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**INTERACTION AND CONTROL IN ASYNCHRONOUS COMPUTER-MEDIATED  
COMMUNICATION IN A DISTANCE EDUCATION CONTEXT**

A Thesis in

Adult Education

by

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## ABSTRACT

Since the late 1980s there has been large-scale implementation of distance education courses involving interaction between students and faculty through the use of computer mediated communication. This communication potential has allowed interaction between students and faculty, in their own time and at their own pace, to pervade distance courses in ways not available in distance education before (Moore, 1993, p.33), and has brought renewed attention to interaction within distance education theory. Alongside this attention is recognition that the related concerns of control and power arise from an acknowledgement of interaction as a core component in distance education theory. In particular, Evans and Nation (1989) draw on Giddens to frame distance learners as meaning makers employed in a process of negotiation in which power and control must be central concepts. The purpose of this study was to elaborate theoretical understandings, through the use of a grounded theoretical approach, that explain the relationship between the concept of control and interaction within the teaching learning process in a distance education course. The site for the study was a program of teacher education in a New Zealand university. The work of Moore, and Garrison and Baynton provided initial framing for the identification, description and interpretation of student experiences of interaction within their distance education courses. Grounded theory methods were used in data analysis. The ongoing interplay between data collection and data analysis enabled the further development and generation of categories for analysis. The findings were presented in three sections. The first focused on the participants and their understandings of themselves as distance students; the second on their perception of

interaction in their course and its effects on both cognitive and affective dimensions of their work; the third on control in interaction in terms of personal agency, control exercised by others, and the wider institutional, social and technological impacts. I found that while an asynchronous computer mediated communication environment does afford the possibility of positive valued collaborative interaction for learning between students and faculty, and between students, that form of interaction between students is most likely to occur where students are interacting in an environment that enables the creation of hyperpersonal interaction (Walther, 1996). The asynchronous computer mediated communication environment affords lecturers greater possibility of control over the nature and content of student messages, but students also tailor their own involvement in interaction to minimize the impact of the lecturer's gaze, to maximize the benefit they gain for learning and to reduce the distraction of messages that might confuse or obfuscate that learning. I also argue that as full time distance students, participants are more likely to engage in interaction with their peers than part-time distance students because of their relative isolation from other support networks, and thus they are drawn to form a community of learners that provides valuable affective support. Finally, the data indicate that use of a single technology places limits on the interaction possibilities available to students who act to extend the range of interaction capabilities supporting their education. The process of the research is discussed and limitations of the study are noted. Finally I provide recommendations for further research.

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## Chapter One

### INTRODUCTION

#### Introduction to the Chapter

The study examined and sought an explanation of the relationship between the concepts of control and interaction in learning and teaching in an online distance education course. It was thus concerned with teaching and learning, and in particular with the teaching-learning process in distance education. Its focus on distance education means that the substance of the research area being investigated drew on theory related particularly to distance education. This research also drew more generally on research and theory from outside the field of distance education to frame the nature of the research question and the way in which the study was undertaken.

The first section of this chapter presents the background to the study by reviewing the way interaction between teachers and students in distance education courses has changed over time, and suggests that computer-mediated communication has afforded new interaction possibilities to distance education. The second section provides a broad statement of the problem area and signals the need for investigation of interaction in asynchronous computer-mediated communication environments in distance education. The third section sketches out theory related to interaction and control in distance education illustrating the theoretical base on which this study was developed. In the subsequent section the focus of this chapter narrows to discuss interaction and control in asynchronous computer-mediated communication settings.

This section presents an argument that control issues are implicated in online discussions but that, in the area of distance education, they have rarely been considered. Sections on the purpose of the study and the research questions follow. Before the concluding sections of the chapter, a brief section about the use of grounded theory as a methodological approach highlights aspects of that approach as they impact on this study.

### Distance Education and Interaction in Practice

Nipper (1989) wrote that distance education had been part of education throughout the history of Western civilization and divides the history of distance education into three generations. However, the history of distance education can be viewed through different lenses depending on the intent of the writer. Bates (1995) used Nipper to show three generations in terms of technology and also cited Kaufman (1989, in Bates, 1995) as suggesting these generations exist in terms of learner control. Those generations also provide a way of considering the evolution of interaction in distance education.

Nipper's (1989) first generation is, effectively, correspondence based teaching where "student-teacher and teacher-student feedback processes are slow, sparse, and mostly restricted to the periods when the learners submit scheduled assignments" (p. 63). The second, which has been developed since the 1960's, involves a much greater range of media and "Feedback processes are very similar to those of the 'first generation' systems, but include telephone counseling and some face-to-face tutorials." (p. 63). Thus, Nipper said, "Learning is not seen to be a social process...and therefore does not imply dynamic interaction with or between the

learners and teachers” (p. 64). In these forms distance education has had considerable success. It has been accepted world wide and provided opportunity for countless students to experience educational success.

Third generation systems of distance education are, on the other hand, those that enable extensive communication between learners and teachers. Based on the idea of learning as a social process, and the importance of overcoming the social distance between learners and teachers, this third generation of distance education is growing in prevalence. Since Nipper’s original report on third generation distance education, use of media within distance education to allow ‘dynamic interaction’ between learners and between learners and teachers has multiplied.

Alongside these developments, the major development of modern distance education theory occurred through the 1970s and early 1980s. Most of this theoretical development acknowledged the importance of interaction and placed a heavy emphasis on that interaction being between student and teacher. However, the idea of interaction between learners within a distance education course as being of educational value is rarely explicitly mentioned within the early incarnations of theories developed at that time.

Since the late 1980s there has been large-scale implementation of distance education courses involving interaction between students through the use of computer mediated communication. It is clear that considerable use is made of this communication potential by both faculty and students. Interaction in such distance education courses is a pervasive factor occurring throughout each day and week of a course (Harasim, Hiltz, Teles, & Turoff, 1995; S R Hiltz, 1995) and has been

described as something not available in distance education before (Moore, 1993, p. 33) at a time when audio and video conferencing were available. The appearance within distance education of this interaction possibility has brought renewed attention to interaction within distance education theory.

### The Problem

The growth of interaction within the teaching learning process in distance education has been outlined in the preceding section. This growth has helped assuage the criticism of those who like Henri and Kaye (1993) argued that:

The difficulty distance education comes up against is that of reproducing the dialogue that enables students to be critical and personal in their learning. Students should be able to enter into exchanges in order to understand, criticize, adapt and finally use the knowledge that has been given to them and which they have made their own (p. 28).

While new practices in distance education have helped to address such criticism, the advent of technologies opening distance education “classrooms” to ongoing and sustained dialogue between students, and students and teachers throughout the length of the course has also provided a new context for theorizing about interaction. Distance education theory offers some specific purposes for engagement in interaction in distance education courses, focusing, as noted earlier, on interaction between students and teachers. Garrison (2000) suggested that the new developments in distance education “pose enormous challenges for educators to make sense of the distance educational options available” (p. 1) and argued that “the challenge the field of distance education faces is the construction of theories addressing specific components and concerns of postindustrial distance education” (p.

12). As one example of such a challenge, he concluded “the creation of distance education theory that informs and explains computer mediated communication is both an opportunity and a challenge” (p.12).

This call has been supported by calls for further empirical research. Recently Bullen (1997) suggested that “little is known about how and why learners participate in computer conferencing and what factors may affect their participation” (p. 7). More specifically Vrasidas and McIsaac (1999) have called for research into the ways in which power and control operate in online discourse and Fahy (2001) suggested the need for research into the reasons for the high variability in both participation levels and the connectedness (describing who and how many people are contacted) of participants in online discussions. The approach of this study has been suggested also. Burge (1994) said “there is still a scarcity of qualitative studies that enable researchers to develop new and relevant concepts and hypotheses for consequent explorations” (p. 22) while Eastmond (1995) argued for a need for qualitative studies that investigate online learning from a student perspective. In addition, Gunawardena and Zittle (1997) called for future research in computer-mediated communication in distance education to adopt a perspective that takes a relational view of computer-mediated communication, and suggested that a variety of methodologies should be used in this task.

#### Distance Education, Interaction and Control

Garrison has called for new theoretical understandings of distance education in response to the current distance education context. While such new understandings may arise in a variety of ways, they should be informed by an appreciation of current

theory, acknowledging the strengths and recognizing the gaps that exist within that body of knowledge. This section briefly (a fuller review is provided in the next chapter) considers distance education theory that is particularly concerned with interaction between people to, in Garrison's terms, flesh out specific components and concerns that might be addressed in the development of theory that informs and explains computer-mediated communication. It will highlight a theoretical engagement with the related concerns of control and power that arise from an acknowledgement of interaction as a core component in distance education theory. This engagement is premised on the primacy of the notion of educational transaction within distance education contexts, a premise that this study has at its core also.

Many authors (e.g. Kearsley, 1996; Keegan, 1996; R Mason, 1994; Verduin & Clark, 1991; Wagner, 1994) have addressed theoretical issues concerning interaction in distance education, but this section particularly notes the work of Moore, Garrison, and Evans and Nation because of the more encompassing approaches they adopt.

The use of the concept of interaction within distance education theory was initially rather broad and diffuse. Moore (1989) brought some clarity to discussion of the concept with his depiction of three types of instructional interaction: teacher-student, student-student, and student-content. From this point on the term interaction will be used in the sense of communication between people, encompassing Moore's first two types. Even described in this more limited sense, interaction plays an important role in most theoretical approaches to distance education.

Moore's (1993) theory of transactional distance provides explicit statements about the nature of distance education. Moore suggested that distance education is

characterized by a transactional distance between teacher and learner. That distance is a function of structure and Dialog (where the term dialog is used to convey Moore's definition it will have an initial capital letter. Quotations will not be altered.). Structure "expresses the rigidity or flexibility of the program's educational objectives, teaching strategies, and evaluation methods. It describes the extent to which an education program can accommodate or be responsive to each learner's individual needs" (p. 26). For Moore, Dialog was "an interaction or series of interactions having positive qualities...is purposeful, constructive, and valued by each party. Each party...is a respectful and active listener; each is a contributor and builds on the contributions of the other party or parties" (p.26).

Learner autonomy is a further important concept in this theory, describing the extent to which a learner controls the teaching-learning process. Moore's initial work here drew on Wedemeyer's work on independent study, and from the areas of adult education and humanist psychology (Moore, 1980), stressing the independence and control that learners can exercise in distance education. Moore (1993) summarized the links between the elements of transactional distance (as represented by Dialog and structure) and autonomy as follows:

Students with advanced competence as autonomous learners appeared to be quite comfortable with less dialogic programmes with little structure; more dependent learners preferred programmes with more dialogue; some wanted a great deal of structure; while others preferred to rely on the informal structure provided in a close relationship with an instructor (p. 32).

