide a means of extending the community of learners beyond the walls of the campus? Can a Web-based network parallel the social networks that support and enhance learning for on-campus learners? Based on my experience with the *Student Talk* forum and its learners, the answer to all these questions is “Yes, we can. And, yes, we should.”

However, I would also suggest that there are a number of areas of research that need to be investigated further in this area.

Recommendations for Further Research

Based on this study, I suggest the following five areas for further research:

1. The *Student Talk* forum should be continued at my university in order to attract a larger study group that is more widely representative of the range of continuing education students enrolled in our Web-based courses. In addition, research should be undertaken to compare this intervention with Web-based student support programs in other continuing education departments.
2. Research should be undertaken to compare and contrast the forum design and implementation possible using AltaVista with that used in similar forums in other computer-mediated systems.
3. As noted in chapter 3, there were some gender differences in number of posts and duration of involvement with the forum. Further studies should investigate whether or not these differences are significant, and examine how student support could be designed to meet the differing needs and characteristics of female and male continuing education students.
4. Similarly, future research should involve the design, implementation, and evaluation of similar Web-based support for specific learner groups in continuing education. For example, it would be relevant in my province to compare the application of such student support for learners in urban and rural settings, in different socio-economic groups, and in First Nations ethnic groups.

5. Further practical research is needed to address low participation rates. For example, what social and technological factors prevent continuing education learners from participating in student support forums like *Student Talk*? Are there ways in which their participation can be facilitated and increased?

REFERENCES

Barone, T. E. (1992). Beyond theory and method: A case of critical story telling. Theory Into Practice, 31 (2), 142-146.

Barrick, R. W. (1988). Problems and pitfalls in a naturalistic inquiry into the relationship between environmental remembrance and life satisfaction among the elderly. In J. L. McLellan & W. H. Taylor (Eds.), Proceedings of the 7th Annual Conference of Canadian Association for the Study of Adult Education (pp. 1-5). Calgary, AB: University of Calgary, Faculty of Continuing Education.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). Women's ways of knowing: The development of self, voice, and mind. New York: Basic Books.

Berge, Z. L., & Collins, M. (1993). Computer conferencing and on-line education. The Arachnet Electronic Journal on Virtual Culture [On-line], 1 (3). Retrieved January 11, 1999 from archive: LISTSERV@KENTVM.KENT.EDU as file BERGE V1N3

Berge, Z. L., & Collins, M. (1996). A moderator's bibliography [On-line]. Retrieved March 10, 1999 from the World Wide Web: <http://star.ucc.nau.edu/~mauri/moderate/modbib.html>

Blackburn, J. (1998, February). On-line interactivity in learning environments: New dimensions in interpersonal communication. networking [On-line], February 1998. Retrieved December 18, 1998 from the World Wide Web: <http://www.node.on.ca/networking/february1998/feature2.html>

Block, K. (1995). Linking cases to course content. In C. Davis & M. Hrimech (Eds.), Proceedings of the 14th Annual Conference of Canadian Association for the Study of Adult Education (pp. 24-28). Montreal: Concordia University.

Boshier, R. (1988). Socio-psychological factors in electronic networking. In J. L. McLellan & W. H. Taylor (Eds.), Proceedings of the 7th Annual Conference of Canadian Association for the Study of Adult Education (pp. 21-25). Calgary, AB: University of Calgary, Faculty of Continuing Education.

Boud, D., & Griffin, V. (Eds.). (1987). Appreciating adults learning: From the learners' perspective. London: Kogan Page.

Brindley, J. E. (1995). Learners and learner services: The key to the future in open distance learning. In J. M. Roberts & E. M. Keough (Eds.). Why the information highway? Lessons from open and distance learning. Toronto: Trifolium Books.

