

**FACILITATING CRITICAL THINKING AND REFLECTION
IN DISTANCE EDUCATION : A CASE STUDY**

THESIS

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MASTER OF ADULT EDUCATION**

BY

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Abstract

This case study focuses on the methodical revision and improvement of a distance education course with the goal of generating critical reflectivity in both the educator's and the students' practice. The literature review centers on the broader context and trends of using critical thinking and reflection in adult education and in distance education; the various elements that can best facilitate critical thinking and reflection, with a focus on distance education course design and teaching methods; and methods for evaluating critical thinking in university distance education courses. The case study itself is based on extensive formative needs assessments. The results of these are described, as are the changes implemented on the basis of this needs assessment, in hopes of facilitating critical thinking in students. The thesis concludes with the effects of these changes for the researcher's professional role and for creating opportunities for students to develop their critical thinking and reflective skills. Several recommendations are offered to distance educators who are planning to revise established courses and who wish to promote critical thinking and reflection among distance students.

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CHAPTER 1

INTRODUCTION TO FACILITATING CRITICAL THINKING AND REFLECTION IN DISTANCE EDUCATION

As a university distance educator for 12 years, I have sought numerous ways to improve my courses for students while trying to ensure that they learned the skills they need most for their careers. My most pressing concern has been the argument that distance education students do not engage fully in the university experience and are subsequently at a disadvantage in learning important professional skills, such as critical thinking and critical reflection. Furthermore, like many academics, I was never trained in how to teach such skills nor, especially, in how to design relevant distance education courses for doing so.

Over the past decade, adult educators have been subjected to increasing demands among stakeholders in their programs to integrate critical thinking and critical reflection into their courses (see, for example, Brookfield, 1995). This demand is particularly challenging for distance educators who work in contexts where many colleagues and administrators believe that distance education is fine for having students “parrot back” knowledge type information, but it is inadequate for teaching the process of thinking critically. Indeed, some argue that what is perceived as the rote learning approach of distance education may actually prevent the development of critical thinking and reflective skills in students (see Black 1992). This case study describes my challenge in revising and improving my courses to generate critical reflectivity in both my own and my students’ practice.

Background Information

I work at a large, regional university in eastern Canada. The university serves both full and part-time students throughout the province. In distance education alone, there are approximately 10,000 single course registrations in close to 250 distance education courses in any given year.

Since 1988, I have been teaching three courses in a distance education format. One of these courses is the “Anthropology and Sociology of Families.” The first half of the course traces the anthropology of families over time and space, and the second half examines the sociology of modern North American (especially Canadian) families. This course is offered through the distance education department of my institution three times a year to a maximum of 50 students per semester. I generally have full enrollment, with a few students dropping out through each semester. The majority of my distance education students are concurrently doing other distance or classroom-based courses at the university and many of them are full-time students. Distance education is no longer considered the milieu of part-time and special interest students alone. Moreover, although distance is implied, it is often not geographical. On average, about one third of my students live outside of the area where the university is located. The rest take my distance education course because they have scheduling, work, or family conflicts with alternative classroom courses. I speculate that few of these students are actually self-directed learners who prefer a distance education mode.

As I began reading about the role of reflection in adult education, I began to ponder how I might independently integrate critical reflection into my course materials and

process of teaching. I decided to assess the students' perceived and ascribed needs in that area and to revise my course accordingly. I also decided to record my process as a case study that may be of interest to other distance educators facing similar challenges.

Problem Statement

My focus for this case study was how to design university distance education courses to better facilitate the development of critical thinking and reflective skills in participating students and in myself. I needed to find out what critical thinking and critical reflection are, what kinds of learning exercises for stimulating critical thinking are appropriate in distance education, and what other aspects of distance education courses are also instrumental in helping students learn to think critically and reflectively. From this, I examined elements of course design which do or do not assist in the development of critical thinking skills.

In doing this case study, I wanted to engage in more critical thinking and reflection myself — in response to the critique that distance education (and, by extension, the distance teacher) is inferior as a context for promoting critical reflectivity. Finally, I was interested in finding out whether academic concerns over students' development of critical thinking skills while in university were shared by the students, themselves.

Purpose of the Case Study

In revising my distance course, I had two main objectives: (a) to ensure that the distance students had the opportunity and encouragement to develop their critical thinking skills within the course, and (b) to improve my own critical thinking and reflectivity in my professional activities as a teacher. On the broader goal reported in this reported in this

thesis, my purpose was to examine what types of change in a distance course are useful in helping students to develop their critical thinking and critical reflection skills. By doing this, I hope to contribute to that body of adult education literature concerned with the teaching of these skills in a distance education format.

Research Process, Scope, and Limitations

This case study very closely adheres to Cross and Steadman's (1996) model of classroom research in that it was learner-centered but teacher-directed, collaborative in actively engaging both teachers and students, context-specific, scholarly, practical, and relevant. I began it in the fall of 1997 with an extensive *in situ* needs assessment--a learning journal exercise--which I administered again in the winter semester of 1998. Recognizing that the needs of other stakeholders had to be considered as well, I developed other kinds of assessments for my course throughout 1998. Effectively, I ended up with seven separate evaluations, including a literature review within the field of adult education; the findings of a curriculum review committee struck by my department in 1998 (and on which I sat as a member); a series of professional development activities offered through my institution that I participated in; a self-evaluation based on a journal I kept throughout the research process; a summary of the summative evaluation questionnaires of my course that I had collected over the 10 years I had been teaching distance education courses up to that point; and various suggestions and feedback students have sent me over the years of my teaching informally and formally through manual insert questionnaires. Although I had occasionally considered comments and ideas from these sources before, I had never done so in such a methodical and meticulous manner as for this case study.

In the winter and spring of 1999, I summarized and collated these various sources of needs and tabulated the primary data from each according to the categories that repeatedly came up. I then wrote an evaluation report of the findings which I used to assess my course overall and by each unit. This evaluation report was 35 pages long; I had originally intended to use it as a mere beginning for my case study. However, the needs assessment became a major component of the case study.

Substantial changes were made to my course on the basis of this needs assessment throughout the summer and into the fall of 1999. I then evaluated these changes in terms of how well they compared to established adult education practice and to my own standards of effectiveness. I also had students do several informal evaluations of the changes via project work, web discussion, teleconferencing, and the computer network Listserv for the course during the winter of 2000. I looked for evidence of changes in students' critical thinking skills at different points during the semester. For example, by encouraging students to reflect and analyze (and by giving examples) in the earlier exams and discussion submissions, I began noticing marked improvements in their later submissions.

This thesis lies within the area of critical thinking in the context of distance education. It includes aspects of needs analysis, program planning, and the teaching of critical thinking skills by distance, with an emphasis on needs analysis. During the case study, which extended over seven semesters, a total of approximately 325 students enrolled in the course while I was revising and refining the critical thinking and reflectivity scope of the materials and teaching process. These students were primarily female (about

85%), with close to 60% enrolled full-time at my institution. Many were young women without children, though approximately 25% had families and work to contend with along with their university studies. Most lived in or around the urban area in which the university is located.

During the process of this case study, I was faced with certain limitations from its earliest stages. I began with completed manual insert questionnaires, learning journal exercises, summative evaluation questionnaires, and my own assessments for all three courses that I teach regularly. I had the initial intention of revising all three. However, due to various constraints, including time, I realized I could do an adequate job of revising only one of the courses. I selected the “Anthropology and Sociology of Families” course for this case study because it was my longest running course and, as the oldest, the one most in need of revision. I have kept the hundreds of pages of data for the other two courses, however, in case I might want to use these elsewhere.

I was limited in terms of collecting data for students’ reactions to my course changes to my own observations of these reactions. At this point, time prohibited another extensive evaluation. In addition, during the first needs assessment of students’ usage of critical thinking skills, I found that students affirmed my prior observations, so I felt relatively assured that I could rely on my own assessments again. I also relied on my own judgement of which aspects of the course changes were most useful, given student problems or areas they found least challenging.

Assumptions

There were a few assumptions that I made throughout my case study: The most important of these was that the majority of distance education students want to learn skills such as critical thinking and reflection. Although I still believe this to be true, I found that only about 10% of my classes were willing to work through the optional assignments that were expressly designed for this purpose and fewer still identified such learning as a need in my case study.

I assumed that because the purposes of my study were to revise my current distance education course and for me to grow professionally, the requirements of quantitative research methodologies were not relevant. Both my learning journal exercises and summative evaluation questionnaires were answered by self-selected students and were not, therefore, statistically reliable. I gathered together and averaged the results of the summative evaluation questionnaires I had collected over several years of my teaching because only two or three students in each semester actually filled these out and sent them in. I felt secure in using these data because (a) the goal of my study was professional development rather than quantitative research, and (b) the course design and my teaching methods did not vary over this assessment period, although the readings in the course did occasionally change.

Despite the limits on generalization, I assume that the summative evaluation questionnaires and learning journal exercises were valid for my purposes. The learning journal exercise was a graded assignment designed to elicit critical thinking and reflection. In my opinion, the students were quite honest and articulate in their answers. Most of the

learning journal exercise questions were of a qualitative nature, as were the latter five on the summative evaluation questionnaires.

Definition of Terms

As in any learning activity, I found myself defining and redefining my terms several times throughout my study. In this section, I provide the definitions for these terms that represent my usage in this thesis.

The working definition of critical thinking that I finally found most useful is a composite of several interdependent features. These features include reflective skepticism, assumption checking, empathy, recognition of primary relationships, deduction of patterns, inference and conclusion making from data and information, and evaluation of the evidence or the pronouncements of others (Cross & Steadman, 1996; Ennis, 1993; Grasha, 1996; Scriven & Paul, 1999; Terenzini, Springer, Pascarella, & Nora, 1995). This definition was used in determining how my distance education course could best be revised to meet the goal of facilitating the development of critical thinking skills in distance education students. In contrast to Cross and Steadman's argument that critical thinking is a form of "male dominated technical rationality" (p. 193) that creates an adversarial environment, my focus was more on its cognitive aspects of solving problems, evaluating, and making connections.

Critical reflectivity is also central to my goal of improving my adult education practice. Evans and Nation (1989) explain that critical reflectivity in the practice of distance education is a reciprocal and interwoven process of reflection and action, in which reflection ultimately leads to changes in one's practices.

Related to this is transformative learning, or learning in contexts where power structures are acknowledged and the learners' perspectives on meaning are changed through critical reflection (Mezirow, 1991). In the transformation of my meaning perspective, I engaged in the aspects of premise reflection identified by Mezirow as critically considering (a) my presuppositions, (b) the content and process of problem-solving that I use, and (c) how these presuppositions have helped to form my meaning perspectives. I was able to then critically appraise my values and attitudes and how this appraisal could be used in the transformation of my frameworks of meaning. Reflective learning is defined by Mezirow as the confirmation, addition, and transformation of ways to interpret experience, which I have certainly engaged in throughout this case study.

In contrast to critical thinking, critical reflection, and transformative learning, calculative thinking stems from the realms of science and technology and presumes a concentration on only visible facts, realism, and objectification (Heidegger, 1966). Opponents of teaching distance education courses at the university level argue that areas of concentration can only engender calculative thinking (Black, 1992; Kirby, 1993).

Throughout this case study, I practiced Cross and Steadman's (1996) definition of teaching:

Teaching involves figuring out what learners already know (including misconceptions about a given subject), building upon that existing knowledge, and helping learners make connections between new information and prior learning so that they can understand and retain new material. (p. 37)

Teaching in distance education relies heavily on the structure of the course and materials, and on alternative forms of interaction with students. I had to look at course

design and development, where there is a specific set of terminology. I placed myself in the instructional design camp, where there is an emphasis on the importance of a good course outline that covers content, arguments, and main themes; how topics relate to each other; where the teacher's emphasis is placed; and where the student might encounter difficulty. In the instructional design tradition, the course outline should also state the purpose and objectives of the course; the aims of the teacher; the amount of factual information that the student is expected to acquire; the time allocation for each unit; skills the student should have attained by course end; and the attitudinal changes that are expected in students (Dick, 1995; Kelly, 1990; Schieman, 1990). According to Wagner and McCoombs (1995), and Willis (1995), programs or courses based on instructional design are teacher-centered and objective-driven, with students following teachers' directives for success.

Wagner and McCoombs (1995) argue that distance education is ultimately more amenable to incorporating the psychological principles of learner-centeredness than is instructional design. Despite my instructional design tendencies, I too felt this to be true and in this case study I wanted to switch to a constructivist perspective which concedes varied perspectives on an issue. Learners then tailor their study by using their own experiences to interpret material and develop a personal perspective. If needed, this can be done along with objective methods to demonstrate levels of competency. According to Willis (1995), constructivism in learning occurs when one is reflecting on one's own dilemmas, such as a recent disorienting experience. Learning is further mediated by learners' interactions with the social world and the legitimacy granted to their subsequent

interpretations of that world. Such problem-based learning is becoming increasingly popular, although it is often difficult to implement by distance (Brookfield, 1992; Mezirow, 1994; Saver & Duffy, 1995; Walker, 1985). It is also implicitly aligned with critical thinking and critical reflection.

In constructivist theory, learning is best achieved in a situated context. The situated context refers to the actual circumstance or area outside of the learning context where the skills will be needed and practised. To reconstruct a situated context, all factors that play out in the “real world” are duplicated as closely as possible or the students learn in the real world context of where they will eventually apply their knowledge (McLellan, 1993). My own learning for this degree was within a situated context.

In contrast, decontextualized learning occurs in an artificial environment, such as in university courses, where the learner focuses on selected knowledge and principles that are abstracted from the real world.

Plan of Presentation

Following this introductory chapter, chapter 2 is a literature review in which I situate the theoretical framework for the study. I review how and why the teaching of critical thinking and critically reflective skills is problematic in university distance education courses. I look at the use of instructional design and constructivism in developing distance education courses, and how these approaches can assist in creating a course that promotes critical thought in students. In a similar manner, I look at methods for teaching and evaluating critical thinking and critical reflection in students, and whether or not these are applicable in distance settings.

Chapter 3 is a description of the procedures I went through in creating and implementing the case study. I discuss the various needs assessments completed in the attempt to evaluate how to change my course to promote critical thinking and reflection. I review and analyze the changes I made to the course and the course manual and, finally, I assess these changes from my own and my students' points of view.

Chapter 4 includes my analysis and interpretation of the results of the case study. I discuss my findings in light of my original purpose and the literature on course design and promoting critical thinking in distance education courses. Finally, I make recommendations for university distance educators who are faced with the dilemma of how to choose course designs, assignments, and elements of instruction, and I examine the possible influence that my case study may have on the development of distance education delivery practices.

CHAPTER 2

A REVIEW OF THE LITERATURE ON FACILITATING CRITICAL THINKING AND REFLECTION BY DISTANCE EDUCATION

One question posed in the current academic debate is whether distance education can be structured to facilitate the development of critical thinking and critical reflection in learners (Black, 1992; Kirby, 1993). I use this literature review to systematically address this debate. In the first section, I examine the broader context and trends of using critical thinking and reflection in adult education and in distance education. Then I consider various elements of the distance education teaching process that can best facilitate critical thinking and reflection, including institutional and professional changes, distance education course design methods (e.g., instructional design or constructivism), and teaching methods. I conclude by looking at methods for evaluating critical thinking in university distance education courses.

The Challenge of Teaching Critical Thinking and Reflection at a Distance

Critical thinking and reflection are essential skills for learners in any contexts where the goals are social change or individual empowerment. In this section, I briefly look at two foundational movements in adult education where critical thinking and reflection skills were promoted as tools for social change. I note how current adult educators continue in this tradition. I then review the debate over teaching critical thinking and reflection in distance education.