Garrison and Shale (1990) argued strongly that education is characterized by the centrality of the dialogic exchange between teacher and student and this characteristic must therefore be central to distance education. They commented that

“to the extent that distance education denies the importance of the dialogic/dialectical exchange, it runs the risk of diminishing the educational experience or even invalidating it” and further that “the most important feature for characterizing distance education is not its morphology but how communication between teacher and student is facilitated” (p. 31). In pursuing this approach, Garrison had considerable focus on the independence of learners, while at the same time expressing considerable concern about the conceptualization of independence within distance education. In elaborating on Moore’s concepts, Garrison and Baynton (1987) illustrated the inter-relationship between independence, support and power as dimensions of control, and described control as a crucial and central concept in distance education. Their analysis would suggest that such concepts need to be considered as developing interdependently—within a context of relationships between learners, teachers, and their environment. In considering control in distance education, their focus was on the nature of the interaction between teacher and student. In terms of distance education theory, the work of Garrison and Baynton moves toward an approach that recognizes and attempts to account for the co-construction of knowledge and ability through the process of mediated social interaction.

Evans and Nation (1989) also placed dialog at the center of distance education and indicated that in doing so distance educators should work to connect distance education theory to the more general theory of the fields of education and the social sciences. In their own theoretical endeavors in the field, they have drawn on the work of Giddens to highlight the importance of seeing learners as meaning-makers

employed in a process of negotiation, and to draw attention to the fact that power is of basic importance in human social life and must be a central concept in any consideration of education as meaning-making.

Although this section has been concerned to show the engagement of distance education theory with the related concerns of control and power in regard to interaction, it has also highlighted the centrality of the educational transaction in distance education. As stated previously, this latter point is a core aspect of the proposed study and within it, is considered from a particular point of view—that of a sociocultural approach to education and learning. That approach will be discussed in Chapter Two. The next section focuses on interaction and control in computer-mediated communication settings, narrowing the view to the context for this research.

#### Interaction and Control in Asynchronous Computer-mediated Communication

Asynchronous CMC can be employed to enable group discussion or to allow communication between individuals within a course. It affords frequent and reasonably rapid dialogical possibilities and is increasingly used within distance education courses. It is this particular aspect that has come to dominate discussion of the distance education use of asynchronous computer-mediated communication, as in the work of Hiltz (1995), Harasim, Hiltz, Teles and Turoff (1995) and Verdejo and Cerri (1993).

There are contrasting views about the nature of such online discussion. In work with a group of students involved in a LOTE class, Knobel, Lankshear Honan and Crawford (1998) studied interactions between students using email for classwork in an on-campus graduate class for language teachers. While showing that their

results do not support several claims for the use of electronic communication relating to enhancing student autonomy, facilitating higher quality discussion and enhancing learning skills, Knobel et al. (1998) acknowledged that the most significant influence on learning outcomes is the particular purpose for which the networks are used. Their study is useful, not because it seems to debunk several widely held beliefs about the use of computer-mediated communication tools, but because it stresses that it is the situation of use that determines how, in what form and to what extent interaction will occur.

Janangelo (1991) wrote about the fiction that technology would bring better teaching and implicit equity. His concern was about the way technologies have been used to support oppressive social relations (technopower) and how technopression, the use of technology to oppress or to ensure self-subjugation, can occur within educational contexts. This seems strongly at odds with the assertion that computer mediated communication will provide a more democratic education environment for discussion in which people are on equal terms as they contribute, take turns and raise topics (Graddol, 1989; Harasim, 1989; Harasim et al., 1995; Rohfeld & Hiemstra, 1995; Steeples, Goodyear, & Mellar, 1994).

A possible resolution of this dilemma is offered by Spears and Lea (1994) in their discussion of power in computer-mediated communication environments. Spears and Lea started by giving careful consideration to the ways in which power is being characterized. Control, they said, can be characterized as control over one's work so that power is then defined as the ability to get things done. They offer the critique of this view by saying:

However, the narrowness of this approach becomes clear when we consider that neither power nor control so defined reflect an increase in the social or relational power of the subordinate ... still less a release from the power relationship. Expansion of individual control over one's work domain or productivity by virtue of technological forces is conceptually distinct from the social power relations within which this is exercised" (p. 435).

At this level of analysis, the supporters of electronic democracy could argue that they acknowledge the nature of power relations that exist between teacher and students in classrooms of all sorts (although few do), and are prepared to accept those relationships as part of education, but point to the democratizing of relationships between students. Rohfeld and Hiemstra (1995) seemed to reflect this subtlety in their discussion of students who described themselves as "timid, passive or unable to think quickly ... in face-to-face situations" (p. 102). These students stated that computer-mediated communication gave them time to reflect and compose class discussion contributions, and the authors concluded that computer-mediated communication was valuable, in part, because "helping learners take increasing control over personal learning is a goal for most educational endeavors" (p. 102).

Further analysis by Spears and Lea (1994) made even this assertion problematic. They noted that traditional conceptualizations and discussions of power treated power as an "external force to which the individual succumbs; power is typically imposed from above, against the will of the resisting and reluctant individual" (p. 436). Further, even the portrayal of social pressure suggests an external normalizing force implying "compliance or submission to the views of powerful others, or those with the power to reward or provide such approval. Such compliance is virtually indistinguishable from the effects of power per se" (p. 436).

In contrast, drawing on a Foucauldian analysis, Spears and Lea (1994) suggested that:

the effects of both power and influence rely on an active agent to exert their effects; they could not exert their effects on inert objects, but rely on the identity and agency of both parties and the social relations that bind them. ... It follows that if power and influence are not outside, but are at least partly encoded with us, it becomes far less easy to argue that the source of power is necessarily displaced or diluted by ... CMC (p. 437)

A brief review of some recent studies of the use of computer-mediated communication in distance education shows that there is little concern in the literature for the issue of power or control but that it is an issue that needs consideration. The work of Burge (1994), Hillman (1999), McDonald and Gibson (1998), Vrasidas and McIsaac (1999), Wegerif (1998), and Picciano (1998) will be used to illustrate this point in a full review in the next chapter.

Although it has been suggested that computer-mediated communication education environments provide a democratic and egalitarian medium for student discussion, first, there is some limited evidence suggesting otherwise and second, alternative explanations for and inferences arising from the findings of some studies indicated that the relationship between interaction and control in online distance education warranted further investigation.

### Purpose of the Study

The purpose of this study was to elaborate theoretical understandings, through the use of a grounded theoretical approach, that explain the relationship between the concept of control and interaction within the teaching learning process in a distance education course. The study focused on interaction that occurs between and amongst

learners and faculty in a course using computer-based communication as the medium for interaction. More specifically, this study sought to identify and examine factors that help to explain that relationship between control and interaction where people interact with each other online, in a course delivered at a distance, and to propose relationships that might exist between those factors.

### Research questions

To answer the broader research purpose presented above, this study was guided by the following specific research question:

How do participants' perceptions of interaction and control, and the features of online discourse within the research site, relate to, (by implying rejection, confirmation, extension or elaboration of) links between the (distance education) theoretical concepts of interaction and control?

This question was addressed by investigating the following sub-questions:

1. What patterns of interaction do students report when they participate in online discussion?
2. What factors do students perceive as barriers to, or as encouragement for involvement in the online discussion?
3. To what extent does the online discussion serve to enact activities, perspectives and identities noted by participants as relating to the factors identified in Question 2 above?

## The Use of Grounded Theory

The use of grounded theory in research will be discussed more fully in a subsequent chapter. This section outlines aspects of the use of a grounded theory approach as they impact on this study.

The research question stated is one that can best be addressed by researching it in a qualitative manner. Following Patton (1990), this means several things - that the nature of the problem is one that requires a naturalistic exploration of the topic, it demands attention to the holistic nature of the phenomenon; and it acknowledges that participants will have multiple perspectives of the phenomenon being studied.

A grounded theory approach is used with the intent to develop a representational theoretical model of participants' experiences that is grounded explicitly and meaningfully in the participants' reports and thus "closely related to the context of the phenomenon being studied" (Creswell, 1998, p. 56). The research used grounded theory to develop, elaborate or extend theoretical understandings in response to the research questions stated above.

The conceptual framework for these understandings was generated from data rather than previous studies. Such an approach may be considered to minimize the value of current theory and research to the research. However, while warning that "the literature can hinder creativity if it is allowed to stand between the researcher and the data" Strauss and Corbin (1998a) went on to add, "if it is used as an analytic tool then it can foster conceptualisation" (p. 53). Dey (1993) concurred, noting that knowledge is important. "There is a difference between an open mind and an empty

head. To analyze data, we need to use accumulated knowledge, not dispense with it. The issue is not whether to use existing knowledge, but how” (p. 63).

### Significance of the Study

A statement of the significance of the study requires that I address the questions “Who benefits? How?” In this section I suggest that learners will be the ultimate benefactors although their benefit will often be mediated through the actions of teachers. In addition, the generation of a substantive theory concerning interaction adds to current distance education literature and will enrich understanding of the processes of distance education.

The following rationale for the importance of talk in teaching and learning (A. Edwards & Westgate, 1994, p. 6-7):

knowing is thus not so much a state as a process, and as such is helped by social interaction; hence learning and teaching can be helpfully seen as collaborative and involving the social and cultural perceptions of all parties. Talk is central to this view of learning and knowing, being the primary medium of interaction, and because it helps learners to make explicit to themselves and others what they know, understand and can do

presents an argument central to the claim that online interaction has an important role to play in the education of learners involved in online distance education courses.

An understanding of the relationship between interaction and control, and the factors that undergird that relationship, in online discussions could help teachers and students to construct pedagogical contexts in which interaction is encouraged, is developed, and contributes to the attainment of learning outcomes sought by both teachers and learners. Thus this study will have significance for teachers who are predominantly the creators of online educational contexts; but it will also, as a

consequence of teachers' (assumed beneficial) actions be of value to their students. In addition students, who become aware of that relationship and the factors that undergird it will have an informed insight into the role of online interaction in their learning and the context in which they are operating, and will be more able to understand the nature of their online interaction and its purposes.

### Definition of Terms

For the purpose of the study the following definitions will be used.

A distance education setting (or class) is one in which the teacher and students are, for the purposes of instruction, normally separated from each other either spatially or temporally (or both), and where instruction is mediated by some form of technology.

Asynchronous computer-mediated communication refers to the use of networks of computers to facilitate interaction between spatially and/or temporally separated participants.

A grounded theory is one that is “inductively derived from the study of the phenomenon it represents ... it is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon” (Strauss & Corbin, 1990, p. 23)

The term discourse refers to the socially determined nature of language use, adopting the view that language is a form of social practice involving processes of production and interpretation (Fairclough, 1992), within particular social conditions.

Online interaction is the exchange of interpersonal communications that occurs using computer mediated communication tools. Interaction is defined holistically, following Gunawardena, Lowe and Anderson (1997), with all texts evident to the

'class' being held within the definition because of their place in the co-construction of the classroom context.

Learning is viewed from a Vygotskian perspective (Vygotsky, 1978) and seen as the process involved in moving from object- to other- to self-regulation.

Control is the opportunity and ability to influence, direct, and determine decisions related to the educational process (Garrison & Baynton, 1987).

### Organization of the Study

Chapter Two will present a review of relevant literature that serves to inform the conceptualization of the study. Chapter Three will detail the research methodology chosen as appropriate for the study.

## Chapter Two

### LITERATURE REVIEW

#### Introduction to the Chapter

The overall aim of this review is to present the knowledge base that serves as the background for this study and in particular to highlight concepts and ideas that are central to the research questions set out previously. This chapter reviews literature drawn primarily from the field of distance education. Literature from a small number of other fields is also considered briefly to elaborate and extend relevant issues and concepts.