- Brookes, A.-L. (1992). Feminist pedagogy: An autobiographical approach. Halifax, NS: Fernwood.
- Brookfield, S. (1984). Adult learners, adult education, and the community. New York: Teachers College Press.
- Brookfield, S. (1990). The skilful teacher. San Francisco, CA: Jossey-Bass.
- Brundage, D. H., & MacKeracher, D. (1980). Adult learning principles and their application to program planning. Toronto: Ontario Institute for Studies in Education.
- Burge, E. J. (1990). Women as learners: Issues for visual and virtual classrooms. The Canadian Journal for the Study of Adult Education, 4 (2), 1-24.
- Burge, E. J. (1994). Learning in computer conferenced contexts: The learners' perspective. Journal of Distance Education, 9 (1), 19-43.
- Cahoon, B. (Ed.). (1998). Adult learning and the Internet. New Directions for Adult and Continuing Education, no. 78. San Francisco, CA: Jossey-Bass.
- Campbell, N. (1995). Virginia Griffin's path and contribution toward the holistic orientation: The part, present, and future of adult education. In C. Davis & M. Hrimech (Eds.), Proceedings of the 14th Annual Conference of Canadian Association for the Study of Adult Education (pp.45-50). Montréal: Concordia University.
- Candy, P. C. (1991). Self-direction for lifelong learning: A comprehensive guide to theory and practice. San Francisco, CA: Jossey-Bass.
- Canadian Association for University Continuing Education. (1998). Yearbook of Exemplary Practice, 1998. Kanata, ON: CAUCE Secretariat.
- Chacon, F. (1992). A taxonomy of computer media in distance education. Open Learning, 7 (1), 12-27.
- Code, L. (1991). What can she know?: Feminist theory and the construction of knowledge. Ithaca, NY: Cornell University Press.
- Collins, F. B., & Haughey, M. (1986). Students' choice of delivery formats: Face to face vs. distance education. In M. A. Gillen & W. E. Sinnott (Eds.), Proceedings of the 5th Annual Conference of Canadian Association for the Study of Adult Education (pp. 64-74). Winnipeg, MN: University of Manitoba.

Coulter, R. (1989). Women in distance education: Towards a feminist perspective. In R. Sweet (Ed.). Post-secondary distance education in Canada: Policies, practices and priorities (pp. 11-22). Athabasca, AB: Athabasca University and Canadian Society for Studies in Education.

Cranton, P. (1994). Understanding and promoting transformative learning: A guide for educators of adults. San Francisco: Jossey-Bass.

Cross, K. P. (1981). Adults as learners: Increasing participation and facilitating learning. San Francisco: Jossey-Bass.

De Bruijn, H. F. M. (1993). Computer-aided learning for adults: A new approach. International Journal of Lifelong Education, 12 (4), 303-312.

Denzin, N. K., & Lincoln, Y. S. (Eds.). (1998). The landscape of qualitative research: Theories and issues. Thousand Oaks, CA: SAGE Publications.

Eastmond, D. V. (1995). Alone but together: Adult distance study through computer conferencing. Cresskill, NJ: Hampton Press.

Edwards, R. (1993). Mature women students: Separating or connecting families and education. London: Taylor & Francis.

Edwards, R. (1994). From a distance? Globalisation, space-time compression and distance education. Open Learning, 9 (3), 9-17.

Eisner, E. W., & Peshkin, A. (Eds.). (1990). Qualitative inquiry in education: The continuing debate. New York: Columbia University, Teachers College Press.

Garland, M. R. (1994). The adult need for "personal control" provides a cogent guiding concept for distance education. Journal of Distance Education, 9 (1), 45-59.

Garrison, D. R. (1989). Understanding distance education: A framework for the future. New York: Routledge.

Garrison, D. R. (1992). Critical thinking and self-directed learning in adult education: An analysis of responsibility and control issues. Adult Education Quarterly, 42 (3), 136-148.

Garrison, D. R. (1997). Computer conferencing: The post-industrial age of distance education. Open Learning, 12 (2), 3-11.

Garton, L., Haythornwaite, C., & Wellman, B. (1997, June). Studying on-line social networks. Journal of Computer-mediated Communication [On-line], 3 (1). Retrieved June 13, 1997 from the World Wide Web: <http://cwis.usc.edu/dept/annenbourg/vol3/issue1/garton.html>

Griffith, G. (1983). Images of interdependence: Meaning and movement in learning/teaching. In R. Cervero, M. Collins, M. J. Even, & N. Robbins (Eds.), Proceedings of the 24th Annual Adult Education Research Conference (pp. 105-110). Montréal: Concordia University, Adult Education Program and Université de Montréal, Faculté de l'Éducation Permanente.