The Role of Critical Thinking and Reflection in Adult Education

Critical thinking and reflection have long been identified as key tools in adult education for stimulating social change. An early Canadian example of this was in the Antigonish Movement in Nova Scotia, 1912-1930, when founder Moses Coady advocated “real thinking” for the impoverished local fisherfolk so they could be freed from the oppression of a mercantile elite. Coady wanted the common people to be able to understand the market forces that had robbed them of their consumer and worker rights through obfuscation by the upper classes. Coady used the term real thinking synonymously with “scientific reasoning,” but without the usual overtones of objectification. He referred to scientific reasoning as critically breaking down an issue or process into its component elements and then analyzing the effects of each component on daily life (Alexander, 1997; Coady, 1967) .

In the critical thinking tradition, Coady (1967) recommended a problem-solving approach in adult education in which the true issues confronting the learner would be identified and ultimately resolved. Coady’s vision for adult educators was to encourage real thinking by working within the community context as social activists. Their role was to attempt to change the passivity of community members by helping them learn the problem-solving process and how to work co-operatively.

Another example of the use of critical thinking and reflection in adult education was in the South American popular education movement promoted by Paulo Freire from the 1940s through to the 1970s. Like Coady, Freire (1978) felt that education should not be used to bureaucratize or indoctrinate people. Instead, its purpose should be to help

workers and the oppressed develop a greater awareness of the exploitative processes by which they are denied their labor and consumer rights. In the Marxist philosophical tradition, Freire (1972) believed that social change could be engendered through adult education when learners went through a conscientization process. In this, they would acquire a true consciousness of their situation through critical reflection. Also like Coady, Freire designed a problem-posing technique of education to help learners find new ways of dealing with the most immediate issues confronting them. Ultimately, learners would hone their critical thinking skills to the point of seeking solutions to their problems in social action.

These concerns over the thinking skills of working class learners have informed a great deal of current adult education theory and practice. For example, Freire's (1972) problem-posing technique has been promoted and refined by Beder (1991) and Cadena (1991). Both Beder's transformative research and Cadena's systematization involve learners' reflection on the context of reality and power structures, and their self-determination. The goals of facilitating critical thinking and reflection are still to solve relevant problems and to create knowledge for social change, instead of creating knowledge for its own sake.

Similarly, Shor (1980) and Mezirow (1991) believe that critical thinking and reflection could be used for social transformation, though indirectly. These adult educators concentrate more on the transformation of the individual consciousness. In response to the critique that transformative learning is more a form of modern liberalism than critical social intervention (Merriam & Caffarella, 1991; Pietrykowski, 1996), Mezirow (1996)

argues that social transformations can occur through the collective development of similar individual interpretations of that reality.

As a preliminary step in facilitating conscientization, which leads to transformative learning, Shor (1980) identified several interferences to critical thinking for his working class university students in New York. These included: the alienation from reflective processes that is created by the depersonalization and machination of learning; a false consciousness through the reification of the commodity culture; the use of pre-scientific mystification to explain life; and the acceleration and fragmentation of social, educational, and personal life. Mezirow (1991, 1996) also believes that learners and teachers had to overcome such blocks to learning through the use of reflection, problem-solving, and critical thinking. Mezirow's transformative learning involves changes in the individual's meaning schemes (attitudes, beliefs, and concepts about specific matters) and meaning perspectives (general world views and thinking styles).

Variations of these critical thinking goals have been adapted by many university adult educators over the past few decades. For example, Savery and Duffy (1995), and Walker (1985) address the issue of restricted, calculative thinking by promoting problem-based learning in which learning occurs when the student is reflecting on his or her own dilemmas and going beyond the university to interact with the social world.

Restricted and calculative thinking was identified by Habermas (1970, 1975) who believed that part of the agenda of the university is to provide an opportunity for individual transformative learning by ensuring that graduates have critical thinking and reflection skills. He decries mass universities as "knowledge factories" where courses are

not clearly defined and the traditional examination process is more an assessment of memorization (restricted thinking) than of any other form of reasoning. Habermas, McKenna (1991), and Smith (1987) note that current university structures actually restrict discourse by truncating the process in which students and teachers organize their own meanings and meaning perspectives, and by placing knowledge in a calculative framework designed to meet the rational goals of industry.

Habermas (1975), Smith (1987), McKenna (1991), and Cruikshank (1995) point out that the effects of economic globalization, such as massive downsizing and job losses within universities and elsewhere, have had very negative effects on the educational process. Cruikshank points out that many adult educators in universities perform retraining functions in an entrepreneurial spirit without much actual government funding or planning to deal with those displaced by financial downsizing. In the adult education tradition of promoting social change through critical thinking and reflection, Cruikshank exhorts university adult educators to try to increase public awareness of the ideology and trends that are occurring and unveil the mystification surrounding the globalization process. This “call to arms” presents a particular dilemma for distance educators that I briefly discuss below.

Trends in Distance Education at Universities

During the 1990s, economic globalization led to demands for greater cost efficiencies and cut-backs in funding at universities. Concurrently, there was a huge increase in the use of distance education to deliver courses and it has become increasingly popular among administrators and students in many universities across Canada (Selman,

Selman, Cooke, & Dampier, 1998). For example, in my university department where this thesis study took place, the number of distance education courses gradually increased from 3 in 1981 to 8 in 1989. This number mushroomed to 18 by 1998 (Distance Education Review Committee, 1998). At the beginning of this period, all of the distance education courses were taught by regular faculty members of the department. By 1998, only 22% of the distance courses were taught by regular faculty. As part of economic downsizing, the remainder of the courses have been taught by contractual workers at other institutions or by independent sessional workers — all of whom represent lower labor costs for the administration. When combined with massive provincial and federal funding cuts to post-secondary programs during the 1990s, these lower costs of distance education courses have sometimes generated more revenues for the university than other forms of course delivery (Keast, 1997; Rumble, 1997; Selman et al., 1998).

Another aspect of the globalization process has been the drive to incorporate new computerized technologies such as the Internet into teaching and to expand and diversify distance education courses (Kirby, 1993). However, even promoters like Keast (1997) have reservations about the introduction of new technologies when these involve expensive computer and Internet access upgrades and equipment that make them relatively inaccessible to students who cannot afford or access the required technology.

Students are also finding distance education courses increasingly attractive. In my department, enrollments in distance education courses rose from approximately 100 per year in the early 1980s to over 2200 per year by 1996 (Distance Education Review Committee, 1998). Traditionally, working and part-time students opted for distance

education courses because of their flexibility and accessibility (Evans & Nation, 1989; Keast, 1997). With such effects of globalization as the increased overall demand for retraining (Cruikshank, 1995) and a more episodic and individualized approach to learning among adult students in general (Kirby, 1993; Selman et al., 1998), distance education is now filling new needs for adult students.

Keast (1997) and Selman et al. (1998) point out that the rate of student participation in distance education courses in Canada is increasing. According to Black (1992), this raises concerns among university faculty over the quality and depth of the education and knowledge that students are receiving through distance education courses and programs. In my opinion, however, many distance educators agree with Cruikshank (1995) that they should strive to engage their students in some form of conscientization to help them deal with the individual effects of the globalization process. Critical thinking and reflection are important tools in this conscientization, and whether these can be taught at a distance is the issue for the next section.

The Debate Over the Teachability of Critical Thinking and Reflection at a Distance

The debate over whether or not critical thinking skills can be developed in students is far from new or specific to adult distance education. Detractors often claim that critical thinking and reflective skills cannot be taught, but Underbakke, Borg, & Peterson (1993) note 1976 research in which first and second year sociology students neither inherited these skills nor acquired them by mere exposure to critical thinking in the course material. The subjects had to be enculturated and introduced to specific thinking methods in class. Lewis and Smith (1993), Cross and Steadman (1996), Cadena (1991), and Grasha (1996)

argue that critical thinking and reflection are teachable skills that should be a part of any course content. The argument over the teachability of these skills seems to raise even more debate when university distance education courses are at issue. Detractors believe that the structure and historical foundation of distance education in instructional design presumes and facilitates calculative thinking in that teachers must overtly state (and in doing so, reify) texts, modules, objectives of learning, and so on (Evans & Nation, 1989). Haughey (1991), for example, points out that the role of the educator is to ensure dialogue among the learners, knowledge, and the social world, and that this dialogue is constrained by the systematic nature of distance education. She maintains that much available distance education material engenders rote learning and memorization, where success is gaged according to pre-specified objectives. Haughey takes steps to address this problem but she points out that distance education is still considered by many to be an “instant education”(p. 13).

Baird (1995), Black (1992), and Kirby (1993) all note that distance education courses have long been regarded as inferior to campus-based courses by both faculty and administrators. In Black’s sample of 670 faculty members at the University of British Columbia, the primary concern of non-supporters of distance education was that educational quality suffers when teaching and learning are temporally and spatially separated. These faculty members defined quality by the interactive and discursive aspects of the course, by the level of technology present, and by the course and program content. As in Kirby’s (1993) study, they stressed the importance of the on-campus experience for a university education.

Overall, Black (1992) found that faculty were most supportive of individual distance education courses at the undergraduate level. The majority did not support entire undergraduate programs or graduate level courses and programs through distance education. Interestingly, Black found that distance education supporters envisioned the university as an institution for mass education, whereas those who opposed it considered university education to be an elite privilege, though they often apologized for this opinion.

In response to this, Kirby (1993) and Gillard (1993) argue that distance education courses are no more or less inferior than those on-campus courses that are mass-delivered to classes of 200 or more students at a time, or courses that are poorly taught to smaller classes. Gillard (1993) takes this argument a step further by highlighting the comparative disadvantages of “live” learning from the student’s perspective. In live classes, there is more direct institutional control and lecturing can be both reifying and legitimating of the status quo. The spacial dynamics of the professor-student relationship is alienating and teaching is usually instructor-centered.

According to Gillard (1993), distance education courses reflect student needs to a greater extent in that the texts, materials, and entire courses are usually well-organized with good design and educational principles. Objectives are explicit rather than implicit (as in many on-campus courses) and the technical aspects of the presentation of material are important. In fact, on-campus instructors often draw on time-honored distance education practices like using outline, advance organizers, audio-visual aids, and pre- and post-tests. Gillard points out that

Learning in distance education is supervised but not invigilated, organized but not controlled, student-centered but not anarchic. The context ... is provided by the course, the unit, the program of study, the book, the study guide, but it is also capable of gesturing towards the situation of independent learners – whether they sit in classrooms or not. (p.194)

Because it has these characteristics, proponents like Evans, King, and Nunan (1993) maintain that distance education may even be a better way to facilitate critical thinking and reflection skills in students.

Gillard (1993), Kirby (1993), and Evans and Nation (1989) point out that the actual structure of distance education has a complex and changing effect in defining educational practise and experience. For Evans and Nation (1989), one new role of distance educators working with computerized technologies is to help students (a) learn how to navigate through the reams of information now available to them, (b) recognize and define knowledge and power, and (c) learn self -direction. These are all goals of critical thinking and critical reflection. Evans and Nation see technology and distance education as elements that incorporate human agency--rather than something imposed on the educational process--and distance learners are considered wilful participants in this process. Distance education technologies are becoming more accessible to students and faculty alike, and have the potential for as much or more dialogue and interaction as on-campus courses.

Setting the Context for Teaching Critical Thinking and Reflection at a Distance

As a concept, teaching critical thinking and critical reflection by distance seems very abstract and subjective, a situation which many educators find daunting. Such

teaching requires proactive institutional changes as well as changes in the professional practices of the educators.

Institutional Changes

Promoting critical thinking and critical reflection begins with institutional development because the abilities of faculty and staff to assist individuals are constrained by institutional demands and the availability of resources (Franklin, 1995). Bazillion and Braun (1992), Keast (1997), Naylor, Cowie, and Stevenson (1990), and Phillips (1995) point to necessary institutional changes such as providing (a) more support services for distance education students and faculty who need to upgrade their prerequisite skills, (b) greater access to library and media resources, (c) money and time for professional development to learn how to adapt critical teaching methods and various media to a distance delivery mode, and (d) money and time for course reconfiguration.

Caffarella (1994) advocates identifying program goals--such as the promotion of critical thinking and critical reflection--before starting. Naylor, Cowie, and Stevenson (1990) recommend that institutions provide the space and funding for correspondence feedback based on formative evaluation during the subsequent design of such courses and programs, and for interactive monitoring by both students and tutors.

Institutions define the setting for professional development and interaction that ultimately affects the student. Brookfield (1995) and Smith (1997) emphasize the need for more open and less censorious collaboration in teaching, noting that most institutions overemphasize the isolation of the individual teacher. Smith points out that teaching is not undervalued at the institutional level but it is treated "in a way which removes it from the

‘community of scholars’”(p. 4). Such a climate dissuades many teachers from assessing themselves or from even discussing teaching methods and strategies with colleagues. Brookfield advocates that institutions adopt a reward system for critically reflective teaching, possibly based on portfolios in which teachers assess themselves and their mistakes. Baiocco and DeWaters (1998) advocate that institutions recognize teaching excellence based on the character, knowledge, and actions of the instructors and the responses of students. Smith, and Cross and Steadman (1996) argue that the various stakeholders in higher education—including teachers—must work towards the professionalization of teaching by recognizing and promoting the scholarship of teaching. Such scholarship would promote the discovery, integration, and application of new ideas and strategies.

These recommended transformations of institutional structures can set the context for the promotion of critical thinking and critical reflection at all academic levels. Such institutional changes could provide a foundation for further development in the practice of distance educators.

Changes in Educators’ Practice

Brookfield (1986), Caffarella (1994), Knox and Associates (1989), and Wolcott (1995) all claim that the most important things educators can do to support the development of critical thinking and reflection in students is (a) model these behaviors, and (b) reflect on learners’ needs.

One way educators can model critical thinking and reflection is to critically evaluate their own professional practices. Caffarella (1994) and Vella (1994) point out

that a most important first step is to do an assessment of both program content and students' learning needs. Needs assessment is frequently advocated but it is also one of the least utilized tools in adult and continuing education, according to Galbraith, Sisco, and Guglielmino (1997). Galbraith et al. and Wlodkowski (1999) join Caffarella in noting that the implication of a needs assessment is too often a deficiency in either program or learners which might dissuade educators. The authors advocate focusing on interests and goals, as well as perceived needs, in deciding how to change educational content and practices.

Cline and Seibert (1993), and Caffarella (1994) see needs and interest assessments as involving at least three stages: close planning, gathering data, and the analysis of the data. Naylor, Cowie, and Stevenson (1990), Galbraith et al. (1997), and Caffarella have developed models of needs assessment that include gathering data from learners and educators through qualitative, open-ended questions that elicit more meaningful and critical assessments. Such needs and interest assessments are then used to develop course and program content.

Galbraith et al. (1997) also recommend the use of both learner and advisory groups in conducting needs and interest assessment. Pearce (1995) notes that educators, themselves, should contribute their own informal assessments that are based on their tacit knowledge and expertise. To determine whether their programs are of value, reflective educators begin by examining their own values and philosophies of instruction. They use their professional judgement and the program requirements to ascertain the reasons for

proceeding with the program and whether or not a further needs assessment will be necessary. If it is, they then turn to learners to construct a wider needs assessment.

Adult education research has found that students pose several needs in relation to learning critical thinking and critical reflection skills. For example, Franklin (1995) concludes that the individual student's background traits, level of interaction with faculty and peers, and quality of effort are crucial to perceived cognitive development. For Franklin, the educator's role in stimulating cognitive development is to encourage students to (a) focus on how to benefit from their college experience using their own skills, (b) evaluate their own learning and cognitive growth, (c) raise their low self-predictions, (d) immerse themselves in the college experience and its academic pursuits, and (e) recognize that they are ultimately responsible for their own learning and cognitive development.

Terenzini, Springer, Pascarella, and Nora (1995) discovered several factors in the development of critical thinking among on-campus students, including the joint effect of in-class factors, overall class climate and the instructor's behaviours; out-of class experiences; and the curriculum, volume, and interrelationship of the courses taken. In Terenzini et al.'s study, critical thinking was enhanced by the number of hours spent studying and the number of extra-curricular books read, both of which can be encouraged at a distance as well as on-campus. Critical thinking was negatively related to peer support, which tends to facilitate consensus building and which is more prevalent on-campus than in distance education courses.