The review is organized into seven sections. The first section sets out a general approach to the study that resonates with the context of the study and relates closely to the substance of the review that follows. The second section addresses the issue of interaction and the related complex of concepts that have arisen in distance education theory and research. A third section considers control as a theoretical concept within distance education, reviewing related concepts and the historical development of theory in this area. The fourth section briefly discusses power and control. These terms have particular meaning in the definition of control used in this study (that of Garrison and Baynton (1987)), but although their use in other areas of study is similar, explication, especially of the use of the term power, is helpful. The fifth section will discuss the links between the concepts discussed in the second and third sections, as those links are seen to exist in distance education theory. The sixth

section turns specifically to the area of computer-mediated communication and discusses its main features as a medium of communication in distance education. The seventh and final section focuses on the use of computer-mediated communication within and outside the area of distance education in relation to control. The review here will suggest that there are close but comparatively under-researched links between control and interaction in online discussions and therefore that an investigation of those links was warranted.

### A Socio-cultural Approach

Distance education has the unique characteristic of the normal separation of learner(s) and teacher. This separation and its impact on the teaching-learning process has led to the development of unique theories of distance education, but the field is still amenable to analysis and discussion in terms of some concepts from the wider field of education. In the context of this study, the comments of Barritt (1998) are particularly noteworthy.

In one sense, CMC-based education is different from conventional education and needs to be approached as a new context, not as a simple change in mechanism. But in another sense the issues highlighted here are the same issues conventional education has struggled with for centuries; communication, interaction and cohort formation, productive control and authority relationships and responsibility for learning (paragraph 1).

Given this, a useful start would seem to be brief discussion of teaching and learning in conventional settings in which the focus is on the role of language in education.

Mercer (1995) wrote about a process “in which one person helps another to develop their knowledge and understanding. It is at the heart of what we call ‘education’ (though education involves much more) and it combines both ‘teaching’ and ‘learning’” (p.1). The process, that he called the guided construction of knowledge, is based around talk between teachers and learners. Mercer’s work is based on work by Edwards and Mercer (1987). That earlier research was about “the ways in which knowledge ... is presented, received, shared, controlled, negotiated, understood and misunderstood by teachers and children in the classroom”(p. 1). The social and language based nature of the teaching-learning process was explored extensively by Edwards and Mercer (1987; Mercer, 1995). Their work is based very strongly on a Vygotskian perspective of learning (Vygotsky, 1978; Wertsch, 1985). Although Vygotsky’s work, and that of Edwards and Mercer, is based upon research with children there is evidence that this approach can be applied to adult learning and development as well (Bolton & Unwin, 1995; Gallimore & Thorpe, 1990; Moll, 1990).

A theme emerging from the study of the language based nature of learning is the role of power and control since “education is necessarily ideological and predicated upon social relations in which power and control figure largely” (Edwards & Mercer, 1987, p. 161). This theme of power and control in educational discourse is echoed in Edwards & Westgate’s (1994) work on classroom talk and is also evident in adult education. Johnson-Bailey and Cevero (1998) and Tisdell (1993) demonstrated how power relationships are played out in adult education settings, largely within the verbal interactions between participants.

The Vygotskian background of this work provides a socio-cultural approach to learning. Sociocultural theory is centrally concerned with the notion that human activity is mediated by material artefacts and by language and non-verbal signs. In learning and teaching, language plays two particular roles. It provides the medium for teaching and learning; and it is one of the materials from which learners create a way of thinking, and consequently “human knowledge and thought are themselves therefore fundamentally cultural, deriving their distinctive properties from the nature of social activity, of language, discourse and other cultural forms” (Edwards & Mercer, 1987, p. 20).

A sociocultural account of the role of interaction aims to take account of the relationship between human mental processes and their cultural, historical, and institutional settings (Wertsch, 1991, p. 6). This approach assumes that higher mental functioning derives from a social plane, and that human action, both individual and social, is mediated by tools and signs (Wertsch, 1991). This account has been used as the basis of a conceptual framework in some distance education research in the area of computer-mediated communication (e.g. Gunawardena et al., 1997; Zhu, 1996).

Framing this study in a sociocultural approach acknowledged the relationship between those undertaking action and the mediational means used. As Wertsch (1991) indicated, it is more sensible to speak of “individual-acting-with-mediational-means”, although an analytic distinction may be possible between the two (actor and means). In this study the mediational means (both language and the computer-mediated communication context) are immediate and historical concerns. The implications of a sociocultural approach for this research project stress the social

nature of learning, language as socially constructed and as constructing social reality, and the notion that individuals use mediational means in their actions but those means “shape the actions in essential ways” (Wertsch, 1991, p. 12).

Such a view is important to this study because of the way it is commensurate with the conception of the teaching-learning process as socially based and dependent on language. In addition, as this review will illustrate, concepts central to the study proposed here are most appropriately considered within the wider purview of human action, recognizing its social and historical roots.

### Distance Education and Interaction

This section reviews distance education theory to illustrate a complex of concepts related to the notion of interaction between people in distance education courses. It will show how interaction has been developed as a concept within the arena of distance education, revealing as much of a definition of interaction as each theory provides, and indicating the rationale for interaction within each theory. The section will also provide an overview of the empirical study of interaction in distance education and note points from research that help to develop an understanding of that concept.

#### Theory and Interaction

Moore’s work often provides the conceptual basis for distance education research. It is focused on the transactional distance that exists within programs. Transactional distance was described as “...a function of two crucial variables in the learner-teacher transaction, which we have chosen to call dialogue and structure”

(Moore, 1980, p. 21). To balance the element of structure in distance education, Moore called on the concept of learner autonomy. This variable was employed to “...allow for the fact that many learners chose their own learning objectives and conduct, construct and control much of the learning process...” and to acknowledge that “...learners have different capacities for making decisions regarding their own learning” (Moore & Kearsley, 1996, p. 205). In Moore’s theory, the success of distance education is dependent on the extent to which an institution and instructor can “provide the appropriate structure of learning materials, and the appropriate quantity and quality of dialog between teacher and learner, taking into account the extent of the learner’s autonomy” (Moore & Kearsley, 1996, pp. 205 – 206).

In an early definition, Moore described Dialog as “...two-way communication between student and teacher” (1980, p. 21). In 1983, Moore refined this definition to indicate that Dialog was “the extent to which, in any education programme, learner and educator *are able to* respond to each other” (cited in Munro, 1998 p. 15, italics added) which emphasizes the changeable nature of the variable Dialog, and noted that it was determined by the content being studied, the educational philosophy of the educator and learner and by environmental factors, of which the medium of communication is said to be most important. The italicized words seem to indicate that Dialog is a potential to be realized.

Moore fleshed out the nature of Dialog by saying that it is “an interaction or series of interactions having positive qualities...is purposeful, constructive, and valued by each party. Each party...is a respectful and active listener; each is a contributor and builds on the contributions of the other party or parties” (Moore,

1993, p. 24). Moore implied that social dialog should not be considered as a form of dialog that would contribute to the decrease of transactional distance. He says “the term ‘Dialogue’ is reserved for positive interactions, with value placed on the synergistic nature of the relationship of the parties involved. “The direction of the dialogue in an educational relationship is towards the improved understanding of the student” (p. 24). Later, Moore and Kearsley indicated that “Dialog is a term that helps us focus on the interplay of words, actions and ideas and any other interactions between teacher and learner when one gives instruction and the other responds” (1996, p. 201) a rewording that focuses once again on teacher-learner interaction and seems to hint at the idea of interaction beyond the verbal as might occur between teacher and students in distance education via interactive television. In sum, in this theory, Dialog, as a conceptual variable, comprises interactions between teacher and learner, those interactions have to be ‘positive’ and their purpose is to improve the student’s understanding of the topic being learnt.

One interesting aspect of the theory is the focus on interaction occurring between teacher and learner. The value of student-student interaction is largely dependent on the age, experience and autonomy of the learners. Moore and Kearsley said “Generally, inter-learner discussions are extremely valuable as a way of helping students to think out the content that has been presented and to test it in exchanges with their peers” (1996, p. 132) although it was also noted as being valuable as students learn the skills of interaction.

Garrison’s work (Garrison, 1989; Garrison & Shale, 1990; Shale & Garrison, 1990) arose from his concern over two related issues. First was his concern over

what he regarded as a lack of conceptual clarity in the use of the term independence, a topic what will be addressed in the next section. The second was his view that education must be regarded as a transaction between teacher and learner. Garrison and Shale (1987) had previously sketched out the importance of this latter point in describing three criteria that they felt distinguished the learning transaction at a distance. Their criteria proposed that:

1. the majority of educational communication between (among) teacher and student(s) occurs noncontiguously;
2. two-way communication between (among) teacher and student(s) is necessary to invoke the educational process at a distance; and
3. technology mediates the two-way communication (p. 11).

Garrison (1989) reiterated the importance of communication stating, “Distance education must involve two-way communication between (among) teacher and students(s) for the purpose of facilitating and supporting the educational process” (p. 6). This communication, according to Garrison, was necessary for the negotiation of meaning between teacher and student, is based upon seeking understanding through dialog and debate, and induces knowledge. Thus Garrison argued that learning in distance education is essentially a collaborative process between and among instructors and learners, where interaction enables the challenging of perspectives, the negotiation of meaning, and the use of prior experiences to inform current learning processes (pp. 12-15). More recently, in relation to the use of computer-mediated communication, Anderson and Garrison (1998) extended the

discussion of communication, providing a set of characteristics of educational communication that was stated as follows:

Educational communication in its best sense should be reciprocal (i.e. two-way), consensual (i.e. voluntary), and collaborative (i.e. shared control). ... [it] must facilitate the construction and negotiation of meaning ... is dependent upon critical discourse and knowledge confirmation ... be explanatory and not just confirmatory (p. 98).

Holmberg disputed the early emphasis on the centrality of two-way communication in distance education that Garrison offered. Holmberg (1990, cited in Annand, 1998) argued that mediated communication has always been a primary characteristic of distance education, but one that merely supplemented the traditional correspondence-based model of distance education. Through his examination of distance education, Holmberg developed a theory of guided didactic conversation. For him, guided didactic conversation involved the development of written materials in a personal style, using first and second person pronouns, with the aim of involving the student cognitively and emotionally in the study of the topic and its related issues (Holmberg, 1983). In addition to this type of conversation involving content, Holmberg emphasized the need for “friendly, non-contiguous interaction between students and tutors, counselors, and other staff in the supporting organisation” (Holmberg, 1995, p. 175). The set of hypotheses that Holmberg derived from the general statement of his theory can be used to tease out the importance of this general statement about interaction. Holmberg’s hypotheses stress the importance, for learning, of communication between the student and others interested in the study, and suggest the need for empathy between those involved in the teaching and learning in order to strengthen and support study motivation and study pleasure. These

hypotheses about distance learning and interaction are supplemented by the hypothesis that having “communication facilities constantly open to students for questions and exchanges of opinions with tutors and counselors” (Holmberg, 1995, p. 176) is favorable to distance teaching. As Wort (1997) noted though, Holmberg’s emphasis is on the ownership of course material, the basis of the guided didactic conversation, being with the teacher, thus stressing the authoritative nature of much distance education material (p. 176). The use of mediated communication is then primarily for the purposes of motivation rather than the negotiation and development of meaning and this indicates the source of the difference between Holmberg’s approach and Garrison’s.