Griffith, G. (1987). Images of interdependence: Authority and power in teaching/learning. In D. Boud & V. Griffin (Eds.), Appreciating adults learning: From the learners' perspective. London: Kogan Page.

Guba, E. G., & Lincoln, Y. S. (1983). Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches. San Francisco: Jossey-Bass.

Hall, J. W. (1996). The educational paradigm shift: Implications for ICDE and the distance learning community. OPENpraxis, 2, 27-36.

Haughey, M. (1995). Distinctions in distance: Is distance education an obsolete term? In J. M. Roberts & E. M. Keough (Eds.), Why the information highway? Lessons from open and distance learning. Toronto, ON: Trifolium Books.

Haughey, M., & Anderson, T. (1998). Networked learning: The pedagogy of the Internet. Montreal: Chenellière/McGraw-Hill.

Helsel, S. (1992). Virtual reality and education. Educational Technology, 32 (5), 38-42.

Hipp, H. (1997). Women studying at a distance: What do they need to succeed? Open Learning, 12 (2), 41-49.

Hollis, W. F. (1991). Humanistic learning theory and instructional technology: Is reconciliation possible? Educational Technology, 31 (11), 49-53.

Home, A. (1993). Vive la difference: Are institutions responding to multiple role women's learning needs? In M. Taylor & R. Bédard (Eds.), Proceedings of the 12th Annual Conference of Canadian Association for the Study of Adult Education (pp. 215-220). Ottawa, ON: University of Ottawa, Faculty of Education.

Hotchkis, R.D. (1992). Meaning and social integration among distance education students: A forgotten realm. In M. Taylor & R. Bédard (Eds.), Proceedings of the 11th Annual Conference of Canadian Association for the Study of Adult Education (pp. 191-196). Saskatoon, SK: University of Saskatchewan, College of Education.

Imel, S. (1998). Distance Education. Myths and realities. ERIC Clearinghouse on Adult, Career, and Vocational Education. Retrieved January 8, 1999 from the World Wide Web: <http://www.ericacve.org/docs/mr00012.htm>

Jones, A., Kirkup, G., & Kirkwood, A. (1992). Personal computers for distance education: The study of an educational innovation. London: Paul Chapman.

Kidd, J. R. (1977). How adults learn (Rev. ed.). New York: Association Press.

Klemm, W. R., & Snell, J. R. (1996, March). Enriching computer-mediated group learning by coupling constructivism with collaborative learning. Journal of Instructional Science and Technology [On-line], 1 (2). Retrieved January 5, 1999 from the World Wide Web: <http://www.usq.edu.au/electpub/e-jist/klemm.htm>

Knowles, M. S. (1975). Self-directed learning: A guide for learners and teachers. (rev. ed.). Chicago, IL: Follett.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall.

Lather, P. (1992). Critical frames in educational research: Feminism and post-structural perspectives. Theory Into Practice, 31 (2), 87-99.

MacKeracher, D. M. (1996). Making sense of adult learning. Toronto: Culture Concepts.

MacKeracher, D., Wall, M., & Doucet, K. (1993). Women's learning in three contexts. In M. Taylor & R. Bédard (Eds.), Proceedings of the 12th Annual Conference of Canadian Association for the Study of Adult Education (pp. 249-254). Ottawa, ON: University of Ottawa, Faculty of Education.

Mason, R., & Kaye, A. (Eds.). (1989). Mindweave: Communication, computers, and distance education. Oxford, UK: Pergamon Press.

May, S. (1993). Collaborative learning: More is not necessarily better. The American Journal of Distance Education, 7 (3), 39-50.

May, S. (1994). Women's experiences as distance learners: Access and technology. Journal of Distance Education, 9 (1), 81-98.