For Brookfield (1986, 1992) and Haughey (1991), critical teaching entails (a) clearly explaining the activities to occur, (b) defining the general purposes of the field and the material, (c) formulating a viable set of criteria for judging the effectiveness of practitioner efforts, and (d) inviting students to exchange ideas on how to improve the course.

Distance educators must also look at how their own role as a distance educator is related to the overall structure of the course or program and how it affects student learning (Granger & Benke, 1995). Haughey (1991), and Baiocco and DeWaters (1998) point out that the role of the tutor is to pose questions and to encourage reflection among students by advocating more interaction with other students and critical reflection on the world at large. In contrast, Grasha (1996) emphasizes that students should be encouraged to work independently. He stresses the facilitator and delegator roles of teachers.

Baiocco and DeWaters (1998) note that university educators are rarely formally trained in how to teach but instead endure a “baptism by fire” in the traditional academic world. Critical reflection is an important tool in professional development for educators who benefit by examining their own tacit knowledge and premises of how the educational process should proceed. They also benefit by acknowledging their personal value systems which affect and are affected by the multiple responsibilities that accrue with the work (Brockett, 1988; Pearce, 1995; Pratt, 1992).

For Smythe (1989) and Brookfield (1995), reflection can only become active and reflexive when it enters the realm of social discourse. Educators who collaborate with others must learn to articulate, clarify, and confront their own values and meanings. This

clarification process can further transform their practice of teaching if reflection leads to reflexive action which shifts to questions beyond the best way to teach. Brookfield (1990, 1995) and Ewert (1994) argue that educators will understand the learning process and the concept of transformative learning better when they reflect on their own recent learning events. They can then use this knowledge to (a) ask good questions of students that stimulate reflection, and (b) help students articulate what they have discovered through their own observations and reflections.

Evans, King, and Nunan (1993) give an excellent example of why such discourse, critical reflection, and clarity are essential in collaborative projects in an adult education course on reflection that they had jointly constructed. In their example, Evans, King, and Nunan noted that the reflective exercises initially floundered because students were not given enough direction in how to derive meaning from their reflections and they were used to more prescriptive learning than was considered appropriate at the master's degree level. The roles of both the adult educator and the institution, then, are crucial in helping students develop critical thinking and critical reflection skills. Just as influential is the design of the distance education course.

Design Factors

The structure of distance education courses can widely vary and different design formats produce very different student outcomes. According to O'Reilly (1991), distance education by independent study is quite adaptable to the teaching of critical thinking and critical reflection processes. During independent study students usually create their own learning plans, complete with the resources they need, their modes of study, and the

methods of final assessment. He points out that independent study, however, contrasts with traditional distance education courses which are usually constituted from pre-packaged, modular-based and “closed” forms of education and evaluation of students.

O’Reilly describes how elements of independent study can be built into traditional courses, particularly around project work, student self-evaluation, and educators modeling critical reflection by reflecting on their own practices. A major part of this perspective evolves from the distinction between instructional design and constructive approaches.

Shifting From Instructional Design to Constructivist Approaches

For Wagner and McCoombs (1995), the challenge to distance educators is to switch from objectivist instructional design, where students simply follow linear directions to success, to a constructivist orientation, where there are varied perspectives on an issue. Learners then tailor their study by using their own experiences to interpret material and thereby construct their own knowledge. If needed, this can be done along with objective methods to demonstrate levels of competency.

In the instructional design tradition, Kelly (1990) and Dick (1995) explain that course creation begins with a needs assessment based on student characteristics, geographical distribution, projected class demand, and access to technology. Kelly and Schieman (1990) stress the importance of a good course outline. Baiocco and DeWaters (1998), and Burge and Roberts (1998) cite empirical studies where students learned best through instructional strategies that provide (a) the context of the field as a guide, (b) opportunities for students to rehearse and practice their knowledge, and (c) feedback to students through evaluation.

The transfer or adaptation of reflective and constructivist techniques to a distance mode of delivery often involves changing materials and materials production. Farnes (1993) and Raggatt (1993) both look at the production of distance education materials according to whether they incorporate “Fordist” (instructional design) or “post-Fordist (constructivist) methods. Fordist production incorporates instructional design methods that center on the quality of the materials and on controlling costs through labor management. Raggatt maintains that this approach works for long-term, core curricula courses but it does not provide distance education materials that respond to current professional and institutional demands in areas of high change and specialized needs.

For Raggatt (1993), post-Fordist methods emphasize “just-in-time” design, contracting out, and lower inventory costs in that less material is produced for a shorter term. These courses are more amenable to shorter production runs for specialized groups of students, demands for a wider variety of courses, and the incorporation of flexible automation (e.g., use of desk-top publishing). All designers and educators must undergo substantial training in the new technologies.

Farnes (1993) calls for an educational restructuring that draws on post-Fordist methods and the use of new technologies to support autonomous and flexible learning for everyone. Raggatt (1993) acknowledges that there is a mix of industrial design (Fordist) and constructivist (post-Fordist) approaches used in the design of high quality distance education courses at many universities. He argues that this mixed approach is viable if there continues to be a number of high volume, stable courses which “provide economies of scale through long production runs” (p. 30).

Combining Features of Both

The mixed production approach is now widely accepted as critical in the development of distance education courses. Indeed, some instructional design techniques, such as sequencing, are still crucial in teaching critical thinking and critical reflection skills (Duffy & Jones, 1995; Lahey, 1996; Winn, 1993). As Dick (1995) and Schieman (1990) point out, learners cannot think “critically” before they have been instructed in the requisite preliminary skills. However, qualitative constructivist research on how students experience sequencing, such as Taylor’s (1989) process model of self-directed learning and Duffy and Jones’ analysis of the rhythms of learning, have augmented instructional design by pointing out when students are in a disorienting, exploratory, or reflective and synthesis stages of learning.

Dick (1995) maintains that distance learners can incorporate non-linear constructivist practises and vary their progress if they wish. He cautions, however, that learners may actually be disadvantaged by constructivist design because they have little knowledge to start with in the field, although he does believe that learner input and instructors’ empathy with learners is important. Dick emphasizes that too much “creativity” in course production and delivery can actively obscure the information or the message. He concludes that the judicious use of some constructivist principles can be advantageous but instructional designers should meet the conditions for facilitating creative instruction by basing their designs on client criteria, providing a supportive climate for creative applications and participatory design, and implementing new technologies.

Despite the fact that instructional design techniques have proven useful to both students and instructors in distance education, standardization has often been considered antithetical to critical and reflective thought. For example, Juler (1990) points out that distance education learners are dependent and subordinate to the printed text, and there is a lack of student interaction to stimulate discourse with the course ideas and within the world at large. According to Juler, over-processed course materials, such as study guides and printed notes, can replace the essentially interactive act of note-taking which involves students even during a monologue. As he explains: "Distance education typically allocates little power or space to students to create their own discourses within a curriculum, therefore they may have little option but to conform to a substantial degree or fail" (p. 248).

Using a constructivist critique, Evans and Nation (1989), Smith (1987), and Jarvis (1985) maintain that texts signify power relations as well as educational knowledge and should be analyzed in terms of how they subordinate students and reproduce power relations between students and teachers. This power relationship is difficult to avoid because texts are the primary tools of the distance educator and a certain amount of teacher direction is unavoidable. Thus, Juler (1990) and Robinson (1994) caution that instructors must choose the course texts carefully and must look at the texts' ability to foster discourse instead of subordinating the student to the text ideas. Freeman (1991), James and Gardner (1995), and Berge (1996) focus on the texts and content in distance education courses, recommending small units, an easy-to-follow study guide, clear unit objectives, and provisions for practice and self-reflection.

Haughey (1991) and Jarvis (1985) critique the use of objectives in distance education materials. As they argue, objectives stem from a behaviorist approach to education and are tied to measurable levels of success; constructivists consider course objectives inadequate in promoting or measuring significant learning where the student is engaged with, and transformed by, his or her educational experiences. Objectives are purported to inhibit critical thought and interaction with the texts, either within or beyond the course. In this argument, objectives minimize discussion in their implicit assertion that only experts can speak.

To test this argument, Jegede, Wallington, and Nandu (1995) surveyed the use and expectations of course objectives among 297 Australian distance education students. They found that 50% of the students they surveyed always read the objectives and 61% used them at exam time. About 60% of the students used objectives as a guide or to measure their own understanding of the material; 45% considered objectives to be minimal expectations; 85% saw them as an outline of the content; 33% expected objectives to motivate them or to be used to evaluate own progress; 38% felt that the objectives enhanced their abilities; 61% wanted objectives at the beginning, middle, and end of the units; and 70% wanted objectives supplemented or replaced by other guides such as graphic organizers or concept maps. Among the same students, 93% expected objectives to state achievable goals and relate to the content of the course, 70% did not want to set their own objectives, and 83% felt that objectives were necessary. The longer students were enrolled in a course, the more they liked the objectives, which led the authors to

speculate that students become less self-directed and need more guidance as their program progresses.

Jegade et al. (1995) conclude that learning objectives are useful to students as a guide but they cannot measure the construction of learning and knowledge through discourse. They also found that isolated distance education students did not generally feel that objectives stimulated them to their fullest potential, but they did need guidance to be able to engage with the materials beyond a shallow understanding, particularly when they had other pursuits to follow and a minimum of time to devote to studying.

Educational objectives are still profoundly important in course development. However, Farr and Schaefer (1993) caution that objectives should be carefully matched to teaching methods and to the media being used in distance education delivery. They maintain that a mix of media and objectives is preferable for most distance education courses that seek to (a) transmit information, (b) teach procedures, (c) teach concepts and principles, and (d) develop appropriate values and attitudes.

Other constructivist strategies that provide a basis for facilitating critical and reflective thinking skills include James and Gardner's (1995) "diagnostic and prescriptive process to assign participants alternative tracks or instructional sequences" (pp. 28-29). Evans and Nation (1989) maintain that these strategies must involve greater collaboration through critical reflection. To this end, Potts (1998) suggests a type of student apprenticeship whereby students provide the visual aids or find the problem in a real life situation. Winn (1993) uses situated learning experiences to ensure that students construct authentic learning activities and knowledge within their own experiences and learning

situations--such as have historically occurred in university co-operative programs in engineering and sociology, which traditionally have used the techniques of anchored instruction and apprenticing students as experts.

To conclude this section, instructional design can be adapted to include student-centeredness and to progress from the rote memorization of the texts. The problem that distance educators face is how to go beyond the mere recognition of links between experience and critical analysis. In the following section, I look at the teaching methods that can be incorporated in distance education courses to this end.

Teaching Methods

Teaching methods can be as varied as the educators who use them. However, as Grasha (1996) notes, most university adult educators learn to teach primarily through observation. This observation is usually of the method of lecturing, which has long been considered the primary means for imparting knowledge at the university level. In this section, I consider teaching methods for live classrooms, whether and how these can be transferred to distance education, and the role of communications technologies in widening the scope of teaching methods available to distance educators.

Classroom Methods for Teaching Critical Thinking and Reflection

Most literature on the practical application of teaching critical thinking and critical reflection focuses on classroom and small group techniques (e.g., Brookfield 1986, 1990, 1995; Shor 1980). Cross and Steadman (1996) and Brookfield (1992) discuss cognitive teaching strategies that focus on generative study skills (learning how to generate

questions or summarize lectures), rehearsal and elaboration techniques, organization, comprehension monitoring, and resource management.

Brookfield (1992) stimulates reflective thought in students by having them progress from a scenario analysis, through modified role reversal, taking the opposing view to research and debate, crisis decision simulations, to the critical incidents exercise. Underbakke et al. (1993) and Potts (1998) similarly advocate having students solve interpersonal problems by understanding and assuming the perspectives of the other, by identifying the source of conflict and considering solutions, and by negotiating compromise.

As part of their nested model of instruction, Fogarty and McTighe (1993) inventory critical thinking and critical reflection skills, as does Ennis (1993) who generates an “interdependent list of abilities and dispositions [which] can provide some specificity for guiding critical thinking testing” (p. 180). The critical thinking inventories of these professors include: evaluating sources, experiments, and arguments; classifying and prioritizing; comparing and clarifying issues and events; drawing conclusions; and identifying assumptions and biases.

Another example of the basic principles of teaching critical thinking and reflection can be found in Underbakke et al. (1993). They maintain that student verbalization of variables, hypotheses, why tests should be conducted in a certain manner, and the problem-solving process increases student flexibility (using the methods of critical thinking across disciplines) and student awareness (the ability to monitor one’s own thinking processes, handle the material, and work within one’s capability). Underbakke et al.

advocate having students develop hypotheses; assess arguments and research data; and engage in probabilistic thinking, whereby they must predict an outcome based on partial information. Students need to recognize what information is lacking, how to get it or whether it will ever be available, and whether a prediction can be made.

The teacher's role is important here. The ideal role of adult educators for Cruikshank (1995) and Pietrykowski (1996) is to promote critical thinking and critical reflection by assisting students to see how a body of knowledge produces power relations. Smith (1987) explains that educators can help learners deconstruct knowledge by developing critical skills in media and consumer literacy, or by revealing the implications of male-biased discourse and power in the lives of learners and practitioners. For Daloz (1999), the teacher's role should be one of mentor who assists students in developing their critically reflective thinking skills. For Savery and Duffy (1995), the teacher role models metacognitive thinking by asking probing questions, challenging student thinking, asking for clarification and its implications, and so on.

To promote critical thinking, Winn (1993) directs educators to (a) teach transferable knowledge and skills, (b) pay attention to teaching skills that cut across problem-solving situations and develop inferential reasoning, and (c) design materials for metacognitive skills and flexibility so that instruction can change as needed and learners can construct their own learning situations. He advocates a compromise between instructional design techniques and situated learning principles, whereby students bring real-life situations into the classroom.

Building a class climate for thoughtfulness involves developing a framework for teaching and applying critical thinking and critical reflection skills in teaching (Brookfield, 1990; Fogarty & McTighe, 1993). This entails that instructors facilitate and role model learning in a transactional manner and that they avoid simply acting as a transmitter of knowledge (Larisey, 1994). They must identify and use critical thinking and critical reflection skills while teaching curricula content if students are to truly learn these skills (Brookfield; Underbakke et al., 1993). Cyrs (1997) maintains that these techniques are not easily transferred to distance education course planning or delivery, especially with demands for the use of new technologies, but at least some of the basic principles of this teaching can form a foundation for developing new techniques.

Problems With Transferring These Methods to Distance Formats

In transforming classroom techniques to distance education, Halpern and Associates (1994), Potts (1998), and Cyrs (1997) look at teaching distance learners how to be more critical, effective, and able to assess their own learning through the traditional methods of inquiry and questioning, problem-solving, and co-operative learning. In the constructivist tradition of having students reflect on their own dilemmas to encourage critical thinking and reflection, Brookfield (1995) suggests the use of autobiographies, learning journals, the critical incident questionnaire, evaluations from the students' perspectives, and critical conversations, which can all be adapted on a practical level in distance education.

Bazillion and Braun (1992) brought students "back to the basics" of critical thinking in their very successful field test of a bibliographic instruction program. They

gave students directives on how to (a) do library research at a distance, (b) interpret bibliographic data, (c) critically evaluate materials, (d) ask the right questions at the right time, and (e) expand or narrow a search to develop a research focus. Modra (1989) similarly drew on the basics in her distance education course by having students do reading logs which were assessed according to the breadth of reading, clarity of comments, and level of critical thought demonstrated. This is a disciplined exercise requiring external reading and linkage to the course content.