Verduin and Clark (1991) presented a model of distance education that draws heavily on the work of Moore, and to a lesser extent, Keegan. From Moore’s work, they acknowledged the centrality of the concept of separation of teacher and learner, while from Keegan’s they took the requirement of evaluation and two-way communication. They then defined distance education as a subset of distance learning “that includes evaluation by distance educators and two-way communication with them and that usually includes the structuring of media content and use by the educator” (Verduin & Clark, 1991, p. 124).

Within Verduin and Clark’s approach, Moore’s concepts of Dialog, structure and learner autonomy are accepted “as a good starting point” (p. 124), but considerably redefined, based on arguments drawing largely on Pratt (1988, cited in Verduin and Clark, 1991). Dialog is expanded to include the element of emotional support and renamed dialogue/support (this is the term as used by Verduin and Clark

and will be used in this form here). This concept of dialogue/support has been criticized (Wort, 1998) since the directly proportional relationship between Dialog and support assumes that high levels of Dialog are associated with high levels of emotional support and “does not allow that high dialogue can occur simply because there is little support available for the learner” (p. 177). Verduin and Clarke’s emphasis on support echoes the concern that Holmberg has for empathetic relationships between teacher and student, but their conceptualization of the concept in combination with Moore’s Dialog is inadequate for the reason noted above.

Several others have written about interaction within distance education. Wagner’s most important contribution (1994; 1997) was to highlight the difference between interactivity and interaction by pointing out that interactivity is best thought of as a property that is afforded by a medium and interaction as a behavior where individuals and groups directly influence one another. The distinction is made to point to the importance of interaction within distance education and the need not to confuse it with the affordances of interactivity. In discussing interaction, Wagner noted that Moore’s (1989) schema of interactions “identifies the agents involved in or affected by a given interaction” (1997, p. 21) but added that “the explicit description of an interaction’s purposes, intents and outcomes are [sic.] still left to the imagination” (p. 21). To Wagner, knowing the intended outcome of interactions was important since it “permits interactions to serve more effectively as a means to the end of performance improvement” (p. 21). The outcomes that Wagner stressed are those that “allow learners to tailor learning experiences to meet their specific needs ... enable clarification and transfer of new ideas and transfer of new ideas ... promote

intrinsic motivation on the part of a learner” (p. 22). Wagner’s work served to bring together the range of purposes that are seen for interaction within distance education theory.

Mason, (1994) wrote about the educational importance of interaction, noting its centrality in many areas of education in the 1990s. Mason appears to use interactivity and interaction as synonymous terms, first pointing to the range of uses for the term interactivity, and then saying that “It would be useful if the word ‘interactivity’ were reserved for educational situations in which human responses – either vocal or written – referred to previous human responses” (p. 25). The rationale for interaction is clear: “Interaction has been shown to benefit learners at the affective level. It increases motivation and interest in the subject....Opportunities for learners to express their own points of view, explain the issues in their own words and to formulate opposing or different arguments, have always been related to deep-level learning and the development of critical thinking” (p. 26). Here again the outcomes of interaction are stressed, with interaction being seen as having a number of useful educational outcomes associated with affective and cognitive educational goals.

Finally, Evans and Nation (1989) contended that dialog is central to distance education. In their definition of dialog they showed there are several interpretations of the concept and then constructed an explicit definition in these terms: “dialogue involves the idea that humans in communication are engaged actively in the making and exchange of meanings, it is not merely about the transmission of messages” (p. 37). In common with the ideas of Moore, Garrison and Verduin and Clark this definition creates learners as active participants in the teaching-learning process

despite the distance between teachers and learners. Evans and Nation were writing in response to a debate in distance education between the advocates of technical solutions to the issue of teacher-student relations, and those who advocate interaction. In developing this response they were echoing Garrison and Shale (1990) who, at the same time, were saying “there is a need in distance education for a new framework and perspective that recognizes the necessity of dialogue and academic discourse to acquire knowledge. ... The challenge is to preserve (restore?) the integrity of the educational transaction through the appropriate sustained dialogue between teacher and student” (p. 133).

Evans and Nation (1989) not only urged distance educators to reconsider the value of interaction in education, but pointed to how that might happen, saying that distance educators should develop that reconsideration by “connecting distance education theory to theoretical endeavors in education and social sciences more generally” (p. 38). In making this assertion they drew on Giddens’ work to highlight the role of learners as meaning-makers, and the centrality of power relations in education. The implications for distance education are that students must be seen as agents in their own learning; that dialog should be encouraged between students as well as between student and teacher; and that it is important to research the power relations in distance education. This last implication has close links to Garrison’s concept of control. Evans and Nation indicated that power is related to the ways students study and the level of student autonomy, bringing to mind two of the three dimensions of Garrison’s concept of control – power and independence – and Moore’s use of learner autonomy as a central concept in his theory. Discussion of the

concept of control in distance education theory will be held over until the next section.

This review of theoretical approaches has highlighted the centrality of interaction in distance education. This emphasis on the interaction between teachers and students as a two-way communication process brings attention to the role of language, and therefore the interdependence of participants and the power relations that exist between them. In the following sub-section research into interaction in distance education will be reviewed without regard for the medium of communication. This broad approach is adopted to ensure that relevant points from outside the area of computer-mediated communication, which is the context for the study proposed here, will be noted as they help to clarify the nature of interaction within the study context.

#### Empirical Research and Interaction

While research into interaction has been part of the study of distance education since the field's construction as an area for academic endeavor in the 1970s, discussion of, and research into interaction expanded considerably throughout the 1990s alongside the increased use of modern information and communication technologies for communication and course delivery. Interaction research has developed along particular lines, depending on the interests and goals of researcher.

Studies seeking to compare distance and face-to-face settings in terms of interaction levels or types may also report on learning outcomes. Those that do will typically report similarity in learning outcomes (Card & Horton, 1998; Dohner,

Zinser, Cullen, & Schwarz, 1985; Miller & Webster, 1997; Ritchie & Newby, 1989) and then go on to consider how interaction might, or might not, differ.

A major interest is in differences in levels of interaction between remote interactive television (ITV) classes and those with a live instructor. A comparison is made because of the perceived similarity of the two contexts. Rost (2000) said that a common concern with ITV is reduced interaction because of separation of teacher and student that results in lower quality (but not poorer outcomes) of the learning transaction. Studies that report interaction levels provide us with mixed findings. Some report that levels of interaction involving distance students in remote interactive television classrooms are not significantly different from those of the students in classes with a live instructor (Dohner et al., 1985; Murphy, 1999; Rost, 2000) while others indicate that interactions involving distance students are significantly fewer (Bauer & Rezabek, 1993; Ritchie, 1993), a position also supported by Kelsey (2000) who found that students at remote sites do not take advantage of opportunities for interaction. Similar comparisons are rarely made when distance students are using text based CMC, because of the evident difference between verbal and textual interaction, and the difficulty of establishing equivalency of units of analysis. The variable nature of the above results calls for an explanation.

Potential explanations arise from several sources. Oliver and McLoughlin's (1997) study of five separate audiographics-using classrooms revealed considerable difference between the teachers. They noted that the idiosyncratic approach of teachers gave rise to considerable differences in the ways in which lessons were conducted, and thus the extent to which interaction developed, although the

affordances of the technology provided some constraints and imposed some uniformity on teaching style. Schmidt, Sullivan and Hardy (1994) noted that increasing familiarity with the distance education setting gave rise to an increase in the extent of interaction. Miller and Webster (1997) considered the extent to which distance students perceive a need for interaction, suggesting that adult distance learners “possessing strong motivation, study skills and discipline” (p. 11) may not see such a need. These studies provide ways of considering difference and attempting to account for it.

Research into the nature of interactions in these non-computer mediated areas show that where technologies are used to extend the traditional classroom, there continue to be elements of comparison with face-to-face settings. Dohner, Zinser, Cullen and Schwartz (1985) suggested that teachers are more expository and are more concerned with direction and control when teaching remotely. This view is supported by Oliver and McLoughlin (1997), who reported that interaction via audiographics was primarily expository and procedural, and is complemented by Ritchie and Newby (1989) who indicated that students in traditional classes have a greater opportunity to ask questions. Dillon, Hengst and Zoller (1991) also indicated that teacher based strategies are most frequently used in ITV settings. They noted that discussion is used as an instructional strategy; however, students were more likely to address questions and comments to the teacher (Oliver & McLoughlin, 1997).

Investigation of the extent and nature of interaction in computer-mediated communication settings in distance education is a distinct line of research. Here, most research does not concern comparison with a traditional classroom, although an

exception to this general rule is mentioned here first. The exception is the work of Card and Horton (1998) who found that interaction in CMC settings involves students more uniformly than does interaction in face-to-face settings, although others have noted that CMC settings have their own inter-individual differences in levels of interaction (Fahy et al., 2001; McKenzie & Murphy, 2000; Picciano, 1998; Wegerif, 1998). These studies point to participation as a measure of the extent of interaction. The investigation of participation also involves looking for characteristics of discussion such as patterns of timing of access, numbers of messages and their length, and proportions of group discussion participants. Investigating patterns of participation was the focus for much of the earlier research into computer-mediated communication in distance education (Levin, Kim, & Riel, 1990). Bullen (1997) undertook a comprehensive review of such participation studies and noted that participation in computer conferencing could be characterized as varying considerably from situation to situation. Through his review he suggested the following as factors that might affect participation:

- The absence of nonverbal cues;
- Information overload
- Asynchronicity
- Access problems
- Keeping track of multiple discussions and the fragmented nature of communication
- Cognitive maturity of learners
- Technology getting in the way

- Lack of time
- Cost of access (pp. 85-86).

Participation is an obvious prerequisite for interaction, and these variables can be seen as impacting on the ability of the learner to become involved in interaction. In this sense they provide a link to the concept of control that will be discussed in the next section. The determination of differences in participation levels may alert researchers to the need for careful investigation of the context of involvement in computer-mediated communication. McKenzie and Murphy (2000) used analysis of both the extent and the nature of interaction to provide a broad picture of online discussion and to evaluate that discussion in terms of the use of the discussion forum and the content and type of messages. Analysis of both areas provides a set of complementary measures for the researcher. The former is important because it identifies who is speaking, when, how often and to whom. The latter is essential to tease out the nature of the interaction in terms of the way people produce and interpret the text of that interaction and to understand the social context of that production and interpretation. Research into the nature of online discussion in distance education is discussed next.

More recently research has focused on the nature of interaction rather than its extent. This approach to research in computer-mediated communication settings will typically draw on a particular theory or empirical approach, set out the basic features of the theory or approach and then investigate the nature of online interaction against them. A good example of such a study is the work of Zhu (1996). Zhu took the conceptual framework of Vygotsky's work as the basis for understanding the process

of learning, used it to argue for the importance of interaction of various kinds, and noted that this interaction will maximize cognitive growth. Learning was also seen as a “constructive process of engaging in self-regulated, constructive and reflective activities” (Zhu, 1996, p.823). Interaction was then analyzed in terms of a series of categories derived from the theory with the aim of disclosing “the relationship and the nature of students’ and instructors’ notes (messages) in the electronic conference, thereby providing a better understanding of how students construct new knowledge and understanding” (p. 824). The overall purpose of such work is to demonstrate that CMC settings provide an appropriate context for learning given a particular theoretical approach.