McVay, M. (1998, December). Facilitating knowledge construction and communication on the Internet. Technology Source [On-line]. Retrieved March 1, 1999 from the World Wide Web: <http://horizon.unc.edu/TS/commentary/1998-12.asp>

Mezirow, J., & Associates. (1990). Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning. San Francisco: Jossey-Bass.

Montgomery, A., & Little-Gill, J. K. (1997). Creating and supporting on-line learning communities [On-line]. Paper submission for NAU/web.97 - Current practices in Web-based course development. Retrieved July 24, 1997 from the World Wide Web: <http://star.ucc.nau.edu/~nauweb97/papers/montgomery.html>

Murphy, K. L., Cifuentes, L., Yakimovicz, A. D., Segur, R., Mahoney, S. E., & Kodali, S. (1996). Students assume the mantle of moderating computer conferences: A case study. American Journal of Distance Education, 10 (3), 20-36.

the NODE. (1998a, April). Carl Cuneo and the sociology of the Internet. networking [On-line]. Retrieved December 18, 1998 from the World Wide Web: <http://www.node.on.ca/networking/april1998/feature1.html>

the NODE. (1998b, April). The little red schoolhouse at McMaster University. networking [On-line]. Retrieved December 18, 1998 from the World Wide Web: <http://www.node.on.ca/networking/april1998/feature2.html>

Percival, A. (1993). Practising theory: A guide to becoming an effective adult education programmer. University of Saskatchewan: University Extension Press.

Personal Narratives Group (Eds.). (1989). Interpreting women's lives: Feminist theory and personal narratives. Bloomington, IN: Indiana University Press.

Pincas, A. (1998, October). Successful on-line course design: Virtual frameworks for discourse construction. Educational Technology and Society [On-line], 1 (1), 14-25. Retrieved January 27, 1999 from the World Wide Web: http://ifets.gmd.de/periodical/vol_1_98/pincas.html

Potter, J. (1994). Improving student support services for adult learners. In M. Brooke & M. Waldron (Eds.), University Continuing Education in Canada: Current challenges and future opportunities (pp. 26-35). Toronto: Thompson Educational Publishing.

Randall, W. L. (1995). Restorying lives: Transformative learning and the narrative turn in the human sciences. In C. Davis & M. Hrimech (Eds.), Proceedings of the 14th Annual Conference of Canadian Association for the Study of Adult Education (pp. 177-178). Montreal: Concordia University.

Razack, S. (1993). Story-telling for social change. Gender and Education, 5 (1), 55-70.

Spencer, B. (1993). Labour and educators conference on SoliNet: A network for the nineties? In M. Taylor & R. Bédard (Eds.), Proceedings of the 12th Annual Conference of Canadian Association for the Study of Adult Education (pp. 355-361). Ottawa, ON: University of Ottawa, Faculty of Education.

Spennemann, D. H. (1996, March). Gender imbalances in computer access among environmental science students. Journal of Instructional Science and Technology [On-line], 1 (2). Retrieved January 5, 1999 from the World Wide Web: <http://www.usq.edu.au/electpub/e-jist/spenne.htm>

Stoffel, J. A. (1987). Meeting the needs of distance students: Feedback, support and promptness. Lifelong Learning, 11 (3), 25-28.

Strickland, C. (1998, June). A personal experience with electronic community. CMC Magazine [On-line]. Retrieved January 24, 1999 from the World Wide Web: <http://www.december.com/cmc/mag/1998/jun/strick.html>

Sweet, R. (Ed.). (1989). Post-secondary distance education in Canada: Policies, practices and priorities. Athabasca, AB: Athabasca University and the Canadian Society for Studies in Education.

Tough, A. M. (1979). The adult's learning projects: A fresh approach to theory and practice in adult learning. (2nd ed.). Toronto: Ontario Institute for Studies in Education.

Turkle, S. (1995). Life on the screen: Identity in the age of the Internet. New York: Simon and Schuster.

Waldron, M. W., & Moore, G. A. B. (1991). Helping adults learn: Course planning for adult learners. Toronto: Thompson Educational Publishing.