Evans, King, and Nunan (1993) maintain that it is essential to give distance education students the opportunity to reflect on ideas on their own. Evans et al. believe that including a critical paradigm in the course material can induce critical reflection by providing the ideas the students need to embark:

If we see research and inquiry as important elements of the critical process, then by enabling students to develop and implement their own research, and to review critically their work and that of others, we are helping them increase their critical skills. (p. 43)

However, Nation (1989) maintains that critical reflection is not engendered simply by reading information about the process. He discusses his use of personal reflections to stimulate discussion and student reflection in an introductory sociology course delivered by distance. Nation began by linking his experiences to the introductory sociology concepts he was trying to teach. These linkages provided a format for an autobiographical assignment that Nation later had his students undertake. He then encouraged them to “step back from the data” of personal experiences to analyze the subject through reflection.

Similarly, Modra (1989) used journal-writing with her distance education students both to stimulate reflection and to track its development in students over the duration of the course delivery:

The *journal* was to be a structured assemblage of comment and criticism on subject-related readings, events, media items, thoughts, conversations, and the like.... Journal criteria emphasized the need for the student to reflect on material encountered and to make links from it to subject-related concerns. (pp. 128-129)

Modra notes problems for educators in avoiding prescriptive directives and, alternatively, being too vague; awarding grades; and dealing with the anxiety that journal-writing evokes in students who are traditionally trained in “banking concepts” (p. 132).

As these examples show, some teaching methods developed for in-class use can be adapted in distance education courses, but many more need substantial revision before they can work in distance education. This is especially true for correspondence courses and programs (Burge and Roberts, 1998; Cyrs, 1997; Evans, King, & Nunan, 1993). To repeat a previous point, successful distance education teaching demands more than simply transferring techniques from the classroom. Advocates emphasize that the distance teacher’s role is partly determined by the available communications, and these are improving substantially with new technology. The next subsection focuses on how communications and other teaching devices might facilitate the teaching of critical thinking and critical reflection.

Using Communication Technologies

Burge (1998), Cyrs (1997), Harry, John, and Keegan (1993), James and Gardner (1995), and Wagner (1997) believe that the more interactive the communications between

distance education students and instructors, the more successful the teaching, particularly in relation to critical thinking and reflection skills. For James and Gardner, personal communications further enhance distance education course design in the affective mode. They recommend that instructors: (a) use an informal, empathetic style; (b) give students choices about content and process; (c) acknowledge different cultural views and backgrounds; (d) establish regular contact, as if the students are nearby; and (e) recognize the protocols of emailing, such as giving students as much information on message style and expectations as possible. Baiocco and DeWaters (1998) point out that motivational teachers often use communication techniques such as personalizing instruction and trying to associate the relevance of the material to student experiences.

An important issue in the use of computerized communications to stimulate critical reflection in students is the extent to which instructors set the intellectual climate of the course. According to Mason (1991) and Berge (1996), instructors should provide leadership by submitting helpful critiques to students on their work, maintaining flexibility throughout the course, and encouraging student participation at every turn. They must also role model professionalism and intellectualism by asking probing questions, focusing discussion, synthesizing points, and weaving together student submissions into viable themes or threads for the course content.

Haughey (1991), May (1995), and Modra (1989) focus specifically on communication techniques that can be successfully used to stimulate reflection and critique in individual students. May, for example, rediscovered the value of letter-writing when communicating with distance students; she found that writing letters was an

excellent means of self-development, empowerment, and transformational learning as the students reviewed the progress of their professional development. They also developed problem-solving techniques, self reflection, a variety of communication skills, and methods of linking theory to their daily practises. Similarly, Haughey stimulated dialogue with, and among, students by making them responsible for commentary on the course and for submitting and commenting on each other's work in a newsletter.

One of the oldest problems in distance education is the time-lag in getting feedback out to students. Minoli (1996) considers technology to be a saving grace in overcoming this lack of immediacy by promoting interactive distance learning, where students can pose questions for immediate response.

Minoli and Wagner (1997) believe that interactive services among students and between students and the instructor facilitates critical thinking and reflection. However, Wagner cautions that interactivity is not synonymous with interaction. Interactivity focuses on the ability of the technology to help in the realization of course goals and objectives. Interaction is still dependent on teaching methods and styles. Pineas (1998) similarly warns that the forms of collaborative learning should be carefully constructed when used in distance education. She distinguishes between co-operative and collaborative work: co-operative work requires a certain amount of student dependency on each other, which can be quite frustrating for diligent students, especially when grades are at stake. Collaborative work necessitates on-line or email interaction, but each student prepares and is marked on his or her individual effort. These efforts are then collated to provide emphasis, embellishment, and supplementals to the course material. Generally,

collaborative exercises are more time-bounded and restricted to smaller segments of information, which distance students sometimes prefer to an open time frame at their own (and their group mates') discretion.

Another benefit of interactive distance learning with computerized communications is that these improve access to Internet sites and databases for student research. Schieman (1990) sees the potential of this to enhance instruction in critical thinking and reflective skills by going beyond the traditional question-answer mode; he notes that "in more sophisticated systems, questions can be used by the learner in an information-gathering way to locate needed and possibly crucial information. The learner should have the means to command the system to locate this information" (p. 73). By "means to command the system," Schieman implies access to knowledge, and remote distance education students have long experienced the problem of inadequate access to library services and materials. Bazillion and Braun (1992) note that this often dissuades distance education instructors from including a research component in their courses and they recommend the use of computerized library catalogues and library network catalogues (which extend access to other libraries and databases).

Rosen (1996) points out that the Internet is now used for research, course delivery, communications, and even for "improving reading and writing skills, ... publishing, and in many cases, for a window on the world outside (of the students') communities" (15). Through these means, some traditional classroom-based exercises are adaptable, and even enhanced, by new forms of computerized communications by allowing group work and greater access to a wider resource base than ever before (Hooley &

Ginsberg, 1996). Even those students without access can benefit from the research and ensuing forms of teaching that is coming out of this area.

Despite these promising hopes for computerized technologies in addressing the learning needs of distance education students, it is still advisable to proceed slowly, because technology is never infallible and there is still the problem of students' and educators' access to—and proficiency with—the technology (Keast, 1997). Moreover, not all distance education students may benefit from the same course format. A mixed approach to distance education course development and teaching, which produces several configurations that students can choose from, is preferable (Burge and Roberts, 1998; Cyr, 1997). Educators who have been working with computerized technologies for the past decade and more, endorse a mixed offering of course and project configurations for students. This allows them the flexibility to address the differing learning needs that each student has, as well as students' varying levels of access and proficiency with current technologies, while still maintaining the core objectives of teaching. In the next section, I consider how to evaluate students on how well they have learned critical thinking and critical reflection processes and how to judge whether a particular course structure can facilitate such learning.

Evaluating the Learning of Critical Thinking and Reflection

Just as the adult education prescriptions for course development have changed with evolving ideas, so too has the evaluation of students. Davie (1987) points out that this evaluation progressed from criterion-referenced testing and the decontextualized quantitative measurement of skills in the 1960s, to the evaluation of students' descriptions

of their learning in the 1970s. Students were asked to construct their own learning goals in the 1980s, and by the 1990s evaluation involved the “description of different agendas” (Davie, p. 205) and sensitizing learners to the needs of other stakeholders and to issues of power in the educational process. Such contextualized evaluation, also known as responsive or naturalistic evaluation, is a synthesis of both quantitative and qualitative assessments.

Problems With Criterion-Referenced Testing

In reviewing evaluation methods in the field, one of the most striking facts is that criterion-referenced testing that is oriented to standards of performance in lower-order cognitive skills has been used to evaluate critical thinking and critical reflection since the 1960s via quantitative critical thinking assessment tests (Biggs, 1995). These tests provide questionable results. Ennis (1993) lists their advantages as providing: diagnosis and feedback to students; motivation; a selection process; institutional accountability; and research into critical thinking. The drawbacks include, but are not limited to: the inherent cultural biases; the fact that results are expected in too short a time period; and the lack of breadth in these tests with regard to actual critical thinking skills, making them inadequate as selection tools. According to Ennis, there are few subject-specific tests, and copies of the tests are universally available, which implies that students can study for them.

Assessing the qualitative development of critical thinking and critical reflection in students against common criterion-referenced standards usually occurs in a decontextualized learning environment such as the university. Biggs (1995) points out that this evaluation of students can include an integration of quantitative testing, which

primarily measures lower-order levels of learning, but it should also include qualitative testing, which measures higher orders of learning. Evaluation at the lower levels of cognition begins with unistructural testing on bits of isolated information and multi-structural testing where two or more bits of information are tested but without any relationship drawn between them. Evaluating higher order levels of cognition, like critical thinking and critical reflection, involves relating two or more bits of information to an integrated understanding of the whole and applying abstract principles derived from the learning to other contexts.

Several writers critique the traditional forms of testing as “multiple-guess” and “perform-on-the-spot” testing. Reif (1995) maintains that these inadequately measure learning, produce student anxiety, and rarely go beyond the first three levels of Bloom’s taxonomy--knowing, comprehending, application--to the higher order levels of analysis, synthesizing, and evaluation. Reif recommends providing students with (a) clear written directions and an indication of how the assessment will be graded at the beginning of the course, (b) the necessary time to complete the assessment and for the instructor to mark it, and (c) variety in the forms of assessment used, keeping the students’ other workloads in mind.

Reif (1995), Ennis (1993), and Beale (1993) all advocate combining various test items in instructor-made tests. For example, testing the memorization of facts is best done through multiple choices or by requiring a one-word or one-theme reply. In restricted answer, short essays students are required to analyse relationships, and they must engage in reflection in open-ended essays. Performance assessment is critical in ensuring that

students can actually apply what they have learned: testing can involve real or simulated performance situations, student portfolios, journals, audio/video tapes, and collaborative projects.

Contextualized Assessment

According to Ennis (1993), the most comprehensive evaluation method for critical thinking skills is essay assessment, but it is only viable on a small scale. This is because it is time-consuming to mark and educators usually are limited in how much time they can devote to each student's essay. Essay assessment can take at least three forms. The first is the highly structured essay which presents an argument with numbered paragraphs and a series of errors. Students evaluate each passage individually, as well as the whole. The second form is the medium-structured essay where students are presented with an argument to debate, but no particular organization of the response is demanded. The third type of essay with minimal structure is that which simply poses a question or an issue to students for their response. Cross and Steadman (1996) note that evaluation questions that encourage critical thinking incorporate such stems as "What are the strengths and weaknesses of...?", "What is the difference between...?", "Explain why (or how)...", "What would happen if...?", "What is a new example of...?", "What is the counter-argument for...?" (pp. 156-159)

For larger classes, Ennis (1993) recommends devising a multiple choice assessment with a written justification approach—students have to give a brief statement of why they selected the item they did. This overrides the cultural bias in testing and the lack of

refinement often inherent in multiple choice questions. In addition, it can be quick and comprehensive.

Norris' (1995) research supports Ennis' argument that the format of the test, such as multiple choice or constructed response testing, does not make the test any more or less reliable for measuring critical thinking skills. However, he does recommend the inclusion of a narrative--which is accessible to anyone who can read--and a credibility judgement in tests. Being able to judge the credibility of one's sources according to acceptable criteria is one of the crucial skills in critical thinking in an academic context.

Biggs (1995) also recommends a deep approach with criterion-referenced and qualitative evaluation that accounts for the decontextualized or situated context of learning. For Biggs and other constructivists (McLellan, 1993; Mezirow, 1991), situated learning is essential to the application of knowledge. They argue that the evaluation of such learning is best applied in ever-widening and interconnected feedback loops throughout all of the learning process. Constructivists decry decontextualized learning and evaluation, believing that students only learn when they are grounded in the context where they can eventually apply their knowledge.

One way to assess students in the context of their learning, according to Larisey (1994), is to use students' self-assessment as both a learning tool and a learning strategy. McLellan (1993) advocates on-going evaluation on multiple levels, including: the production of diagnostic tests for critical thinking and critical reflection skills; portfolio evaluation, in which students trace and reflectively assess their productive and professional development; computer-simulated apprenticeships; story construction; and the process of

having learners design instruction for imaginary other students of the future. Most of these evaluation methods for situated assessment involve extensive time and effort on the part of both student and instructor.

From this reading, I have found that both decontextualized and situated learning assessments are of value in determining to what extent, and how well, students have developed critical thinking and critically reflective skills, though one assumes that the situated assessments would be the superior of the two because the student is being tested in the situation in which he or she will practice. Nonetheless, given that the teaching of these thinking skills must progress from the basic levels to the complex, so must one's evaluation schemes.

Summary

My goal for this chapter was to review the literature relating to teaching critical thinking and reflection in adult and distance education. I began by looking at the historic role of critical thinking and reflection as tools for social change in two of the foundational movements of adult education. I briefly touched on how this ideal continues among adult and university educators today and I then reviewed some of the effects of globalization for university distance education and for facilitating critical reflection and thought. I looked at the debate over whether critical thinking and reflection can be taught in distance education. Believing that these skills are teachable in distance education courses, I reviewed the influence of course structures and production methods on this teaching. To this end, I discussed the use of both instructional design and constructivist techniques in distance education course production. Next, I reviewed the relevant methods for teaching

critical thinking and reflective skills in live classrooms and considered whether these could be transformed for the distance education context. I also appraised a few methods that have been solely devised for the distance education context, with a focus on the area of computerized communications. Finally, I delineated some of the methods of student evaluation that best assess--and in themselves--promote critical thinking and critical reflection.

I found valuable insights from the literature on both sides of the instructional design and constructivist debate in relation to teaching critical thinking and reflection. Nevertheless, I also found that there is a need for more research into the application of teaching and evaluation methods for critical thinking and reflection skills in distance education courses.

To conclude, I return to my two most pressing questions when I began this review. The first was whether or not the struggle to teach critical thinking and reflection skills in university distance education courses is in vain. To this, I answer "no"--such teaching need not be restricted by distance education delivery. With careful reflection, it can actually be enriched by many of the new modes of course delivery now offered.

My second question was on the desirability of teaching critical thinking and reflection skills in distance education. My answer to this is a "yes," especially in light of the burgeoning development of distance education in university settings and of cost-cutting measures on-campus which leave many students seeking courses by distance.

CHAPTER 3

A CASE STUDY OF HOW TO BETTER FACILITATE CRITICAL THINKING AND REFLECTION IN DISTANCE EDUCATION STUDENTS

As noted in chapter 1, my goal for this case study was to methodically revise and improve my distance education course, “Anthropology and Sociology of Families”, so that I could better facilitate critical thinking and reflection in both my own and my students’ practice. Using extensive formative needs assessments, I made several changes to my course in the latter half of 1999 and evaluated these changes in the winter semester of 2000. This work constituted a case study in facilitating critical thinking and reflection in distance education.

The course “Anthropology and Sociology of Families” was originally designed as a correspondence course that was divided into 12 units for self-study. Students were sent a list of texts to buy, directions on where to get these, and a manual that guided them through the material. Communications were to be initiated by the students: Whenever needed, they would telephone me during specific office hours. They were tested through two exams worth 50% each, which were sent out to specific sites and invigilators across the province. There was a general evaluation option to do a term paper and have these two exams re-weighted. However, few students took up this option. The content was designed to first introduce students to anthropological research into family life around the world, and then to expose them to sociological research. I found that many students were trying to get through the material by memorization, which defeated my teaching purpose. I wanted to change this structure so that students were better able to critically evaluate

this research, look at how it is transferable across disciplines, and compare it to their own assumptions about family life.

This chapter is divided into four sections. In the first, I summarize the findings of my students' needs assessments conducted during the first year and a half of this case study. In the second, I look at faculty needs assessments related to distance education courses in my department. In the third section, I review the changes implemented in my distance education course on the basis of this needs assessment. Most of these revisions were made to the course manual during the summer and fall of 1999, but some also deal with changes I initiated in my instructional process (e.g., course sequencing, feedback, interaction). I focus specifically on the changes that are intended to facilitate critical thinking in students. Finally, in the fourth section, I give a brief summary of the course revisions and the evaluation of these from my observations and reflections.