Zhu (1996) reported three main findings. First, that although discussion was related to a series of main themes, there was considerable diversity and exploration of topics, and there was less control of the topic of discussion. Second, student roles in discussion varied. Sometimes students were clearly teaching and mentoring, while on other occasions they were clearly students. Third, everyone was engaged in discussion at some level – everyone participated.

Zhu’s finding about exploration of topics is echoed in the work of Garrison, Anderson and Archer (2001). Having developed a ‘practical inquiry model’ that operationalized the process of critical discourse and thinking in a text-based computer conferencing context, the authors used it to assess the nature and quality of a discussion that occurred in an online conference. They found that a large proportion of messages were concerned with exploration of topics and very few were concerned

with the later stages of the model - integration (construction of problem solutions) and resolution (assessment of proposed solutions).

A similar finding was reported by Kanuka and Anderson (1998) who analyzed an online conference using a framework developed with a base in activity theory, to represent the phases of the collaborative construction of knowledge (Gunawardena et al., 1997). Kanuka and Anderson also found an overwhelming number of messages related to the first exploratory phase of knowledge construction. In the first use of this latter model as a guide for analysis (Gunawardena et al., 1997) it was also noted that “a predominant number of postings” (p. 421) occurred in the early stages of the model – exploration and negotiation of meaning. McKenzie and Murphy (2000) also reported results that indicate exploration and negotiation of meaning dominated interactions in a computer conference.

Concerns about the apparent low cognitive level of interaction in computer-mediated communication based settings are expressed by Garrison, Anderson and Archer (2001) who suggest “there may have been deficiencies in the facilitation in terms of guiding and shaping the discourse toward higher-order cognitive activities” (p. 14). Educators have expressed the view that while computer conferencing might allow the possibility of the reflective elements of cognition, they will only occur through appropriate course design and skilful moderation (Eastmond, 1995; Gunawardena & Zittle, 1997; Harasim, 1989; R. Mason, 1991). This avenue was explored by Howell-Richardson and Mellor (1996) who showed that differences in moderator responses had an impact on the pattern and nature of interaction, with marked differences in the level and type of task-oriented interaction.

The theme of the cognitive level of discussion has been a dominant one in investigations into the nature of computer-mediated communication in distance education settings. A further theme is emerging around the idea of social presence—described as “the degree to which the other person is perceived as a ‘real person’ in mediated communication” (Gunawardena & Zittle, 1997, p. 9). This theme has arisen to account for the failure of early arguments about the absence of social cues (Keisler, Siegel, & McGuire, 1984) to account for the positive relational behaviour reported to exist in computer-mediated communication settings (Baym, 1998; Walther, 1992). Garrison, Anderson and Archer (2000) have used this concept in an attempt to conceptualize factors underpinning the development of “learning communities” in computer-mediated communication environments. Gunawardena and Zittle noted the dearth of research into social presence in distance education despite a research history in other areas, and conducted a study to determine the extent to which social presence was a predictor of satisfaction in a computer-mediated communication distance education environment. They found that social presence was a strong predictor of satisfaction and suggested that their finding “supports the view that the relational or social aspect of CMC is an important element that contributes to the overall satisfaction of task-oriented or academic computer conferences” (p. 19).

### Summary

This review of findings of research into interaction between and among students and teachers in distance education has highlighted differences in the extent and nature of interaction that occurs. Differences in extent of interaction in ITV settings compared with face-to-face may be explained by different teaching strategies,

and with students, different experience levels and approaches to learning. In these settings interaction is more expository. Within CMC settings participation in online discussion is situationally dependent and determined by a considerable range of factors. In addition, findings about the cognitive level of interaction point to the need for effective moderation to ensure high level cognitive discussion. The requirement of intervention of a moderator in online discussion and the more recent work in the area of social presence specifically highlight the negotiated and relational characteristic of online interaction, thus pointing to the interwoven nature of the concept of interaction with that of control which is discussed next.

#### Distance Education and Control

In North America, the foundational concepts of distance education theory were developed through the 1970s. This historical and geographical conjunction gave rise to a particular avenue for theory development. The concept of learner autonomy in particular, drew from work by Wedemeyer (Moore & Kearsley, 1996) but also called on the work in the areas of adult education (for example, through the work of Knowles and Tough) and humanist psychology (represented for example by Rogers and Maslow). Distance education was assumed to demand a certain level of self-direction or autonomy on the part of the learner since the physical separation between teacher and learner also implies that there is some independence from the teacher's control of the learning process. Learners potentially have more control over how they learn (Moore, 1972).

In distance education, distinctions and relationships between independence, self direction, autonomy, and control have been mooted, and have given rise to a

number of perspectives and studies. Moore (1993) drew on Wedemeyer's notion of independent study but used the term learner autonomy to describe the "extent to which in the teaching/learning relationship it is the learner rather than the teacher who determines the goals, the learning experiences, and the evaluation decisions of the learning programme" (p.31). This definition was operationalized on the basis of a programmatic perspective—in terms of "the degree of learner autonomy permitted by each programme" (p. 32). Moore noted not all adults were necessarily fully autonomous learners, but that a fully autonomous learner would be emotionally independent of the teacher (p. 31). In addition, he is clear that autonomy is not just a characteristic of learners; it is also a goal of the educational process (p. 32).

In drawing on the work of Pratt (1988, cited in Verduin and Clark, 1991), Verduin and Clark suggested that Moore's concept of autonomy should be elaborated since "it is not logical to expect that every field be equally well suited to the promotion of autonomy through student-shared control of objectives, study methods and evaluation decisions" (p. 127). They suggested that the concept should take account of the student's general competence in terms of study skills and self motivation as well as the student's competence in the field at the level of the course. To signify this difference they renamed the concept *general competence/self-directedness*. This elaboration thus suggests that autonomy is concerned with factors related to both the learner and the learning environment.

Garrison's concern over what he regarded as the lack of conceptual clarity in the use of the term independence, which he noted was used synonymously with autonomy (Garrison & Baynton, 1987) led to a further analysis of this concept in the

attempt to account for the complexities of educational transactions. Garrison and Baynton suggested the use of the concept of learner control in order to achieve that end. “Control is concerned with the opportunity and ability to influence and direct a course of events. Control not only implies having choices and making decisions, but includes the capability to effect change” (Garrison, 1989, p. 27). Control is valuable in the educational process because “(w)ithout substantial control (i.e. information and communication) in the educational process learners are less likely to realize their potential” (p. 39).

Garrison and Baynton (1987) discussed the inter-relationship between independence, support and power as dimensions of control, and described control as a crucial and central concept in distance education. Garrison and Baynton noted that it was “not the independence associated with the non-contiguous nature of the transaction” (p. 14) that was the most important attribute of distance education, but rather the education transaction itself. Their focus in relation to control was on the nature of the interaction between teacher and student, and links control with communication. They said, “Clearly, communication is the process that makes an educational transaction possible. Two-way communication provides the means for negotiation and dialogue. This in turn determines the balance of control which will maximize educational development” (p. 14). More recently, Anderson and Garrison (1998) also suggested that the reciprocal component of educational communication, its two-way nature, moves the balance of control of the educational transaction toward the student. The major contribution here is that the proposal shifts the emphasis from an institution being the determinant of control in the learning situation

to recognition of the role of learners. Control in the learning situation is a matter of negotiating the balance between institutional and personal factors.

Baynton (1992) undertook an empirical test of the model of learner control proposed by Garrison and Baynton (1987), primarily using factor analysis of student responses to a questionnaire to determine the extent to which that concept is comprised of the three dimensions of independence, support and power. The three proposed dimensions were defined as follows. Independence was the freedom to make choices without external influence or restriction; competence (which replaced the use of the term power) is the ability or capacity to take part in and assume responsibility for the learning process; and support refers to the resources that the learner can access in order to carry out the learning process (Garrison and Baynton, pp. 6, 7).

Baynton (1992) found that there was some congruence between the student experience and the model but added that the dimensions might be more complex than proposed. She identified three major factors related to the proposed dimensions, one related to student competency, one to interpersonal support from a teacher, and a third concerning student input and choice in course content and evaluation. An additional three minor factors, one related to each of the major factors, emerged through the analysis. These factors were: value orientation, reflective of learner attitudes, values and a predisposition to learning, which is related to competence; access to resources, reflective of availability and accessibility of human and material resources, and related to support; and flexibility, reflective of students' ability to make decisions about the timing of course activities, which is linked to independence or choice.

Responses to a small number of open-ended questions were also gathered from the study participants. These responses widened the scope of the analysis and provided several themes that needed to be considered as contributing to the learner's perception of control. These themes included the background of students; the level of academic support provided by the teacher; the amount of emotional support provided; institutional administrative policies; and the student's learning environment (p. 26). Baynton then suggested that control could be conceptualized as the interaction of three categories or complexes of factors—a predispositional category of factors that “predispose the learner and/or the teacher/tutor to enter the distance learning situation” (p. 26), an operative category that relates to factors “that are interactive and operate within the context of communication...during the planning and instructional phase of learning” (p. 28), and an environmental/contextual category of factors that “contribute to the enhancement or inhibition of the amount of control experienced by the learner” (p. 28). Baynton said that conceptualizing control in this way allows the complexity of the teaching-learning situation to be addressed. In addition, she indicated that the analysis reinforced the interdependence of student and teacher in the teaching-learning process. Wort (1998) noted “such considerations shift the emphasis away from a notion of learner control towards considering the negotiable interaction between the teacher and learner within the boundaries and structures of the environmental/contextual factors” (p. 174).

Davie and Wells (1991) proposed a concept of empowerment or personal power which they described as “the expectation and enabling of a student to take a visible and meaningful role in the electronic classroom” (p. 16). This concept was

comprised of two elements: a sense of mastery related to skills for electronic classroom participation, and a sense of community which entailed the feeling of belonging to a supportive group. These two elements are closely related to the dimensions of competence and support respectively that are present in Baynton's (1992) concept of control.

### Summary

This section has shown how the concept of control in distance education theory has evolved from Wedemeyer's initial statement about independence, through Moore's concept of autonomy and Verduin and Clark's reconstrual of that, to the more elaborated concept of control proposed by Garrison and Baynton. This evolution has gradually widened the nature of the concept to take explicit account of the institutional and social context of learners and learning, as well as learner characteristics. From Moore on these authors have linked control (or their related concept) to the element of communication within distance education and a subsequent section will indicate the nature of those links. First though, there is a brief discussion of control and power.

#### A Brief Note on Control and Power

As was noted in the previous section, the complex of concepts related to control have a history that draws partially from the field of adult education, through the work of Knowles, and humanistic psychology. With regard to this approach, Merriam (2001) wrote:

Based on humanistic psychology, Knowles's version of andragogy presents the individual learner as one who is autonomous, free, and growth oriented. Critics have pointed out that there is little or no acknowledgement that every person has been shaped by his or her culture and society, that every person has a history and that social institutions and structures define, to a large extent, the learning transaction irrespective of the individual learner (p. 7).