Westrom, M., & Pankratz, T. (1997). Creating collaborative communities on-line [On-line]. Paper submission for NAU/web.97 - Current practices in Web-based course development. Retrieved July 23, 1997 from the World Wide Web: <http://star.ucc.nau.edu/~nauweb97/papers/westrom.html>

Wong, A. T. (1998). An evaluation of the Internet-based Math Readiness Course (MRC) trial. Research Report submitted to the Office of Learning Technologies, Human Resources Development Canada. Saskatoon, SK: University of Saskatchewan, Extension Division.

APPENDIX A

GLOSSARY OF TERMS

Access lists are lists of users who have permission to enter a computer-based discussion. For example, an e-mail list server will have an access list consisting of the e-mail addresses of individuals who have subscribed to the list.

Address refers to identifying information that allows a computer or network to locate a user, host computer or information resource. A typical e-mail address, for example, is usually in the format of: `username@hostcomputer.ca` .

Asynchronous forms of communication, such as e-mail and voice mail, do not occur in real time. Participants' messages are composed and sent at times which are convenient for them, then stored until the recipient(s) are ready to read them.

Chats (often referred to as chat lines or channels) are software programs that allow many users to engage in a text-based discussion on a computer network in real time. A chat screen will typically identify each participant by a short nickname, followed by whatever text they have typed in and sent to the chat.

Computer networks are groups of computers which are linked by direct wire connections or telecommunications devices in order to share resources, files, and communications.

Computer conferencing systems allow more extensive and organized support for group communication than e-mail alone. Learners can discuss topics, work together on projects, develop shared knowledge, and archive contributions. Most systems, such as AltaVista and FirstClass, use client programs to access a server located within a host institution or Internet service provider. Computer conferences are especially well suited to adult learning because they allow the discussion to be guided and organized for ready access through the use of sub-conferences and folders.

Computer-assisted learning (CAL) uses a computer program to guide and direct learning without the direct intervention of a tutor or instructor. Common examples are tutorials, drill and practice, and simulations.

Computer-mediated communication (CMC) refers to the use of computers as a medium of communication between individuals. Examples of CMC include e-mail, the Internet, and other forms of both synchronous and asynchronous communication.

Distribution lists, also called list servers or listservs, are software programs which store a list of e-mail addresses for people who ask to subscribe to the list. Most distribution lists are formed to facilitate discussion about specific topics of common interest to group

members. Any e-mail message posted to the list is automatically re-directed to all subscribed members. In a moderated list, one individual acts as a moderator for the discussion and filters messages prior to redistribution in order to maintain agreed-upon group standards.

E-mail, short for electronic mail, is an Internet-based parallel to written mail (snail mail, to most Internet users). E-mail servers store and deliver messages composed by one computer user and sent to another.

Folders are sublevels of computer conferences which contain messages related to a particular topic, question, or discussion thread. Folders are a key tool for managing and organizing the numerous messages that are generated by most conferences. Messages related to a particular theme can be posted and read within a folder, usually by selecting the link to that folder on a conference Web page. Subfolders can be created within folders to contain messages related to subtopics generated within a discussion topic.

Forums are set up within a computer conferencing system to bring together participants around a general area of interest. In educational applications, forums are created for each Web-based course delivered through the institution hosting the conference system. An individual or individuals, often the course instructor, is responsible for administering and moderating the forum.

A home page is the Web page which users first encounter when visiting a location on the Internet. Home pages generally contain introductory information and links to more specific content and services.

Hyperlinks are specifically labelled buttons or highlighted text within a hypertext document such as a Web page. By clicking on a hyperlink, users are able to link to other sectors within the same document, to other Web pages, or to other Internet resources. As a result, Web-based learning can be designed to be much more non-linear than other means of distance learning. For example, learners can click on a hyperlink within a document to get definitions of terms, explore topics in more depth, and connect to related resources.

The Internet is a collection of individual, national, regional, commercial and institutional computer networks which use a common protocol (TCP/IP) and addressing scheme to enable shared access to resources.