Students' Needs Assessments

For the case study, I used three sources for students' needs assessments. One source was my collection of voluntary responses to unit and manual evaluation questions inserted into the course manual and returned by a minority of self-selected students over the years of my teaching. For the second source, I collated the results of summative evaluation questionnaires sent out to students in the course almost every semester from Fall 1993 to Winter 1998. For the third source, I included an optional learning journal exercise in the course offerings, which consisted of a three page structured questionnaire to be filled in weekly and a three page midterm and five page final evaluation to be completed at the appropriate times of the semester. In analyzing the results, I integrated all

three sources; I also categorized responses into readings, sequencing, instructions and objectives, identifying and using critical thinking, feedback, and evaluation.

Process for Assessing the Needs

My first source, the manual insert questionnaire, consisted of five open-ended questions on what students liked most and least about the course to that point, and the changes, if any, that they would recommend. Few students actually responded, however. I would often get only 1 or 2 out of a possible 50 students sending their sheets in during any one semester.

The summative evaluation questionnaires were two pages long and contained both quantitative and qualitative questions. Returning it was completely optional to students. Students were informed by the distance education department at my university that I would be given the results of these summative evaluation questionnaires only after their marks for the course had gone to the registrar. The questions included ranking the instruction and course materials on a variety of criteria as well as open-ended queries of what was liked and not liked about these and the logistical aspects of the course. Typically, 3 to 5 questionnaires out of a possible 50 were returned each semester. For this study, collecting these summative evaluation questionnaires and manual insert questionnaires was particularly useful in identifying students' overall concerns about the course and in determining how (or whether) the course needed to be changed to meet these concerns.

The learning journal exercise was completed by 14 self-selected "Anthropology and Sociology of Families" students during the fall semester of 1997 and the winter

semester of 1998. This learning journal exercise included extensive evaluations and critical questions of the 12 units of the manual. I constructed this learning journal exercise on the basis of (a) Brookfield's (1990) suggestions for assignments that facilitate critical thinking, (b) the reading on needs assessment completed for my Master of Adult Education literature review, (c) Grotelueschen's (1976) matrixes of evaluation questions to verify whether (and why) each question should be included and (d) advice from two colleagues working in the local community college as librarian and psychology instructor, as well as from my master's degree thesis supervisor. Students who chose this optional learning journal exercise were fully informed of the use that I would make of their evaluations in this study. Students did one learning journal exercise per week for each unit of the manual, as well as a midterm and a final evaluation of the manual, the course, the exams, and my instruction. I sent out these materials along with a letter explaining the study only after they telephoned to inform me of their choice of this option. The questions included both ranking and open-ended queries on a variety of material, instruction, and process criteria for the past week's work.

In addition to the incredibly rich material gleaned for this case study through an analysis of these learning journals, I was also able to identify the extent to which students were merely repeating memorized material or were thinking critically. I found that few students engaged in a critical evaluation of the material at the beginning of the course but had begun to do so by the middle of the term. This learning journals exercise proved to be an excellent stimulus in this regard and one which I intend to use again. In the following

sub-sections, I discuss the major findings of my students' needs analysis grouped by the categories I identified.

Readings

When asked what needed to be changed in the “Anthropology and Sociology of Families” course, most students in the manual inserts, the summative evaluation questionnaires, and the learning journal exercises complained of the heavy course load. During a professional development workshop I attended, a colleague noted that it is not uncommon for distance education students to complain of heavy workloads since it seems to him that they get more work as distance education students than on-campus students get. He attributed this to overly zealous distance educators. I, however, actually assigned less reading than did instructors in the equivalent on-campus courses. This led me to speculate that distance education courses may sometimes be considered “easier” than those on campus and complaints occur when one attempts to maintain the “on-campus” standards. In any case, a majority of students in both the summative evaluation questionnaires and the learning journal exercises wanted a redistribution of the reading over the course of the semester. Most students liked the anthropological reading in the first half of the course and several found it the most interesting part, but they still felt that there was too much of it. They preferred the second half simply because the pace was a bit slower.

Three students also wanted a change of textbooks. Textual complexity on an academic level does not always please students. Over my 12 years of teaching, five or six students have asked me if they can get away with just reading the manual, which I never

considered to be a valid reflection on the academic content of the course. However, almost all of the students who responded to the summative evaluation questionnaires and learning journal exercises found the manual content and course materials academically effective. Most students liked the different ethnographies and the provincially based novels that I occasionally assigned but several complained about the local anthology of writings that I used prior to this study. They were usually upset with the feminist tone of the work. One student requested that I provide summaries of the articles in the course manual, which I had to reject because such summaries are all that some students will read.

I also had to carefully evaluate the complaints of those few students who disliked the ethnography, *The House of Lim* (Wolf, 1968), because it had foreign names. In fact, it was one of the readings that I retained in the revised course because of its academic rigor and relevance to my course goals: It provides an excellent and detailed overview of family life in that culture and time. It also contains a family tree that students could use as a visual organizer during their reading to follow the characters.

Sequencing

The sequencing of readings and ideas is important in teaching critical thinking skills because students come into a course at varying levels of expertise--particularly in the early years of undergraduate work. The tried and true methods still hold: Students need time to process ideas and a sequence that progresses from the basics of comprehension to analysis. In the summative evaluation questionnaires of the course, 94.5% of the students over my 10 years of teaching at that point chose the response, "The course was well organized." One student summed up this sentiment nicely in the learning journal exercises:

Overall, I feel the course was well organized and I would actually recommend that it not be reorganized. Everything is well laid out and flows very good together. Most of the time the units followed each other and had some meaning from the unit before. And if not it was a meaningful chapter on its own.

These sentiments gave me pause to reflect on whether I should continue to re-organize the course topics to have students do more cross-cultural comparisons (in a critical thinking mode). Consequently, I was very careful to maintain a consistent flow between topics and to ensure that each unit could still stand alone if any one student chose to vary his or her study sequence.

Instructions and Objectives

Few students who evaluated the course complained of problems with the instructions given in the manual or in the course hand-outs that I regularly sent out. In the summative evaluation questionnaires reviews for the course, 96.1% chose the option, “The instructor made it clear what was expected of me at the beginning of the course.”

Another form of instruction that is integral to distance education course work is the written objectives for both the overall course and the individual units. When asked in the learning journal exercises how they used the unit objectives, most respondents said they were useful as a guide to the reading and to review points. When asked if the objectives stimulated them academically, most responded with comments that expressed perspectives similar to that of the following student’s very comprehensive comment:

99% of the objectives gave me a better understanding of the unit and the course which helped me achieve my fullest academic potential. But I do feel that about 1% of the objectives were difficult to understand and/or relate to the readings and material. This became very frustrating at times and very difficult. This could be improved by making sure that the objectives relate directly to the readings and making sure that they clear in reading, so the reader can know what is wanted.

One student had problems in interpreting the objectives. The objectives for the course had been developed unsystematically over the early years of my teaching, and it showed in the mixed responses of students in this course. Four responded that objectives should be more specific and shorter. One very articulate student offered a note of caution with regard to how objectives are presented to students:

Objectives stimulated me academically in helping me achieve my fullest goals although I often found myself reading through the material and attempting to “find” the objectives rather than “enjoying” the material. I do not feel that this requires any improvement from your point of view but from mine. I should have used the objectives as a guide for my reading rather than a “road map” to reach the end of each chapter. I may have relied too heavily upon them and lost some of my own “potential”. In the future you might want to suggest to students that they are merely a guide as I feel that it would be a shame for them not to enjoy the material. The text material was very intriguing and interesting; students should come to see this and would allow them to achieve their fullest!

Following the same thread of questioning on the midterm learning journal exercise, I asked students whether they preferred cognitive maps or other graphic organizers of the ideas instead of, or in addition to, the objectives. All but one of the respondents said yes, and two identified themselves as visual learners. For example, one student claimed: “When I can see something laid out simply and organized, it is easier for me to grasp.” Others mentioned that graphics of various kinds (maps, planners, organizers) piqued their interest. Still others used them as study aids which helped them to visualize all of the material needed at exam time. The one student who did not want such graphics commented: “Trying to plot the issues on a cognitive map would only provide a basis for memorization instead of an understanding of the issues presented.” From these points, I concluded that

when the goal of critical thinking is paramount, the course developer should avoid over-processing the course materials.

To address the question of whether or not my course fulfilled various students' learning styles¹, I asked those students doing the learning journal exercises: "Has this course met your expectations?", and "Has it led to any improvement in your academic performance?" Most answered "yes" to both questions, elaborating that it helped them develop critical thinking skills, scheduling, self-motivation, and the ability to ask challenging questions and to visualize links with other courses they were doing.

In answer to a subsequent question, 12 of the 14 respondents gave extensive descriptions of how useful they found the material and how they were able to use the course ideas outside of the course. Several noted their increased empathy for the Innu and many made comments such as:

It was interesting to see how (people in) other cultures interact with each other. I used to think of some customs like women covering their faces ridiculous, but they have great reasons for everything.

I was able to place my own family situation into one of the many patterns of families presented. This reflection assisted me into understanding the material and the fact that every family is the same and different all at the same time. A tradition in one family may not be a tradition in another family.

These students provided me with assurance that the course is helpful in developing cross-cultural awareness (an aspect of critical thinking) and that the ethnographies were immanently valuable. In my experience, educators too often only pay attention or hear the

¹I realize that only certain students, possibly with some element of an accommodation learning style (to use Kolb's [1981] terminology), would likely volunteer to have themselves partially evaluated through learning journals. However, I assumed that they likely had elements of other learning styles as well.

complaints of the few while overlooking the very real benefits our work imparts to the others.

On the issue of the relevance of the course in their daily lives, only 1 of the 14 respondents to the learning journal exercises said the course was not relevant at all and was upset at “having to do so much on these assignments.” All of the others gave extensive details of how the course benefitted them and I was particularly touched by one student’s reply:

I think that the information and course content will be very relevant to my daily life and in my future life, because it has already helped me to make some very important decisions of my life. I have decided not to start a family right now and wait until I finish my education.

Most respondents to the learning journal exercises found the course readings, self-tests, and assignments academically challenging and useful in terms of training them in certain skills, which I had begun to articulate when offering the alternative evaluation schemes.

Identifying and Using Critical Thinking

In the final learning journal exercise, I defined critical thinking as “being able to relate abstract ideas to external processes, reflect on these, and develop new concepts or meanings from such reflection and from a discourse with others.” I then asked the students three questions. The first was, “How well did this course help you to develop these skills?” All of the respondents said the course helped them quite a bit, especially in terms of critiquing government policies and ideologies about “functional families” and in relating abstract theories to their own realities. Two students, however, were conditional on this

point: Like the person who made the following comment, they responded that critical thinking is something acquired over time, and it needs to be used to be effective.

The course was well organized to help me develop these skills, although I often find it difficult to relate “theories” to real thing (this is a major learning block for me). I find it easier to “talk out” a lot of issues and this is for me a major problem in distance education courses. But actually the learning journals, where there is room for discussion, is a nice possibility to resolve this problem. I did find myself looking for some of the issues we have discussed and in some instances trying to relate them. The lack of this is more of my problem than one in the course--I'm not sure if maybe an exercise on critical thinking at the beginning would be helpful. Maybe something that you could ask students to return at the beginning of classes.

My second question was, “How might the course be changed to better reflect this definition of critical thinking?” Almost all of the students said not to change it, though one wanted more specific directives, two suggested putting more questions that stimulate critical thinking in the self-tests, and one reviewed the problem of discourse in a distance education course, noting that it is often a matter of the individual student’s discretion:

Distance education courses are by nature an individualistic form of study. It is difficult to promote discourse with others although the department certainly offers ways of connecting with other students. I think it goes back to the motivation level of the student to really read and understand the material and to think about the issues in different ways even by themselves. I went into the course knowing I'd be studying on my own, this is probably a common notion among distance education students.

My third question was “Do you think [that helping students develop critical thinking skills] is a desirable goal in a distance education course?” Again, I received a “Yes” from all but one student in both of the semesters that these learning journal exercises were done. They saw a need for developing critical thinking and reflection skills in university courses where students must go beyond rote memorization. “Absolutely—it is only through ‘critical thinking’ that we can be ‘educated’ in the broadest sense.” The

student who thought critical thinking was not desirable felt that it “would make the course too hard. Some critical thinking would be okay--but not too much.” I speculate that this response illustrates the unfortunate problem of the few to plead for leniency when students are asked to evaluate a course.

From most of these responses, then, I realized that I already had inadvertently been facilitating the development of critical thinking skills in students. My future task was to articulate and clarify this teaching as my goal for students. To this end, I looked at the feedback I gave students over the first 10 years of my teaching and at the needed changes that they identified.

Feedback

Feedback is critical to students' skill development throughout a semester, so students doing both the summative evaluation questionnaires and the learning journal exercises for the course were asked to rate the usefulness of the (a) first memo, which gave out details on consultation, alternative evaluation schemes and exercises, and a reduced study guide for the midterm exam; (b) the second memo, with the midterm exam answer sheet and class distribution, and the set of study objectives for the final exam; (c) the feedback on the midterm exam and alternative assignments; (d) my comments during our phone calls; and (e) the feedback completing the learning journal assessment sheets. In later phases of the study I inaugurated a computerized Listserv for the course where I publically answered student questions on the material and on the exams. Generally, I have since found that about 25% of the class is on the Listserv before the midterm, but this often jumps to 40% or 50% after. I think this is because I send my feedback to specific

questions on the course content to the entire Listserv and students discuss this before and after the exam.

Invariably, all of the respondents in both the summative evaluation questionnaires and the learning journal exercises gave very good reports on the feedback I gave, though one complained that he misunderstood the instructions. My favorite sample of the positive reports is from the learning journal exercise:

I thought that all of the above were very useful. I can't think of any ways to improve feedback. The instructor has covered all the necessary ways especially in her memos and the comments on the midterm, even though I failed the midterm, her comments has helped me to study more and stick with it, so I could pass. She gives some encouragement and this has helped me.

One Listserv student who used email extensively as her form of communication sent me this unsolicited message:

Dear Linda: A few comments and then a few questions. I really appreciate your notes on my mid-term. It helps a lot! I've never seen such thoroughness to assist a student. This is only my 2nd distance course and I'm convinced it is comparable to in class instruction. You've been in contact via email, and at a more "personal" level, on a consistent basis. It's like a personal visit from my prof! Now, if only more students would correspond in a "like" manner...

Amidst the positive comments, however, one student provided a useful critique which I have since kept in mind;

Constructive criticisms might also be of use to me. Providing only the positive may make me feel overconfident! I realize that I do not know everything relevant to the course and have found in the past that both positive and negative comments give me that extra boost. Negative comments are essential to learning as they sometimes provide a new focal point and keep me on track and are often useful as a guide!

Reading these and other students' comments has led me to a new appreciation of how important it is to provide criticism that is fair and useful to students and that encourages them to keep trying.

Evaluation

The final aspect of the needs analysis for this case study concerned my evaluation of student work. In their summative evaluation questionnaires over the 10 years of my teaching, 95.6% of the students responding said that I was fair in marking, 93.8% felt that I gave results back promptly, and 94.7% found my comments on the exams and assignments helpful. However, 53.6% of all students found the final examination to be too long.

Many students said they liked the fact that the midterm and final exam tested separate parts of the course. This is done primarily to help students narrow their focus when studying. It is viable in my course because they must cumulatively draw on ideas learned in the first half when completing the second. Because of these points, I continued to test the material in the first and second halves of the course, after the revisions.