Merriam's acknowledgement of this criticism and acceptance of the role of history, culture, and structures in individual learning echoes the call of Evans and Nation (1989), noted above, for consideration of the wider social world that distance learners inhabit. The emphasis that Garrison and Baynton (1987) placed on the learning transaction and the attempt to recognize the broader context that that emphasis implied has taken this concept away from what Merriam called "the blinding focus on the individual learner" (2001, p.11) and opened it to that wider world. The concept of control that Baynton (1992) articulated includes not just a sense of what the learner can do within the learning transaction through the dimensions of competence (power), support and independence, but also acknowledges the importance, to control, of a number of direct and indirect factors related to the institutional and wider social contexts facing students. Control is thus seen not just as the power that individuals have to give effect to their wishes, but as acknowledging the relations of power within which they exist and taking account of the range of forces that impact on their ability to attain their goals.

But what of power? The point that Merriam makes, placed alongside that of Evans and Nation, reflects the sociological debate concerning the relative impact of structure and agency—the "relationship between the subjective powers of human agents and the objective powers of the realities they have a hand in producing"

(Parker, 2000, p. ix). The key point is that humans have agency to act, a power to direct their efforts to take control of their lives, but that this power is always in relation to the powers of others and of social structures (Parker, 2000). The relational nature of power points to the need for the wider conception of control developed in the preceding paragraph.

### Interaction and Control in Distance Education Theory

The discussion of the first two sections in this chapter focused on the concepts of interaction and control. The theoretical writing of Moore, Verduin and Clark, and Garrison most explicitly provides for links between those concepts and will be reviewed here.

Moore's theory of transactional distance emphasizes that transactional distance is a pedagogical phenomenon. It is "a distance of understandings and perceptions that have to be overcome by teachers, learners, and educational organizations" (Moore & Kearsley, 1996, p. 200). Two concepts, Dialog and structure, capture the range of teaching behaviors that are needed to describe transactional distance. The second section in this chapter reviewed the concept of Dialog. Structure "expresses the rigidity or flexibility of the course's educational objectives, teaching strategies, and evaluation methods, [and] it describes the extent to which course components can accommodate or be responsive to each learner's individual needs" (p. 203). Structure and Dialog are variables that relate to the nature of the program in which learners are involved and provide an indication of the measure of transactional distance. The concept of learner autonomy is used to balance that of structure and to acknowledge that "many learners chose their own

learning objectives and conduct, construct, and control much of the learning process”

(p. 205). Thus,

what determines the success of distance teaching is the extent to which the institution and the individual instructor are able to provide the appropriate structure of learning materials, and the appropriate quantity and quality of dialog between teacher and learner taking into account the extent of the learner’s autonomy (pp. 205-206)

In practice, and repeating the quotation from the previous chapter:

Students with advanced competence as autonomous learners appeared to be quite comfortable with less dialogic programmes with little structure; more dependent learners preferred programmes with more dialogue; some wanted a great deal of structure; while others preferred to rely on the informal structure provided in a close relationship with an instructor. (Moore, 1993, p. 32).

With this summation of the application of the theory of transactional distance, Moore highlighted the links that exist between the elements of the theory and provides illustration of the way control, conceptualized more tightly as learner autonomy, is related to Dialog.

As noted earlier, Verduin and Clark (1991) drew heavily on Moore’s theory of transactional distance, differing primarily in the way they refined the three core concepts. Their equivalents of Moore’s Dialog and learner autonomy have been discussed. The remaining concept is that of structure/specialized competence. This concept relates to the formality of the subject matter and acknowledges that learners will have different degrees of expertise in a subject, where that expertise is dependent on the structure of the subject matter (Verduin and Clark, p. 125).

Using their re-definition of those concepts they define twelve categories of learning experience where eight are based on each of the dimensions having a high and low pole, and a further four where dialogue/support is not seen as part of the

teaching-learning process. Their variation in definition of the core concepts allows them to recognize students as differentially autonomous in different learning situations depending on the educational setting, subject matter and the extent of dialog.

Garrison and Baynton (1987) declared that “the degree of control that a learner has over the educational experience is manifested in, and determined by, the communication between the teacher and the student” (p. 9). In relation to control therefore, the communication process in distance education requires special attention because it is non-contiguous and mediated by technology.

Rather than an explicit statement of formal relationships, Garrison and Baynton (1987) set out a series of communication issues that can be examined to establish and understand the degree of control that students have over the learning process, and the balance between the dimensions of control. The first issue asks who initiates the communication. The initiator is seen as being “in a more advantageous position to control the educational transaction” (p. 11). Pacing of study by the teacher for example has the potential to represent a loss of control on the part of the student. The issue of the timing of the communication process is the second issue. Garrison and Baynton suggested two phases of communication—a planning phase and an instructional phase—and suggest that where communication occurs during the former with the aim of negotiating learning objectives, content, learning activities and evaluation procedures, (the dimension of independence) student control will be greater. However, if that is not the case, and students are involved in communication only during the instructional phase then student control can be increased to the extent

that they are able to decide when, where, and how learning will occur. Frequency and immediacy of communication between teacher and students is the third issue. “The communication process high in frequency and immediacy has greater potential for control by the student than communication characterized by low frequency and immediacy” (p. 12). Finally, Garrison and Baynton noted that control is dynamic and situationally determined, and that the level of student control may vary across an individual communication session (such as a teleconference) as well as across the length of an entire course.

Research testing the relationships proposed above has been undertaken. Saba and Shearer (1994) used a system dynamics model to verify the relationships proposed within the theory of transactional distance. Using a system of nine variables (Dialog, structure, transactional distance, learner control and instructor control, with two further variables each for the speech acts of the instructor and the student) they undertook analysis of a telelesson. Among other results, the analysis showed that there was a positive relationship between learner control and Dialog such that an increase in learner control led to increased dialogue, which in turn led to a decrease in transactional distance.

Bischoff, Bisconer, Kooker & Woods (1996) and Chen and Willits (1999) both used factor analysis techniques to analyze questionnaire responses in attempts to tease out the dimensions of each of Moore’s theoretical constructs. Bischoff et al. developed a questionnaire with 68 items where responses to the questions were designed to confirm the concepts of Dialog, structure and transactional distance and to examine the relationship between them. However, there was no attempt to include

questions related to learner autonomy. Given this it is the comments about Dialog, arising from the factor analysis, that are of most interest here. The sole item loading into the Dialog factor related to the number of times students communicated with the teacher. Bischoff et al. suggested that this factor “clearly requires further study and elaboration to uncover the many aspects of dialogue in education” (p. 14). They noted, in addition, that electronic mail appeared to enhance Dialog and that communication between students and teachers flourished in this medium.

Chen and Willits (1999) also used factor analysis of questionnaire responses to investigate the nature of the concepts of dialog, structure, and learner autonomy. These variables were largely derived from Moore’s theory of transactional distance but dialog and learner autonomy were defined in a modified form. Their definition of dialog encompassed two-way communication between students, while the definition of learner autonomy allowed for both the student’s ability to learn individually and the preference or need for collaborative learning.

The analysis showed the multidimensional nature of all three variables. Dialog was represented as a concept by three factors representing in-class discussion, out-of-class electronic communication, and out-of-class face-to-face interaction. The analysis revealed that structure was represented by a set of items concerned with course organization such as objectives, deadlines and readings, while learner autonomy was represented with almost equal weight by factors representing independence and interdependence.

## Summary

The concepts of interaction and control, in all their variation, lie at the heart of the distance education theory considered here. Within its wider scope, that theory has pointed to the proposed nature of relationships between these concepts. The empirical studies reviewed tend to corroborate the theoretical constructs and the work of Saba and Shearer (1994) supports the broad relationships proposed. However the factor analysis of the two remaining studies has served to remind us of the complexity of the concepts involved.

Thus far, this review has provided focus, through the consideration of the concepts of interaction and control and discussion of the relationship between them, but has viewed these areas broadly and not yet confined itself to the context of the study that is proposed here. In the next section that context, computer-mediated communication, will be examined and a subsequent section will consider the issue of control and power in online interaction.

## Features of Computer-Mediated Communication

Interaction through the use of computer-mediated communication in distance education courses is a pervasive factor occurring throughout each day and week of a course (Harasim et al., 1995; S R Hiltz, 1995). Moore (1993) said of this form of communication “the personal computer is opening new opportunities through its combined asynchronicity and relative lack of structure ... this is something not available before in either distance education or conventional education” (p. 33). As noted in the previous chapter, the use of computer-mediated communication

environments in distance education has become more prevalent throughout the 1990's. Throughout this period, discussion of and research into the features of computer-mediated communication has enriched understanding of the features of this form of communication in distance education. In this section particular features of computer-mediated communication will be noted and discussed while one will be held over for more detailed discussion as part of the next section.

A key point related to this discussion is that the medium itself does not create the features described here. The features are, for the most part, a function of human involvement with the medium, action mediated by material artifact. There is a strong body of opinion (e.g. Bromley & Apple, 1998; Noble, 1984; Winner, 1986) that proposes that the analysis of technologies in education should focus on the social processes related to technological practice and acknowledge that the impact of the use of technology will vary with the context, according to the purposes of the humans involved in the particular situation.

Computer-mediated communication enables collaborative learning to occur in a time- and place-independent manner (Kaye, 1989). Kaye noted that this type of learning can occur between students as well as between the learner and the teacher. Hiltz (1995) indicated that online discussion increased group cohesion and collaboration (p. 237) and in a later report (Hiltz, 1998) went on to suggest that small group collaborative learning was a requirement for online courses to be as effective as traditional classroom courses. Eastmond (1995) also indicated this latter point was essential if discussion was not to become dissipated too widely thereby reducing its

value for individual contributors. A small intimate discussion would, he suggested, maximize learning.

Harasim (1989) found that transcripts of prior conference messages and use of specified conference topics acted as a common reference point for students and allowed them to share their understanding of topics. In advancing this line of discussion, Harasim (1990) stressed the value of peer collaboration as a way of allowing learners to create new knowledge, a point also noted in the work of Zhu (1996).

Davie and Wells (1991) reviewed early research on the role of the instructor and suggested that instructors became less dominant and facilitated and participated in online discussion more frequently when successfully facilitating online discussion. They also noted the more personal contact that can occur in a computer-mediated communication environment and suggested that this places instructors in a stronger position to support student in their learning.

The text based nature of computer-mediated communication, and its asynchronicity afford several possibilities for communication. Kaye (1989) indicated that the textual nature of the communication in this medium helped to structure the interaction and enabled forethought on the part of students in their communication with others. Gunawardena (1992a) supported this and suggested that computer-mediated communication allows learners to take advantage of outside sources and think more deeply before responding. The permanence and visibility of text to the wider audience led Collins and Berge (1995) to suggest that because students are aware that their comments will be viewed by a wider audience, they are more likely

to give greater thought to developing considered responses. In making a similar point, Bates (1995) suggested that the textual medium required students to construct and defend arguments in written form and is thus likely to reinforce students' analytic and writing skills. Hiltz (1995) noted variable results concerning the quality of writing in computer-mediated environments, and said that although a computer-mediated communication environment appears promising in this regard, more research was needed. Finally, Harasim (1996) and Bates (1995) both noted the use of textual communication for assessment and indicated that assessment of progress and contribution to group work is facilitated by the textual record of computer-mediated communication.