Internet Service Providers (ISPs) are commercial and institutional organizations providing access to the Internet through e-mail addresses, connectivity software, and hardware.

Links is the commonly used term for hyperlinks.

A login name (username) is assigned to each user for computer-based discussion groups, conferences, and Web sites where controlled access and privacy is desired. Usernames can take many forms depending on the computer system or program used, but are generally short and easily associated with the user. Passwords are used in connection with login names to ensure that only the user associated with a given username is able to gain access to the system. They are generally known only to the user and the system administrator(s).

Lurkers are members of e-mail list servers, newsgroups, computer conferences, and other on-line groups who are active readers of the discussions but rarely or never contribute to them.

Modems are devices that allow computers to transmit and receive information via ordinary telephone or cable lines. Modems convert the digital signals which computers produce into analog signals which can be carried on these lines.

A moderator in a computer-based discussion plays a similar role to a moderator or facilitator in a more traditional face-to-face group, teleconference, or videoconference. The skilled moderator must organize, stimulate, and guide the discussion, encourage participation, and ensure that the discussion adheres to agreed-upon standards.

Networked learning occurs when instructors and learners use electronic networks to communicate, collaborate, and access resources for learners. Computer conferencing, e-mail, and Web-based instruction are common examples of networked learning.

New media courses are distance education courses that use a blend of media to enhance interactivity between instructors, learners, resources, and course content. For example, a typical Web-based course delivered primarily via the World Wide Web may also incorporate written manuals or texts, video, audio, and other resources.

Newsgroups are text-based, asynchronous, Internet discussion groups focussing on specific topics of interest to groups of users. Messages, also called posts, to these newsgroups are stored and distributed by news servers (Usenet servers). Newsgroups differ from distribution lists in that they are open to any user who wants to read and post to the group, rather than to a list of subscribed members.

Off-line activities take place when the user is not actively connected to the Internet or another computer network. For example, most e-mail and conferencing software allows users to download messages, store them, then read and respond to them off-line before uploading responses to share with others at a later time.

On-line activities take place through computer-mediated channels such as the Internet and World Wide Web. Users often differentiate, for example, between on-line environments and interactions, and their real-life counterparts.

Posts refer to individual messages contributed (“posted”) to an electronic forum such as an e-mail list server, Internet newsgroup, or computer conference.

Servers are computer programs which respond to requests from client programs operated by remote users. They can be housed on computers which are connected to the Internet. As an example, large Internet sites often house e-mail or computer conferencing servers.

Synchronous forms of computer-mediated communication, such as chatting or Internet voice telephone, take place in real time.

Text-based refers to the fact that basic communication via computers is carried out by written (typed) text displayed on a screen. The text-based nature of this communication is beneficial for composing, editing, and reflecting on the content of discussions, but raises concerns centred around literacy and access for users who are not able to work readily with text.

Threading refers to a means of organizing e-mail or computer conference messages according to topics. Readers are then able to easily follow contributions to a particular topic, or thread, rather than sifting through all messages in the group. For example, messages in a folder can be organized so that users are directed to responses to a topic or message by links at the bottom of each message.

A URL (Uniform Resource Locator) is the address of an Internet-based resource such as a home page, sound or video file, or text file which can be accessed by a Web browser. For example, the URL of a Web page is typically in the form: `http://machine/location` .

Virtual reality programs simulate real-life environments within computer systems and interfaces. Many computer-based educational programs use some degree of virtual reality to create learner-friendly settings for learning. For example, a computer conference site may use graphics and links to build a visual environment that directs users into and around a virtual campus building and associated conference rooms.

Web browsers are client programs, such as Netscape and Microsoft Internet Explorer, that enable users to retrieve and display information from World Wide Web server programs. They provide most users’ first point of contact with the many resources available and increasingly include a diverse range of functions such as e-mail, Web page development tools, discussion groups, and search functions.

World Wide Web (WWW), often abbreviated to the Web, is an interlocking system of Internet resources defined and organized by protocols for addressing, processing, and transmitting information between computers. The Web has expanded at a phenomenal rate, allowing individuals access to information in many formats and levels.