Some students wanted more essays on the exams and fewer multiple choice questions, or vice versa according to the semester. I have always immediately responded to a student vote on format for the final exams after the midterms had been completed. I found the same sort of replies in the learning journal exercises: All but one student found the midterm exam to be a fair assessment and felt well-prepared. They liked the questions that required a sentence or two to answer and they suggested a comparative essay question. An example of this follows:

Yes, the midterm was very fair. The exam was very much like a longer version of the self test. The difficult units were tested pretty much equally and nothing was completely ignored or over represented. As with any test I often find that on things like multiple choice I find I'm stuck between two answers and this is sometimes a problem but that just tells me that I still need some review. I especially liked how you broke up the parts so that there were a mixture of types of questions together. When other tests are all multiple choice, then all the next type of question, that becomes boring. Plus since you seemed to ask a multiple choice, a true and false and a short answer I found that by reading and answering each I could recall more details for others. For example when you asked a multiple choice about one of the theories I couldn't remember but after I answered the short answer question that followed it, I recalled the theory that you had originally asked about. So, I really liked the format of the test. It was fair and a good assessment.

One student complained that the exam questions were too specific but he had not looked at the study objectives beforehand and he vowed to do so the next time. Most students liked the self-tests as examples of the exam and as a prior run-through, though one suggested I should revise these self-tests to ask only what would be covered on the final exam. I decided against doing this because of the my use of the objectives and self-tests as teaching tools. At least three or four of the minor study objectives for each unit are left out each semester and I send this information out to students at the beginning of the semester. The objectives that are omitted change from semester to semester, which allows me some leeway in tailoring the focus of the course. The self-tests are published in the manual and cannot be easily changed, so I want these to reflect all possible approaches to the subject matter. Students are encouraged to keep the current course focus in mind as they work through the self-tests.

To conclude, according to the students, the elements of the course most in need of change according to students were the reading load and distribution, selected objectives in individual units, a judicious use of visual organizers, and improved articulation of my

expectations regarding the development of critical thinking and reflective skills in students. These skills were, however, engendered through my course and its teaching, and those students participating in the learning journal exercises certainly learned them. In general, the feedback, course instructions, and format of the exams were all fine. However, I did reduce the length of the exams somewhat throughout the study in response to the four students who felt they did not have time to complete them.

Faculty Needs Assessments

The next set of needs assessments I conducted during 1998 was from faculty and colleagues in my department and from researchers and teachers in the field of adult education. In this section, I first describe my process for the assessment. Then I review the results of this faculty needs assessment in roughly the same order as I went through the students' needs assessments in the preceding section.

Process of the Faculty Assessment

To assess the faculty's views of studying through distance education, I used the findings of a curriculum review committee (CRC) which was struck by my department in 1998. I had been a contributing member of this committee. The mandate of the CRC was to evaluate the delivery of distance education courses offered through the department, and it afforded me the opportunity to record the reflections and concerns of eight of my departmental colleagues on the practice of distance education.

I also drew on 11 workshops and professional development activities relating to distance education which I attended from the fall of 1997 through to the end of 1999. Many of these focused on web course development but all had elements applicable to any

distance education course development and delivery. Among these workshops, the one that most influenced my thinking was Ian Muggeridge's workshop on quality assurance (see Appendix A for a synopsis of this workshop).

Finally, I compared my teaching practices to develop critical thinking in students with the practices and ideas of those in the field of adult education whose publications I had read for a literature review for my Master of Adult Education degree. While doing this literature review, I was able to identify and assess the instructional methods for facilitating critical thinking that are transferable to distance education courses. This work also provided background material for each category of focus in this case study.

Findings of the Assessment

According to the Curriculum Review Committee of my department, the readings for the "Anthropology and Sociology of Families" course were adequate in terms of textual complexity. In the CRC comparison of the course with similar distance education courses offered through other Canadian universities, the selection of readings for this course were more up-to-date and often more effectual within the field. Similarly, my course outlines met with all of the curriculum review committee's recommended guidelines for a course outline.

Although there is a debate in the field of education over whether or not objectives reify the learning process, the CRC noted that it is essential to include course objectives in distance education courses because the points cannot be made "live." My course and unit objectives met with all CRC directives.

Among the workshops I took, one was on learning styles. The issue of whether a course can meet the different learning styles of all students is particularly difficult to address in distance education courses. One solution, however, is to institute variety in instructional techniques in order to meet all learner styles and circumstances. I realized that a single instructional style could never meet all of the learning objectives I had for my distance education students. Therefore, I concluded that one change to consider was how to incorporate more variety in instructional techniques in my distance education course.

In pursuing different instructional styles in my literature review, I came across numerous descriptions of critical thinking exercises. I had used many of these exercises in the assignments I have set for students over my years of teaching though I had never explicitly recognized them as a means to stimulate critical thinking. These include an independent study component (optional in the “Anthropology and Sociology of Families” course, but mandatory in my on-campus courses); designing hypotheses and research studies; and having students use personal reflections in their papers and analyses. In exams, I have had students evaluate arguments, use probabilistic thinking; use personal reflections; assume the other’s perspectives, and work through variations of “anchored instruction.” These various techniques were found in the works of Brookfield (1986, 1990, 1992), Ennis (1993), Norris (1995), Potts (1998), and Underbakke et al. (1993).

Interaction has long been deemed especially important in stimulating critical thinking skills, and distance education courses have been considered especially deficient in this area. Through our Curriculum Review Committee, one faculty member in my department urged that degrees obtained through distance education be distinguished from

degrees completed on-campus precisely because students do not have an opportunity to discuss their work and general ideas with other students and faculty. Another faculty member dashed our hopes that a web course would rectify this situation. She described class participation in her web course discussion as follows:

Great Expectations re: communication with students are sadly misplaced. In fact, students communicate (in a web course) in about the same proportion as they do in class. The majority sit silently by, and a minority, sometimes a very small minority, speak up. In this class, despite the 10% awarded for conference participation, and the questions I post regularly..., only 3 out of the 15 students have participated to date.. (halfway through the semester).

Partially in response to these problems, my department recommends that 10% or less be given to class participation, not including grades based on formal seminar presentations. I have always adhered to this principle.

Interestingly, interaction provides a two-edged sword in teaching critical thinking skills: One study in my literature review found that critical thinking is negatively related to peer support, but it is positively associated with instructor-student interaction and discourse. Access to various on-line (Internet) sites and databases can promote interaction and collaboration in distance education, but this interaction is not synonymous with interactivity. Interactivity focuses on the ability of the technology to help in realizing the course goals and objectives. Interaction is still, at least in part, dependent on teaching methods and styles.

From these points, I decided to turn to a consideration of on-line activities as teaching tools. The facilitator of one of the workshops on web-based courses I attended distinguished between a complete web course and the use of the web to supplement

instruction, such as in correspondence courses where the web can be used for contact with and among students, to facilitate mentoring, to enrich the course content, to expand on interactions and discussions for students. Mixing traditional with alternate forms of evaluation of students was considered optimal in many of the workshops I attended and it would certainly work best for me in revising my distance education courses. Another workshop facilitator claimed that increasing demands on students to apply knowledge, problem-solve, think critically, work in teams, and communicate with each other demands a multi-dimensional approach to both teaching and evaluation.

Evaluating whether or not students have learned critical thinking skills is, at best, difficult—but as I learned in five of the workshops I attended, steps to this end can be made once instructors figure out what their intentions really are (i.e., What do they expect of students? Is the evaluation intended to be formative, diagnostic, summative, or punitive?) A teaching goals inventory can help with this. If the goal is to promote the learning of knowledge and facts, the focus is on teacher and content and the best form assessment is testing. If the goal is to develop skills, self-directed learning can be incorporated and portfolio evaluation is very good (though extensive). If the goal is to develop understanding and awareness, discussion is a good method of evaluation, and if changing attitudes is the goal, interaction with peers is necessary, though time-consuming and complicated to judge (Ennis, 1993; Fogarty and McTighe, 1993).

After deciding on learning goals and rationales, instructors should find evaluation methods to match. I had never formally done this before working on this case study but, again, I have informally acted on this principle throughout my teaching career. After

considering *what* I wanted students to learn (see the definition of critical thinking in chapter 1), I reviewed several methods of evaluating critical thinking in the adult education literature, such as Beale (1993), Biggs (1995), Ennis (1993), and Reif (1995). I was already using most of those mentioned with regard to examinations, but those dealing with assignments became part of what I worked through during the changes in this case study.

From the standpoint of the Curriculum Review Committee, my courses use acceptable evaluation methods and standards, going beyond objective testing to include a written format (short answer and short essay) plus “identifier” multiple choice and true/false questions. These identifier questions always amount to less than 30% of the exam, as mandated by my department and the Curriculum Review Committee.

Changes Implemented

Based on the needs assessments described above, I made changes to a number of aspects of my course, including the readings and sequence of readings, my instructions to students, the course manual, the learning exercises, my methods of interacting with students, and how I evaluate students. This section details the changes made in each of these areas.

Changes to the Readings

On the basis of these evaluations, I decided to change the textbook from one that provides an overview of research in each topic area to one that is a collection of specific Canadian research studies. For about 50% of the course time, students are assigned one or two of the readings from this textbook for each week. The corresponding units in the

course manual were rewritten to introduce these readings and placed them in context of the wider research trends in the field. I was careful to avoid summarizing the authors' findings, opinions, and conclusions. My new plan for developing more critical thinking and reflection in students was to have them read, understand, and summarize these studies. For the other half of the course, they go on to compare this Canadian research with ethnographic research from around the world.

By including the basics for each course in the manual and having students read the articles and ethnographies in more detail, there are now more opportunities for them to critically apply and compare ideas. Robinson's (1994) directives on how to choose a text that is considerate of student difficulties provided an excellent guide for how to present these basic concepts in the manual. I used it as a checklist to make sure that my new manual units were "considerate".

A related change that I made was to eliminate the local anthology which so many students disliked and replace it with shorter, more varied articles on the Canadian and provincial experience of family.

My next change was a key factor in facilitating critical thinking and reflection in students, though it seems innocuous enough. I restructured the course to redistribute the reading. Instead of having students review anthropological and ethnographic works and then go on to Canadian research, I now have them begin with basic terms, concepts, and theories in the first unit. The course then moves on to Canadian research on various sub-topics within the sociology of the family, which are interspersed with selections from two ethnographies and several ethnographic articles. This allows students room to do cross-

cultural comparisons and to focus on the two ethnographies in greater depth. There are now three books in the course instead of four. Students have to read each of these three much more carefully and critically.

Finding a balance between types of reading (cross-cultural vs. Canadian) was difficult, and students argued in favor of both in their evaluations. According to three student evaluations, the Canadian material is rather dry but most students liked it because it was easier to understand due to its familiarity. I saw a need to keep the cross-cultural material simply because it demands more critical thinking and analysis of other perspectives on family life from the students, and several students found these to be the more interesting aspects of the course to read.

Changes to My Instructions

The needs assessments indicate that one of my strengths as a teacher is providing students with clear and useful instructions. However, as part of the changes for this case study, I enumerated the aspects of clear instruction and methodically review the introduction of the “Anthropology and Sociology of Families” course manual, the self-tests, the answers to the self-tests, and the memos I sent out to ensure that the directives were met. These directives included giving a holistic focus for the course in the introduction, articulating all expectations for activities and interactions in the memos, and giving clear directives and examples in the assignments. Another directive was to show students the benefit of doing the activity. I then started to ensure that each assignment is now accompanied by a short statement of what the student should learn by doing it. I

provide necessary supports through the Listserv, memos, and telephone conversations, as well as during teleconferences, which continued through the last year of the study.

I have been trying to accommodate different learning styles in the assignments, but I do find it difficult because there are only so many options that I can offer students at any one time. Nevertheless, I have introduced more ways to provide students with practice (e.g., web discussions as well as self-tests) and feedback information.

Changes to the Manual

Because of the students' assessments, I was particularly careful to review each objective in the manual revision on the basis of its clarity and its relevance to the reading and to my expectations of students. Almost every objective was revised for these reasons or because they related to changes in the readings.

Also on the basis of students' assessments, I added visual organizers of particularly difficult concepts and theories (e.g., matrixes for comparative analyses of theories and of cross-cultural family forms, tables delineating areas of a sub-field). I have also been working on visual presentations of statistics, which are introduced at this level in my course. The course always includes an overall chart of readings that many students have applauded over the years of my teaching because it has kept them "on track." However, on the basis of my literature review and the professional development workshops I attended, I decided to avoid over-processing course materials by giving students too many versions of the same ideas. Nevertheless, I find it difficult to draw a line between a course that is over-processed and one that meets the needs of as many students as possible. This

difficulty was obvious in the first unit of my revised course manual, in which I went over the same concept in so many ways that one student complained of it being confusing.

Changes to the Learning Exercises

One of the purposes of the course revisions for this case study was to identify and use critical thinking skills in teaching, which involves taking an inventory of those critical thinking skills I want to impart. I did this throughout the planning stages of this study and came up with the following skills that I now demand from the students: evaluation of sources and arguments; classifying and prioritizing; comparing and clarifying issues and events; drawing conclusions; and identifying assumptions and biases. I found that I also wanted to facilitate the creative thinking skills of visualizing, generalizing, associating relationships, and dealing with ambiguity. The alternative evaluation exercises, the self-tests, and the exam questions were all directed to this end.

I revised my manual to have at least one assignment and one aspect of the manual that would appeal to learners with all types of styles and that would fulfill at least part of the critical thinking skills inventory I had developed. The optional web discussion, the course Listserv, and various optional assignments that draw on different academic skills were all intended to accommodate different learning styles and to stimulate critical thinking in students. For this reason, too, I began using other critical thinking exercises that I had not even considered as possibilities before. My distance education students began engaging in learning journals, critical incidents and evaluation exercises, inquiry and questioning on the Listserv, and reflective essays.

I tried several other critical thinking exercises that I adapted from the professional development workshops sponsored by my university. For example, a presentation by our university librarians on the better use of library services through assignments led me to inaugurate an annotated bibliography exercise and a database search (i.e., both forms of a reading log) for first and second year students. In preparing to add a web discussion option to my courses, I attended several workshops where the idea of discourse was emphasized and where we were warned to avoid giving marks for simple attendance in a group. Instead, we were advised to use groups for collaborative work or information gathering and then have individual students summarize and evaluate the material. These would then be marked separately. To give an example of how distance education research informs practice, I started working on this principle immediately in an on-campus course I taught during the spring semester of 1999. There was a time delay in getting my web discussion component on-line and I wanted to work out the problems beforehand.

My on-campus students had to attend three group discussions for which they were given a topic. Each had to prepare something to bring to the group beforehand and this had to be handed in at the end of the group session. They also had to write a paragraph on how their group work augmented their individual work and hand it in at the end of the session. I was extremely pleased with this exercise because it allowed group discussions to proceed without the “good” students being penalized for the “bad,” and the bad were obvious. More importantly, I saw a real improvement in student’s writing and analytical skills over the three discussion periods.

Writing exercises were particularly emphasized in the professional development workshops I attended that were sponsored by the university's writing center and the university library. I learned of such alternatives to longer term papers as shorter word journals, one-minute summaries, muddiest points, and so on--none of which I had considered before. The word journals exercise was particularly useful for me, both on-campus and in my "Anthropology and Sociology of Families" course.

Encouraging critical thinking in students is far from an insurmountable goal, as illustrated by exercises such as described above. Generally, students who did these exercises found them very valuable in terms of learning how to summarize and reflect on a piece of academic writing but one or two thought I was asking too much. They all continued to complete the exercises to the end of term, possibly because they found themselves much better prepared for the exams when they had completed these exercises. I sent out memos to students that described the various critical thinking exercises during the course as a way to keep them informed of my expectations.

I am considering incorporating several other exercises as part of the optional web evaluation for students, and as part of my "critical teaching strategies" bank. However, working through and evaluating each of these exercises takes at least a semester, so this will constitute my future on-going inquiry.