The asynchronous and textual nature of computer-mediated communication also has some drawbacks. Mason and Kaye (1989) recorded that students might be required to read large amounts of text and that this can be very time consuming, and Gunawardena (1992b) found that maintaining a clear picture of discussion, involving several threads, over a lengthy period of time was something the computer conference participants in her study found difficult. Eastmond (1995) supported this latter point and noted also that students can be frustrated by delays in responses to messages they post.

Finally, social benefits may arise within the use of computer-mediated communication in distance education. Mason (1992) suggested that student involvement in computer-mediated communication can provide them with emotional support. She indicated this support is similar to but not a substitute for the informal social networks established by students in face-to-face contexts. Harasim (1996) and

Kaye (1989) both supported this point. Harasim linked this support to the development of communities of learners, foreshadowing the work of Garrison (1997; 2000) and Gunawardena (1997) who argued the importance of socio-emotional interaction in developing meaningful and worthwhile educational outcomes within groups of online learners. While some socio-emotional interaction may well be required, Bates (1995) suggested that students may get too emotionally involved within a computer conferencing context. However, he noted that this should not be seen as a bad thing but rather as an excess of a good thing.

### Summary

Features of computer-mediated communication discussed here are not directly attributable to the medium. They arise from the way in which students and teachers make use of the medium. While the features discussed show ways in which educational advantage can be obtained from that use, they also point to limitations and potential problems within that medium. Recognition of these features is important to this study because of the way they contribute to the environment within which students learn, potentially impact on the nature and extent of interaction, and affect students' perceptions of control. One feature of the computer-mediated communication environment has not been discussed in this section. That feature is sourced in the claim that computer-mediated communication is egalitarian, inclusive and democratic and is discussed next.

## Asynchronous Computer-mediated Communication and Control in Interaction

### An Early View

Asynchronous computer-mediated communication can be employed to enable group discussion or to allow communication between individuals within a course. It affords frequent and reasonably rapid dialogical possibilities and is increasingly used within distance education courses. Harasim (1987; 1995) strongly advocated that these features contributed to the creation of a democratic environment for students because of the way learner participation is encouraged. In Harasim's view inclusion is fostered because online courses expand access to educational opportunities, and the inherent nature of the medium allows all voices to be heard, and eliminates, or at least disguises, socially differentiating factors like gender, physical disability or appearance. Students, she said could "become 'power learners' (Davie & Wells, 1991), taking control of their own education and playing an active and meaningful role in courses" (p. 218). There is support for this view, especially for the point that learners can open up discussion and take control of their learning. As noted in the previous chapter, Rohfeld and Hiemstra (1995) have mentioned the role that computer-mediated communication can play in helping learners take control, Graddol (1989) noted the capability of computer-mediated communication to support minority topics of discussion and Tuckey (1993) noted the equalizing effect of computer-mediated communication such that "learners interact without regard to the status of other participants" (p. 64).

This portrayal of the computer-mediated communication environment in distance education paralleled a similar portrayal in the wider computer-mediated

communication arena. Early writing in the area of computer-mediated communication provided a picture of the computer-mediated communication world as one where freedom, diversity and equality were the natural order. In an early history of the Internet, Stirling (n.d.) wrote that one of the main reasons people wanted to be on the Internet is simple freedom, with no social or political protocols to hamper communication. This view of the Internet as enabling an open, equal democracy also undergirds the writing of Rheingold (1993) who discussed the friendship and strong personal relationships that can be developed within online environments. Herring (1996a) reported on this earlier work, noting the “Utopian visions of class- and gender-free virtual societies” (p.1) that formed part of the work of some earlier theorizing.

With increasing awareness of the nature of online interaction these early views have been modified. This section turns now to consider literature that takes the view that the ideal of an inclusive or egalitarian environment is not easily established and that students taking control of their learning or having their voices heard is not something to be achieved in a straightforward manner. This part of the review will point to the ways in which online interaction may be seen to be a complex phenomenon, especially with regard to the concepts of control and power, concepts that are generally noticeable through their absence in discussion of online interaction in distance education. First literature that responded to claims from the wider arena will be discussed and then studies from distance education.

### The Complexity of Control in Online Interaction

Jones (1998) was very clear about the importance of considering the issue of power in online discussions. Noting that the idea of communities emerges strongly in the wider literature on computer-mediated communication Jones (1998) wrote “communities are defined not as places but as social networks, a definition useful for the study of community in cyberspace...(since)...it focuses on the interactions that create communities” (p. 20). He went on to say that “just because the spaces with which we are now concerned are electronic there is not a guarantee that they are democratic, egalitarian or accessible and it is not the case that we can forgo asking in particular about substance and dominance” (p. 20).

The earlier work of theorists in the area of computer-mediated communication was perhaps characterized by a sense of technological determinism that more recent work is shrugging off. Jones (1997) provided a full argument to support the rejection of technological determinism saying, “the particular form that an individual virtual community takes is not determined by technology but rather is dependent on its social context” (p. 10).

Issues surrounding race and gender have been investigated in some computer-mediated communication studies. These studies tend to show that difference does exist and is visible online. Burkhalter (1998) demonstrated how racial identity is made visible online. He described how self-disclosure and the use of language serve to provide ways in which one’s racial identity is disclosed. But perhaps even more important than the disclosure of identity is the fact that such identity is negotiated through interaction and not the exclusive claim of a person. In her writing about

gender uses of computer-mediated communication, Herring (1996b) found that women and men negotiate information exchange and social interaction in gendered ways, but also that there was a tendency to adopt the dominant style of message structure. Rodino's (1997) work argued for a reconceptualization of gender but acknowledges that conceptualizing "gender as under constant construction does not contradict studies which suggest that men dominate CMC" (p. 17)

While most studies have concentrated on the immediate situation of use, it is possible to look more widely at the structures and relationships that are carried into the online environment. Kramarae (1998) wrote that "Cyberspace can provide freedoms of various sorts, but they are designed and constrained by powerful structured forces of assumptions and goals; they are not equally friendly environments or opportunities for everyone" (p. 113). Also looking beyond the immediate, Erickson (1997) noted that properties of the medium that encourage particular communicative features he saw in his analysis of online discourse could easily support alternative features. He suggested that what prevents the alternatives from occurring are primarily social factors (nature of the online 'community') and institutional factors such as the policies related to managing the discourse. Baym (1995) is another who looked more widely for forces that might shape discussion, and noted the need to consider the structural features of the tools of use as resources used to create an online culture. Although technological deterministic approaches can be rejected, it does not do to reject the notion that technology has an effect on communication.

These more general studies have highlighted the idea that technologically determinist views of how discussion might be undertaken in an inclusive or egalitarian way must be discounted. In addition they have shown that although social forces underpin the use of technology, because of the social origins of their design, all technologies bring their own affordances to their use and these affordances will have an impact on the way technologies are used. These studies have also shown that in the immediate situation of use, the dynamics of power relations are still likely to exist and should be taken into account in any consideration of the relationship between control and online interaction.

We turn now to studies that are drawn from the area of distance education. McDonald and Gibson (1998) investigated the question of how learning groups are formed, maintained, nurtured and developed. They coded a sample of messages from transcripts selected at three points in an online course and found that there is a definite pattern to interpersonal issues in group development. They explored development in terms of the interpersonal dimensions of Inclusion (Involvement), Control and Affection (Openness and Solidarity) based on coded analysis of transcripts of group discussion, and found that group development moves through stages that can be identified and can be negotiated to form a cohesive functioning group. McDonald and Gibson found concern over Control and Involvement decreased over the life of the group (13 weeks) while Solidarity and Openness increased, as was hypothesized. It is important to note that the decline in concern with Control does not necessarily imply the absence of power or control relations

within the group. An alternative explanation is that power relations have been cemented and accepted – there is no guarantee of group democracy.

Vrasidas and McIsaac (1999) examined the nature of interaction in an online course and found that the structure of the course, class size, feedback and prior experience with computer-mediated communication all influenced interaction. The study suggested that educators can provide structure to ensure online interaction and that learner- learner interaction was an important part of that interaction. They noted the need to explore power and control in online groups, saying a “discourse analysis approach would shed light on how the ideas of power and control operate in online and face-to-face encounters. It would be useful to explore what discourse says about power and to examine how interaction shapes power in an online environment” (p.34).

Wegerif (1998) discussed the formation and growth of an online educational community in his analysis of a CMC based U.K. Open University course. He talked of students crossing a threshold that gave them full participation status within their learning community. Crossing this threshold was contingent on factors of access (cost and technical elements) gender, and prior experience with group work, and was an important element of feeling and being successful within the course. Wegerif identified the need to move students from “outsiders” to “insiders”. Those who do not make the transition often do not complete the course. Students did note that an “in-group” formed – this appeared to be based around access.

Wegerif (1998) also identified aspects such as course design, the role of the teacher and the interaction style built into the course, as important in group

development. The teacher role includes being able to identify the developmental stages of group formation and intervening at critical group growth points. It is noted that once again students felt concerned about interaction. “Considerable concern and anxiety about the form of messages was evident” (Wegerif, 1998, p. 40). One student found the gender bias she experienced in work situations was not present in the online group. However, some students posted long messages which others found intimidating. The form of messages and the style of interaction (such as argumentation or ‘cumulation’) all impacted on the extent to which CMC supports an egalitarian style of communication.

Picciano (1998), in an evaluation study of an online class found that, in this course, which was with experienced students, concern about speaking in class was still evident. “While some students prefer speaking up in class, others do not” (Picciano, 1998, p. 11 ). The asynchronous environment did not remove that anxiety. In fact it reshaped it. Students recognized that their responses were open to more scrutiny because they were available for continual review. However, students did like having more time to draft their responses. Picciano also found there were some more democratic aspects. “Student and instructor roles were changed in the asynchronous course. The students had more of a voice in the discussions” (Picciano, 1998, p.11). Picciano’s claim here is based on counts of responses, but does not account for the weighting or authority assigned to those voices that are not necessarily equal. To claim, as Picciano did, that the class was therefore accepting empowerment and responsibility is unwarranted.

Burge (1994) undertook a study with M.Ed students who were using CMC. The study identified four styles of peer behavior that were required: participation, response, provision of affective feedback and short focused messaging. Two key behaviors for instructors were required: discussion management ( structure, pacing, focusing, setting protocols) and contribution (technical help, timely individualized content related messages and feedback, summaries, offering support). There was a clear difference in the roles expected of instructors and students. The idea of management and the expectation of expertise suggest authority vested in some group members – in this case the instructors. Burge identified the need for further research into the developmental and cyclical stages of groups and control and inclusion.

The role of the teacher noted in Burge's work is also evident in the work of Hillman (1999). Hillman provided analysis of discourse taken from four face-to-face courses and two taught via CMC using an analytic technique that, it is claimed, combines both approaches. The discourse is analyzed in terms of purpose, mechanism and content. Hillman's analysis demonstrated a clearly defined role was taken by instructors in the CMC environment – they spoke more often and at greater length than students.

### Summary

The literature here points to the way that control and power are both implicitly and explicitly noted in distance education. Overall these studies provide some evidence of the involvement of power relations in online interaction and point to the complexity of this involvement. However this involvement emerges largely as a by-

product of research and is not developed fully in a theoretical or conceptual sense in the distance education literature.