Changes in Interaction

From student responses during this study, I realized that I had been facilitating the development of their critical thinking skills all along. However, keeping the dilemma over

interaction in mind, and trying to stimulate such interaction and discourse for this case study, I have undertaken five initiatives:

1. Most students who completed the summative evaluation questionnaires wanted more teleconference sessions to go over the material. In response to this, I had my teleconference time reinstated (it was cut 5 years ago during budget shortfalls). This worked very well as a tutorial for those students who attended--they all wanted to continue with the second after having had the first: but there was only a 10% attendance rate in the first semester I did this. I continued the teleconferences into the fall 1999, when attendance went up to 25% of the class for the first teleconference but dropped again to 15% for the second. During the winter semester of 2000, attendance rates were 12% and 3% respectively, and I subsequently had to drop this avenue for budgetary reasons. Interestingly, for the final teleconference, I had about 20% of the class vowing to attend beforehand. When they did not show, they started emailing me the next day, asking me to type up a transcript and post it to the Listserv. However, there were so few students who took advantage of the tutorial aspect of the session that there was little to type up.

2. I inaugurated a Listserv for the course which has a better subscription rate of about 40%- 50% of the class by midterm. These Listservs have worked extremely well in keeping students in touch and in pace with the course. My technique so far has been to let students email me a question and then to re-post it and the answers--without anything to identify the student--to the Listserv. Whether or not this is used for stimulating academic questions depends on the students themselves. I do not want to set an intimidating standard for interaction. Students have primarily used the Listserv for course

administration types of questions, though some are more active and ask questions regarding the course materials. When asked, they all agree that it is very helpful and many draw on the archives when studying. I am careful to label each message as specifically as possible to identify its content.

3. I instituted an optional Web-based assignment in the course during Winter 2000. When informally asked on the Listserv whether or not they would like to see a chatroom or web option, most students responded that it would be an excellent addition. The web option now includes a chatroom and threaded discussions. Students are evaluated on the contributions to the discussions, and they can use these as a study tool for the exam. I found that the students participating in this discussion did better, on average, than the class as a whole. Even the weakest contributors had improved in writing and analytical style over the course of the semester, and likely did better on the exams than they would have without this exercise, judging from the earlier quality of their work. In future use of the web, I intend to have interested students use the on-line web facilities for a discussion of ideas, information-gathering and library research, expanding or narrowing a search, and the critical evaluation of sources.

4. In my memos, email activities, and teleconferencing, I follow the directives for personal and course communications with students that include (a) having students verbalize the problem-solving process during the on-line discussions and in the Listserv. This increases student flexibility (transferring the methods of critical thinking across disciplines) and student awareness (the ability to monitor one's own thinking processes, handle the material, and work within one's capability). The directives also involve (b) role

modeling professionalism and intellectualism by asking probing questions, focusing discussion, synthesizing points, and weaving together student submissions into viable themes or threads for the course content. Setting the intellectual climate of the course is not left entirely to students: I believe instructors should provide leadership by submitting helpful critiques to students on their work, maintaining flexibility throughout the course, and encouraging student participation at every turn. I have attempted to practice these latter two dictums in the course Listserv, the teleconferences, and on the optional web discussion. It has worked very well during those semesters when I had students who were not too shy or too worried to speak up.

5. I also extended my outreach to students by learning how to construct several web pages to outline my courses, provide web research links to students, and provide an email link to me. These can be found at an Internet site listed under my course description. The first version of these web pages included various bits of information on my history and philosophy as a distance education teacher, which I later deleted.

Changes to My Evaluation of Students

As noted in the needs assessments, most students cringe at the thought of negative feedback but they can benefit enormously from constructive criticism. In this case study, I learned to distinguish between the two, and one of the course revisions is a new appendix to the manual which details how I evaluate student work, how students should regard and use my comments, and the most common writing problems that students encounter.

As one element of my case study, I compared my marking habits with the general regulations on evaluation in the university calendar and have found that I meet them all,

having been immersed in this teaching for enough years that I have likely assimilated the standards over time. After looking at this, I realized that these regulations provide an interesting overview of the types of work required to get a specific grade, and I was encouraged by this to include a similar grading scheme in the appendix of the course manual.

From my faculty assessments, I was encouraged to allow students room to negotiate a small part of their mark in order to give them a sense of greater control. I began to do this in the Winter 2000 Web discussion by choosing the best 5 of 10 possible submissions to count towards a mark. When the more diligent of the 7 students I had doing this option asked to have it be given more weight, I agreed provided that they complete all 10 submissions. I found that this was quite empowering for those who opted for it.

In the curriculum review committee work, I found that similar distance education courses at other institutions in Canada offered more assignments and a greater breakdown of marks to students than did my original course. However, I encountered some difficulties in considering this; when others have offered this course on campus at my institution, they have traditionally only tested students twice and students have come to expect this. In addition, I have found it difficult to assign more than two submissions along with the exams due to the mail-in and turn-around times and handling associated with distance education courses. This was redressed in the on-line activities during the winter semester, 2000 but, as noted above, not all students have access to the Web. Nevertheless, I am continually trying to expand the options to students.

Finally, I realized over the course of this study that I had been revising my testing to ask more analytical, comparative, and reflective questions as I read more extensively in my topic area. However, my students were not yet adequately prepared for this. As a direct result, one of the key revisions in the course manual was to include examples of such questions--and of their answers--in the new self- tests.

My Observations and Reflections on Outcomes

At the time of writing this thesis (early spring, 2000), my course is in the final stages of its "first run" after the revisions. Overall, students have responded very well to all of the changes--and particularly to the optional Web discussion, improved instructions, new course sequencing, visual organizers, and the self-tests. Responses to the teleconference tutorials, however, have been rather abysmal. This seems to be as result of the greater accessibility that my students now have to email and the fact that the new Listserv covers many student questions and problems on a day-to-day basis. The teleconferences will be discontinued after this semester.

Those students with whom I regularly interact certainly seem better prepared for the various course evaluations, and their grades show steady improvement. The class average on prior midterms had always been in the 58 - 62% range, whereas it was 66% this semester. The average mark for Web discussion submissions has been 80%.

There have been a few problems: Because one or two students found the initial articles in the textbook difficult, I went through the points in many different ways on the Listserv and in the teleconference. There was also a problem of over-processing Unit 1 of the course manual and a few unit objectives need further clarification.

The other problems that came up in the course of this case study included the issue of giving students formal standards for what is to be achieved in the course. In 1999, I took part in a workshop facilitated by Dr. Ian Muggeridge which deeply influenced my reflections on my teaching practices (see Appendix A). I have found that I only managed to clearly inform students of the formal standards for critical thinking when I was halfway through my study, having blindly grasped after this standard for so many years in my teaching. When my definitions of critical thinking and of what I wanted from students really became clear to me, I was better able to teach it, both on-campus and via correspondence, email, and teleconferencing. Though I, like most other university instructors, have always created my own standards for course production and delivery, I found that turning to the adult education literature was an immense help in clarifying these.

Another issue I had to contend with was that of using formal standards to evaluate my own course. In the course of this case study, I worried that my own evaluation was becoming rather mechanical in that I was working up and through tables of revisions, questionnaires on critical thinking, and so on. However, I do feel that this process has allowed me the opportunity to actually get the revisions done, in contrast to previous years when I simply had a vague idea of where I eventually wanted the course to be. Although my formalized standards seemed rather mechanistic, the study went far beyond what Muggeridge referred to as the quantitative performance indicators of quality assurance and control, such as numbers of students, first destination of graduates, student-teacher ratios, publications list of instructors, and so forth. My emphasis was on the

quality of my teaching and of student outcomes. I looked at such qualitative indicators as my process of teaching, the inputs and outcomes, and the resources available throughout course delivery. In this, I was influenced by Muggeridge's emphasis that good performance indicators must always be matched with the definitions of the standards of teaching they should be measuring. This case study was an attempt to realize such standards.

The most pressing issues for quality assurance in distance education according to Muggeridge is the need to plan comprehensively when constructing distance education materials. During this case study, I attempted to fulfill the myriad of his prerequisites which included stakeholder analyses, identification of learning/ training needs, good instructional design, strategies, and materials, and an attitudinal change from that of knowledge provider to knowledge facilitator. Throughout this process, however, I had a nagging thought that one of Muggeridge's pronouncements might be true: "In the end, you may be trying to measure something that is unmeasurable."

I feel confident that I have been successful in achieving all my goals except that of changing the administrators' views of the collective responsibility of the institution to quality assurance and control of courses. This is literally beyond my control. However, an invaluable outcome of this process for me is that through ensuring the quality of the outcomes of my distance education teaching--my course manual and the output of students' development of critical thinking skills--I have effectively been concentrating on the total quality management of my own processes and philosophy of teaching.

Summary

To briefly recap, this chapter details how I used extensive needs analyses to evaluate and revise my distance education course to better meet the needs of students and the department in which it is taught. I also revised it so that students would be encouraged to develop critical thinking skills. I reviewed my methods for doing these needs analyses and their results, and then I described the changes I made to my course design in the areas of the readings, instructions, sequencing, course and unit objectives, visual organizers, learning styles, critical thinking exercises, identifying and role modeling critical thinking, feedback, interaction, on-line activities, and the evaluation of students.

Looking back over the entire process of my study for this Master of Adult Education degree, I am struck by the fact that I have drawn extensively on the principle of formative and qualitative course evaluation, even though it was intended as a means of revising an already established course.

The next chapter will provide an evaluation of how well the revisions measured up to the literature in adult education, my departmental and personal standards, and the possible influence that my case study will have on the development of distance education delivery at my institution.

CHAPTER 4

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

From my research and case study, I have found that teaching critical thinking and critical reflection is both desirable and attainable in university distance education courses. My overall purpose was to examine what types of changes in a distance course are useful in helping students to develop their critical thinking skills. I discuss the changes I made with an emphasis on the issue of instructional design versus constructivism. Other objectives I had were to develop my own professional roles and to ensure that students had the opportunity to develop their critical thinking and reflective skills. I discuss these two outcomes in the second and third section of this chapter. Finally, I draw conclusions from the case study and offer several recommendations that may be of interest to other adult educators working within a university distance education context.

My Redesign of the Course and the Issue of Constructivism Versus Instructional Design

The focus of my case study--determining how to change my distance education courses to better facilitate critical thinking and reflection in students--began with the question of whether constructivism is a better approach to course development than traditional instructional design. Constructivism is a trend in the adult education literature and was reflected in workshops I did from 1997 to 2000. My initial goal in this case study was to change my practice from what I considered to be a primarily instruction-based paradigm, developed through instructional design principles, to a student-centered paradigm based on constructivist principles. At the outset, I believed that critical thinking

skills could not be taught otherwise. However, after reviewing the various aspects of each paradigm in my literature review and reflecting on why I draw from one or the other at various times in my study, I realize that I have never focused on one at the expense of the other. I now believe that both approaches are useful in good adult education practice and in the production of distance education courses where students learn critical thinking and critical reflection skills.

The redesign of the “Anthropology and Sociology of Families” course incorporates elements of both the instruction-based and the student-centered paradigms, as described by Barr and Tagg (1995). I tried to meet such constructivist goals as establishing a basis of success for diverse students and creating wider access to the course and its ideas. I have also tried to adopt other aspects of the student-centered constructivist paradigm by incorporating a holistic focus as the introduction to the course; assisting with learning environments; accepting different learning experiences; and specifying the learning results for students (Barr & Tagg). However, I found that such practicalities as institutional demands also led to my preserving some elements of the instruction design model, such as a modular approach, a scheduled semester, closely covering the material, teacher-directed learning objectives, end-of-course assessment, and grading.

I also found that conducting a needs assessment was an integral part of the instructional design process because it facilitated planning and was consistent with my constructivist inclinations. Following Cline and Seibert’s (1993) and Caffarella’s (1994) models of needs assessments, I engaged in an extensive planning, data gathering, and analytical process of needs assessment. The planning stage involved the functional aspects

of setting goals and criteria for assessment and the use of data, researching the topic thoroughly, assembling a guidance group to keep the assessment on track, identifying data sources, and designing the questionnaires. This was also a constructivist process which “is organic, developmental, reflective, and collaborative,” according to Willis (1995, p. 12). My planning proceeded quite slowly through mountains of work and paper, despite knowing what I wanted to learn from the redesign and how I wanted to change as a teacher. For example, I compiled eight sources of evaluation and needs assessments, only to find that I still had to categorize, tabulate, and further summarize them before I could extract a set of guidelines for revising my course. After the needs assessment data were collected, the final step was its analysis, including a compilation in the form of a written report. At each stage, the planning developed organically out of prior processes.

Part of my needs assessments included the use of my own tacit knowledge as an educator which I recorded in a series of learning journals, as recommended by Pearce (1995). The use of a journal worked extremely well in my situation. The journal entries constituted constructivist, qualitative data for my case study. Throughout my needs assessments, I have similarly used many of the techniques of evaluation Willis (1995) recommended for constructivist planning, including “informal interviews, observations, user logs, focus groups, expert critique, and verbal student feedback” (p. 12).

As in Pearce’s (1995) observations on the instructional design tradition, I found that my needs assessments had a functional aspect in that they constituted a contextual basis for the content and process of my teaching (i.e., teaching what is necessary). The

needs assessments also had an empowering (constructivist) aspect where both my students and myself as an educator were given a voice in what should be taught.

Pearce (1995) poses the question of whether needs assessments are necessary in all circumstances, given professional and institutional demands and the tacit knowledge of practitioners. This is a valid point for those practitioners who are confident that their knowledge about what needs to be done is adequate. However, it is one that can be too easily assumed when there is a lack of time or resources to conduct a proper needs assessment. I agree with Wlodkowski (1999) who advocates that learners' needs assessments take place in a context where careful consideration is given to both the goals and needs of learners--and of departments--within a "realistic understanding of the learners' goals, perspectives, and expectations for what is being learned" (p. 35).

The actual changes I made to the course were informed by more constructivist principles than I had previously used. In the changes to the readings in the course, I switched from a textbook to a collection of articles in the field and provided overviews of each sub-area in the course manual. Students then had to engage with the materials on a deeper level than simply reading and memorizing. They were now expected to apply concepts and find patterns in the specific articles for each unit and, hopefully, begin to engage in a "discourse" with the course ideas, an engagement advocated by Juler (1990) and Robinson (1994).

Another important change related to the course readings was in restructuring the course so that instead of having students review anthropological and ethnographic works and then go on to Canadian research. I now have them alternating between the two. From

this sequence, I have students practicing the skill of cross-cultural comparison and they are focusing on the two assigned ethnographies in greater depth. They are reading less than they did before the changes, but much more carefully and critically. The changes were designed with the intention of giving students the context of the field and opportunities to rehearse and practice their newly developing knowledge and skills, as advocated by constructivists Burge and Roberts (1998) and instructional designer Dick (1995).

Changes to the course objectives were particularly important in this case study. I had previously been developing mine on an unsystematic basis without a clear sense of what I wanted students to actually do with the material they were studying. The process of writing course objectives is a mainstay of instructional design, according to Dick (1995) and Jegede et al. (1995). In my case study, the course objectives were improved by constructivist research and by focusing on learners' needs. When reviewing and revising each of my objectives for each unit of the course, I was conscious of Farr and Schaefer's (1993) directives on carefully matching objectives to teaching methods, media, and goals. In true constructivist fashion, I also found that improving and revising course objectives is a continual process. Willis (1995) notes that this process is refined with teaching experience and increasing exposure to the material.

Another change that was influenced by constructivist principles was the idea of creating an inventory of the critical thinking skills that I wanted students to develop and then using these to develop exercises and alternative assignments within the course (Ennis, 1993; Fogarty & McTighe, 1993). As Underbakke, Borg, and Peterson (1993) and Brookfield (1990) advise, my first step was to clearly articulate these skills for students so

that they understand the ultimate goal for each activity. I began doing this each semester in the various memos and Listserv notices I sent out to students. I also constructed a bank of various assignments that appeal to students with different learning styles. I now variously offer these to students as alternative evaluative tracks within the course, as recommended by James and Gardner (1995). These assignments are tied to the course material but offer students more opportunities for reflecting on their own and the authors' ideas, as advocated by Evans et al. (1993). Several are based on adaptations I made to convert in-class assignments to a distance education format. These include Brookfield's (1995) learning journals exercises, critical conversations, and evaluations; Davis' (1993) word journals exercise, one minute essays, and muddiest points questions (the latter two are used in a web discussion); and Bazillion and Braun's (1992) concept of database searches and annotated bibliographies.

One problem that occurred during (and because of) my work on the case study was that I began setting new questions that demanded more critical thinking from my then current students. I fell into the trap identified by instructional designers Dick (1995) and Schieman (1990)--of assuming that students were adequately prepared when, in fact, I had not yet given them the proper supports with which to practice. I did let students know that I use unit objectives when making up exams and that these objectives were designed to reflect my vision of critical thinking skills. However, students soon pointed out the same truth that James and Gardiner (1995), and Berge (1996) had: that they needed samples as well as the objectives to direct them to think critically. This became one of the key changes I made in the revisions to my course.

In answer to the question of whether constructivism is preferable to industrial design, in the production of my distance education courses I found that trends are not necessarily of value simply because they are new and different. This is not to discount the intrinsic value of the constructivist approach and the learning paradigm, but I have found that there is still educational value in the instructional design approach to teaching. For example, students cannot begin to think critically or reflectively without clear directives as to what the course objectives are and instructional design is indispensable in ensuring this. I have tried to glean the best of both models, but after reading Willis (1995), and Barr and Tagg (1995), I realized how much of a behaviourist I am in relying on educational objectives to define my learning, both sequentially and mentally. On the one hand, I feel more secure with a step-by-step process, as do my students. On the other hand, I also know how artificial objectives can be and how chaotic is the learning process. In the next section, I turn to my own learning experiences during this degree.

My Role of Engaging in Critical Reflection as a Distance Educator

During this case study, I have become more critically reflective in my teaching practice and I feel that I have developed more accommodative, divergent, and convergent thinking skills. For example, the convergent skill of experimenting with new ideas and ways of thinking and doing (James & Gardiner, 1995) was used throughout my study, but especially in constructing and using the assignment bank mentioned above. In these assignments, I tried to follow Winn's (1993) directives to teach transferable skills and to maintain flexibility so that learners could construct their own learning situations to whatever extent possible. I wanted to role model critical thinking skills (Larisey, 1994),

and part of this was accomplished through these exercises and the feedback I gave students in the course of this case study. I had never consciously thought of these elements of teaching prior to this study. My own critical thinking and reflective capacities broadened considerably during this case study as I developed the habit keeping a journal of my professional development--an aspect of the reflective process that is recommended by Brookfield (1995), Modra (1989), and Smythe (1989) .

My accommodative skills were honed with my attempts to increase communications in hopes of facilitating more critical thinking and reflection in my students. For example, I continually tried out different methods of communications such as email, teleconferencing, a web discussion, and a Listserv. My students reported that they found these quite beneficial. Along with accommodating their needs for increased communication, I found that increased interactivity provides opportunities for discourse, which enhances students' learning critical thinking and reflection skills (Burge & Roberts, 1998; Cyrs, 1997; Juler, 1990; Lahey, 1996; Wagner, 1997). It can also provide exercises for those students who need to learn in the affective mode (James & Gardiner, 1995). Finally, in using more communications methods, I found myself becoming much more critically reflective and my teaching routine has evolved to include my own explicit evaluation, as recommended by Brookfield (1995) and Daloz (1999). For example, instead of simply using the teleconference as an upscale "telephone," I began measuring attendance and student performance during and after each teleconference to determine how useful they were. When I compared student interaction within the teleconferences to that within the Listserv for the course, I found that discussion was much more elevated

and interesting when it occurred live, but attendance at the teleconferences was sketchy at best.

Wider communications with my distance education students allowed me to develop such divergent skills as being sensitive to people's feelings and values and listening to them with an open mind. Personalizing instruction is important in distance education courses where students often feel marginalized and it is essential to establishing a good foundation for discourse between students and students and students and teachers, which is crucial in teaching critical thinking and reflection as noted above (Haughey, 1991; Evans et al., 1993).

Personalized instruction additionally allows the teacher greater insight into the conditions distance education students work under (Burge & Roberts, 1998; Baiocco & DeWaters, 1998). At one point in my case study, I was perplexed when one of my better students did not make it to a teleconference and did not sign on to the Listserv for the course in the fall of 1999 until she reminded me (by telephone) of how inaccessible these technologies still are to many distance education students. As Keast (1998) found in his survey, many distance education students either desire or feel a need to study through computerized communications but do not have the proper equipment or access to do so. This is one of the primary reasons why I believe it is important to offer alternative tracks of study within a distance education course while maintaining the overall goal, which, in my case, is enhancing critical thinking and reflection skills in students.

As previously noted, the ultimate purpose of developing accommodative, divergent, and convergent thinking skills was to adopt constructivist principles of teaching

and educational design. In reflecting on these, I found that my own process of learning how to teach was, indeed, constructivist in many ways.

To reiterate Willis' (1995) point on constructivist theory, redesign and revision must be expected throughout course design, which is ultimately "recursive, non-linear, and sometimes chaotic" (p. 12). This was somewhat of a relief to discover, because I felt embarrassed that my design and organizational abilities might be inferior when my first efforts at revision were not always received by students as anticipated--for example, the teleconferences noted above.

The recursive aspects of my own learning occurred often when I noted ideas that I have had before and had let slip into oblivion. Two examples of this came up during my course revisions for this case study. For the 10 years of my teaching up to that point, "Anthropology and Sociology of Families" students have been lobbying for a more "balanced" reading load--in both their conversations and summative evaluation questionnaires of the course. Despite this, I have always neglected to do anything to re-balance the course when revision time came around. Instead, I usually focused on academic content. One of the final revisions to my course, then, was to reduce the overall reading load to ensure that students would have time to reflect on what they read. This is a necessary preliminary step in setting the conditions for facilitating critical thinking and reflection, as noted by Nation (1989), Evans et al. (1993), and Potts (1998).

The second example of my recursive learning occurred when I realized that I have always been a constructivist teacher when developing course objectives. Prior to this case study, the objectives were usually added in or changed during course design and were

clarified with increasing use. Willis (1995) points out that, in constructivism, “Objectives emerge from design and development work” (p. 12) rather than acting as a guide for development. My study involved amending old and constructing new learning objectives as the revisions were refined and implemented.

Further to this, my own educational objectives for this degree were tempered by experience and such circumstances as when I realized that student goals were far different from my own. I had initially despaired that I could never truly follow in the footsteps of Coady (1967) and Freire (1978) in promoting critical thinking and reflection among adult learners as an avenue to social transformation on the community level. When I was reminded that many students (myself included) are enrolled in university courses for career purposes rather than for those loftier goals, I was better able to see how I could play a role by promoting critical thinking and reflection as tools for individual empowerment and transformation. As Habermas (1970, 1975), Mezirow (1991,1996), and Shor (1980) proposed, this, in itself, is a crucial first step in ensuring the possibility of social consciousness and transformation (though it does not guarantee it).

Another of my educational objectives that has been tempered by my work on this case study is that of improving my own critical thinking and reflectivity in my professional activities as a teacher. I had initially pictured this as simply learning how to teach critical thinking, but I now realize that teaching is (or should be) a continual learning process (Brookfield, 1986; Caffarella, 1994; Vella, 1994). My students have benefitted from this as well. While working on this degree, I was continually reminded of an anonymous East

Indian proverb, “To learn from one who is learning is to drink from a running stream.” I feel that my role as a teacher has been refreshed and enlivened.

How the Course Changes Have Affected My Students

Throughout the case study, my focus was on improving the learning of the students in my distance education course. Thus, during the study, I evaluated the results of the methods I adopted for the students and considered how well current concepts about learning have been realized. I was able to do this from the beginning of the study, though I do acknowledge that more work needs to be done in this area. My focus was more on course production and teaching methods that facilitate critical thinking and reflection in students than on the evaluation of these methods. However, I did three assessments of how much I was already putting my critical thinking goals into practice before I made any changes to the course. For example, I had already been asking students to compare cultures, apply ideas, and evaluate theories in the exams. My most prepared and critical thinking students always told me that my exams were already good in terms of covering the material and challenging the student to think. Moreover, my exams fit both Ennis (1993), and Cross and Steadman’s (1996) criteria for testing critical thinking. Even my not-so-well-prepared students usually agreed that the exams were fair. However, prior to this case study, my preparatory exercises for the exams did little more than direct students to my expectations. After my research, I now deliberately inform students of *why* they should do the various exercises I set, and my assignments have become much better structured and relevant for teaching the academic skills related to critical thinking that students will need later in their professional careers.

Both my on-campus and distance students responded quite well to assignments that stimulated critical and reflective thinking skills, particularly the word journals, the reflective essays, and the data base bibliography and annotations exercises that I had adapted from Davis (1993), Brookfield (1986), and from a few workshops I attended in 1998. Students doing these exercises commented on how they really had to think through the material and learn how to focus on a point. They declared that they had engaged in critical thinking and were better prepared for the exams. I also noted marked improvements among students who submitted these exercises in stages: Most did "A" level work by the time of their final submissions. These findings support the point that incorporating exercises in critical thinking and reflection is an important precursor to student success in university courses (Lewis & Smith, 1993; Franklin, 1995; Terenzini et al., 1995).

Despite the benefits students realized in doing the optional assignments that were expressly designed for promoting critical thinking, I found that only about 10% of those in my classes were willing to do them. I was reminded of Caffarella's (1994) point that "individual, organizational, and community ideas for what is needed or wanted are not always in sync" (p. 70). I found this to be especially true when I compared my students' needs assessments, which rarely identified instruction in critical thinking and reflection as a need, with the needs for such instruction voiced by my colleagues. Students' priorities were on more practical problems, such as receiving timely feedback from instructors. This is likely due to a combination of factors such as course overload and family or work commitments, for which distance education students are famous, and a lack of knowledge

and training in these styles of thinking. Like Modra (1989) and Thompson (1990), I had an occasional student who would actually object to any exercise that demanded critical thinking skills or reflection. Nevertheless, as Wolcott (1995) points out, despite this lack of interest in developing critical thinking and reflection skills, I believe many students will judge a course boring or of little value when there are few demands for critical and reflective thinking. Given this and the results of my own case study, an interesting research question for future consideration might be whether or not distance education students would be better equipped to develop or benefit from critical thinking skills if allowed greater levels of interaction with their instructors or with their peers, such as in computerized communications.

The quality and overall grades of student work in my classes have significantly improved since I have made the course changes. However, in the two semesters before the reading load was reduced as a course change, I noticed that my class size had been declining. This may have been because students were opting for less challenging courses. I suspect that the fault was mine, however, because I was prematurely demanding more critical thinking and reflection from students without adequately preparing them. As noted above, advocates of both instructional design and constructivism warn that adequate preliminary preparation is essential if students are to learn from any process (Berge, 1996; Dick, 1995; Schieman, 1990). On top of this premature demand, I had assigned a fairly heavy reading load. Once the load lightened and the sequence of learning became more clearly established in the course, students were better able to concentrate. My class size has returned to normal by the winter semester of 2000.

Recommendations and Conclusions

Based on my case study and conclusions, I recommend that university distance educators seeking to revise their courses should begin by reviewing adult education principles and practices that can inform their revision process. Working on this case study has afforded me the opportunity to truly understand how essential adult education principles are in university teaching. My review was excellent in determining course production, teaching, course delivery, and evaluation methods for my work. In addition, I intend to use adult education principles to promote attitudinal change among my students and colleagues--from viewing the instructor as knowledge provider to viewing her or him as a knowledge facilitator. Unfortunately, such changes spread slowly and gradually, for while individual attitudes are flexible, the institutional views of teaching are far more ingrained.

My second recommendation to distance educators preparing to revise their courses is to first look at what they have already tacitly done in their courses to accomplish the goals they have identified. Overall, I have found that much of what I had been vaguely struggling towards over the time leading up to--and planning--this case study was always partially in place. The study allowed me to refine my own goals and teaching practices.

My third recommendation to distance educators in the revision process is to do an extensive needs analysis using a variety of stakeholders and formative evaluations. Looking at one group alone gives a very partial impression of what needs to be done. Instead, educators should consider the needs and missions of their institution and balance the purposes of students, instructors, and the institution to arrive at their own derived

process of ensuring the quality of their teaching efforts. Formative evaluations, though not quantifiable, offer rich material on which to base such an endeavor. In my case study, the methodical needs analysis led to a formalization of my practices as a teacher and to the articulation of how each of several areas of concern are instrumental in promoting the development of critical thinking in students. The needs analysis also provided me with standards and a framework to ensure that my expectations of students were realized in my course, instead of being put aside for a more convenient time. I am confident that students who do my revised “Anthropology and Sociology of Families” course by correspondence will be encouraged to develop more appropriate critical thinking skills, and that they will find that the revised course’s design features will augment their distance education experience.

However, I have to acknowledge a small caveat when promoting such an extensive needs analysis in university departments: Such an undertaking might be too time-consuming and costly for many distance educators. For this reason, I advocate that distance educators engage in needs analysis to whatever extent they can, as well as take advantage of the training and practice in adult education offered at their institutions. Instructional designers are always ready and willing to help out with services and with professional development workshops and activities.

My fourth recommendation for distance educators contemplating course revisions is that they remember that teaching goes beyond assignments and tests. In the case of distance education, course materials convey ways of thinking as well as content and should be carefully constructed to this end. Communications methods and technologies are

very important. Contrary to the traditional lecturing method used in universities around the world, distance education teachers must extend their reach and incorporate new teaching practices and methods as technologies and stakeholders' expectations change. We must weigh each of these carefully in view of what our intended outcomes are for students and whether these new variations uphold our standards for ourselves and our students. Everything cannot be wholeheartedly incorporated or rejected out of hand without this careful consideration.

From this, my fifth recommendation is that distance educators resist the temptation to adopt new trends and discard older methods without careful consideration. In my experience, I found that a blend of new constructivist with older instructional design methods worked best. In addition, educators should be careful about incorporating partial or untested revisions before students are fully prepared. One's enthusiasm for the revisions can sometimes overshadow common sense.

Finally, I recommend that distance educators, and all other adult educators, consider course development and revision as a continual and on-going element of the teaching process. In doing this case study, I have experienced a significant learning process which involves a continuous cycle of setting standards, implementing them, comparing the results against the standards, planning improvement, and taking action to implement new changes. Now, at the end of this cycle, I find myself beginning to go around it once more.

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APPENDIX A

SYNOPSIS OF A WORKSHOP ENTITLED “QUALITY ASSURANCE IN OPEN AND DISTANCE EDUCATION

As noted in chapter 3, my evaluations of myself and my course were greatly influenced by Dr. Ian Muggeridge. On November 4, 1999, I attended his workshop, “Quality Assurance in Open and Distance Education” in which he proposed that the issues of quality assurance (avoiding faults) and quality control (removing faults) are two components of an essentially continuous process of total quality management within distance education. Muggeridge stressed the need for distance educators to continually update, assess, and revise their courses using formal standards. Standards are as important as they are difficult to define and agree upon within a university setting.

As Muggeridge pointed out, the advantages of using formal standards are obvious: They provide (a) a framework for quality control; (b) a framework for carrying out procedures; (c) external reference points; that allow (d) comparisons of each activity with policies; and they are (e) useful when evaluating activities. The limitations of formalized standards are the same as those that occur when applying any industrial procedure, such as instructional design, to an essentially thought-evoking process: Standards then become mechanistic, leading to what Muggeridge calls a “checklist culture” where evaluation becomes static.

To overcome this problem, Muggeridge points out that quality control should be an institutional process, rather than one simply left up to the individual. It should be developed

within the particular institution's context of teaching and learning. Participants in this process have to consider the needs and missions of their institution, and the balance between the purposes of students, instructors, and the institution, to arrive at a specific procedure of quality management.