### Chapter Summary

This chapter has presented a review of the literature related to the concepts of interaction and control. The separate consideration of each of these concepts illustrated their multifaceted nature. The review of theory and research highlighted a number of factors that contributed to the extent and nature of interaction, the dimensions of control, and the ways in which these two concepts may be inter-related. Computer-mediated communication was seen to have features that, while they may be afforded by the technology, are not determined by it. Work related to interaction and control in asynchronous computer-mediated communication was reviewed. In particular, such work in the area of distance education is scattered and presents no unified picture of the relationship between interaction and control. Although posited relationships exist in distance education theory, the review of literature presented here suggests that no consistent elaborated account of such relationships relating to the use of computer-mediated communication in distance education has been developed from empirical research. The development of such an account, drawing on the perspectives of participants could usefully inform the development of distance education theory and be of practical use to teachers and learners. A grounded theory approach to this problem provides space for the perspectives of participants while acknowledging the guiding, if not leading, role of current theoretical and research understandings. The next chapter will discuss the methodology and methods of the present study.

## Chapter Three

### METHODOLOGY

#### Introduction to the Chapter

This chapter describes the methodology employed during the study. The type of research undertaken and a rationale for that type will be discussed first.

Subsequently data collection, data analysis and issues of quality assurance within the research process will be discussed.

#### A Qualitative Research Design

Various researchers have listed what they see as key characteristics of qualitative research. For example, Miles and Huberman, (1994) listed eight and Patton (1990) listed 11, but a brief, accessible and encompassing list is presented by Bogdan and Biklen (1998) who summarized qualitative approaches as being characterized by five key features. Bogdan and Biklen said that qualitative approaches: a) are naturalistic, where the research is set in natural settings which serve as the direct source of data and where the researcher is the key data collection instrument; b) are descriptive with most analysis based on words and not based on the quantification of data; c) are concerned with process, with how things occur rather than what occurs; d) require a focus on inductive analysis, begun through an exploration of open questions and based on immersion in the detail of data to discover interrelationships between categories; and e) stress the centrality of meaning in

attempting to make sense of how people in particular settings come to account for and understand their situations.

This research is concerned with interaction between and amongst teachers and learners; is about “the ways in which knowledge ... is presented, received, shared, controlled, negotiated, understood and misunderstood ... in the classroom” (D. Edwards & Mercer, 1987, p. 1); and sees interaction as involving “...the idea that humans in communication are engaged actively in the making and exchange of meanings, it is not merely the transmission of messages” (Evans & Nation, 1989, p. 5). Such an approach requires a concern with real world situations as they occur; the ability to allow for and to integrate interdependent elements of the context that people bring to their interaction; the capacity for immersion in the data to enable the generation of explanations; and a sensitivity to the multiple meanings that people can ascribe to a single phenomenon. These concerns give rise to the necessity for qualitative research – an approach which attempts to engage with the layers of meaning that permeate human action and interaction, and places emphasis on humans as “self-interpreting beings whose actions are framed within a socio-historical context which is subjective, situation-specific, and contextually bound” (Babchuk, 1998, p. 13).

### A Grounded Theory Approach

Originating with the work of Glaser and Strauss (1967), grounded theory was developed with two primary aims: to present the case and provide a framework for the development of theory that was grounded, that is, where theory arose from the constant interplay of data collection and analysis during the research process; and to

provide a rationale for the use of qualitative methods of research. Over the course of time, the grounded theory approach has evolved from the original polemical basis of Glaser and Strauss' work to be accepted as an effective tradition of inquiry in qualitative research (Creswell, 1998). The aim of grounded theory methodology is to develop "theory that is grounded in data systematically gathered and analyzed. Theory evolves during actual research and it does this through continuous interplay between analysis and data collection" (Strauss & Corbin, 1994).

Theory development is thus the overarching purpose of grounded theory research, and such theory is closely related to the context of the phenomenon being studied. However, in this approach there is no suggestion that such theory must be developed *ab initio*. Strauss and Corbin (1998b) acknowledged that where theories seem to be appropriate to an inquiry they "may be *elaborated* and modified as incoming data are meticulously played against them" (p. 159, italics in original). This relates very closely to the position taken by Dey (1999), noted in Chapter One, that the equation of preconceptions with prior conceptions in the original development of grounded theory is inappropriate; that instead, the position to be taken in grounded theory research is that "conceptual frameworks can act as guides rather than prison guards" (p. 251).

The distinction developed above was reflected in Miles and Huberman's (1994) discussion of tight versus loose designs. The basic question they posed was "How much shape should a qualitative research design have?", and in particular they asked "Does ... prior bounding of the study blind the researcher to important features of the case or cause misreading of local informant's perceptions? Does lack of

bounding and focusing lead to indiscriminate data collection and data overload?” (pp. 16-17). They developed a case for both types of design – tight and loose – depending of the circumstances of the inquiry and the researcher, but indicated a preference for qualitative designs toward the structured end of a tight-loose continuum and suggested that it is important to have at least a rudimentary conceptual framework.

Grounded theory methodology was therefore an appropriate choice for the purposes of this research. Its qualitative nature is consistent with the views of education and language that are foundational to this study; its aim suits the purpose of the study undertaken here; relevant prior conceptions do not violate the assumptions of the methodology; and its emphasis on the interplay of data collection and analysis informed the ongoing nature of data collection undertaken in this study.

#### Features of Grounded Theory Research

A grounded theory approach arises from the general framework of qualitative research but has its own unique design features (Babchuk, 1998). In grounded theory research the close links between the phenomenon and the theory being generated are represented through the categories, their properties, and dimensions that emerge from analysis and are the building blocks of the theory. Thus the conceptual framework being generated in a grounded theory approach is generated from the data rather than from previous studies.

The theoretical categories are generated on the basis of theoretical sampling, theoretical saturation and the constant comparative method of generating and analyzing data. Theoretical sampling is the idea that data collection is controlled by the emerging theory with sampling undertaken to develop and relate the theoretical

properties of categories in that theory. Thus “sampling, rather than being predetermined before beginning the research, evolves during the process. It is based on concepts that emerged from analysis and that appear to have relevance to the evolving theory” (Strauss & Corbin, 1998a, p. 202). Theoretical saturation is the term used to indicate that sampling continues until no additional data are being found to develop properties of a category or to establish relationships between categories. Finally, the “constant comparative method” is the link between the need for sampling and the point of data saturation. It ties the process of data collection into that of data analysis. The constant comparative method of data analysis is the process of taking information from data collection and comparing it to emerging categories; it sees the researcher “zigzagging” between data collection in the field and data analysis repeatedly until the categories derived from data become saturated and the theory is fully elaborated.

Since data collection and analysis are undertaken alternately, there is constant interaction between the researcher and the research activities. Consequently a researcher using a grounded theory approach must be aware of the need to balance objectivity and sensitivity (Strauss & Corbin, 1998a). Objectivity

does not mean controlling the variables. Rather it means openness, a willingness to listen and to ‘give voice’ to respondents ... hearing what others have to say, seeing what others do and representing these as accurately as possible. It means having an understanding, while recognizing that researchers’ understandings often are based on the values, culture, training, and experiences that they bring to the research situations and that these might be quite different from those of their respondents (Strauss & Corbin, 1998a, p. 43).

Sensitivity involves giving meaning to data, having insight into the events being studied. But this sensitivity must arise to some extent from the knowledge and values

researchers already possess. The researcher needs to be aware of the tension between objectivity and sensitivity.

This tension is central to a key issue in grounded theory research. In their 1967 work, Glaser and Strauss were explicit about the emergence of categories from the data, rather than the use of categories borrowed from existing theories. Dey (1999) said Glaser and Strauss “are most reluctant to don the conceptual straitjacket supplied by the discipline (under study) itself. They presume that such a straitjacket precludes a creative response to the data, which as a result can no longer yield its secrets freely, but is forced into some preconceived framework” (p. 250). However, Dey argued strongly that preconceptual coding of any sort is impossible. He said “The equation of prior conceptions with preconceptions is evident in the language of “discovery” and “emergence”, terms that suggest that observations can themselves force appropriate conceptualizations from us, as though the observer were not deeply implicated in the very act of observation” (p. 251) and went on to note that observation of any sort is subject to conceptual filters; that open coding as the basis for theory development is reliant on experiential knowledge; and that categorization can never be of a classical, logical, discrete form, with sharp boundaries and unambiguous assignments.

This issue points to the nature of a qualitative approach, to the underlying ontological lens of inter-subjectiveness and interpretation, and to the importance of generating theory rather than discovering it. It does not negate the systematic nature of grounded theory and the close linkages between data and theory, but rather warns of the need for constant awareness of the interpretive nature of qualitative research.

### Selection of a Site

Selection of a site is the first level of sampling in grounded theory research. Strauss and Corbin (1990) indicated that the selection of a site being studied must be directed by the research questions under consideration. Accordingly selection of a site considered several factors.

To ensure adequate depth and variation for the purposes of theory development, Cresswell suggested, “the researcher typically conducts 20-30 interviews ... to saturate ... the categories” (1998, p. 56). The clear practical implication is that any course chosen as a site for study will need to have at least 20 participants who are willing to be involved in the study.

The focus of this study is on online interaction in distance education. Access to a course was required, but the course had to be one where asynchronous computer mediated communication was the primary and dominant technology used to enable interaction between students and faculty who are normally spatially and temporally distant from each other as they engage in the activities of the course. This requirement precluded the selection of on-campus courses using computer-mediated communication as an additional means of supporting the learning of students. In addition it precluded the selection of courses that used synchronous computer-mediated communication as the primary means for interaction within the course.

The course selected had to be one in which interaction was recognized as an important characteristic for student learning. As an example, Perraton (2000) noted the importance of interaction within distance teacher education, suggesting that computer conferencing is one way in which interaction can be enabled. In addition,

the course curriculum and course design and faculty involved had to be supportive of the role of interaction in learning within the course.

Finally, the site selected needed to be a course involving adult students undertaking study at a distance. With the data gathering to be undertaken in New Zealand, Central University in New Zealand was a preferred site. Central University offered an extensive range of distance courses from which to select a site in accordance with the factors listed above.

### Types and Sources of Data

Gaining understanding of participants' perspectives of online interaction in distance education is central to this study. To this end, interviews with participants were undertaken. Mehan (1984) said "By treating language as a mediating force in people's lives, sociolinguists have pointed out the importance of looking at the window of language and not just through it" (p. 181) and thus we cannot treat language used during interaction in the course as a medium through which the relationships and ideas of participants are easily seen. To go beyond this required an understanding of participant perceptions of their actions and of the context in which they see them occurring. In this study, following Edwards and Mercer (1987), context was described as mental, rather than linguistic or situational. Context was thus "a property of the general understandings that obtain between people who communicate, rather than a property either of the linguistic system that they use, or of the actual things done and said, or, indeed, of the physical circumstances in which they find themselves" (D. Edwards & Mercer, 1987, p. 62). Context was important because it describes what people know, think, feel, and believe. It is "often used as a

shorthand term for whatever social knowledge the participants perceive as relevant to organizing words and meanings” (A. Edwards & Westgate, 1994, p. 28). These ideas resonate with the framework Fairclough (1989) provided within his view of language where he pointed to the importance of understanding the resources people bring to the production and interpretation of text. The data about perceptions and context is the text of interviews that were undertaken with people who are participants in the study.

In many software packages designed for use in the development of computer-mediated communication environments there are a number of different avenues for one-to-one communication and for one-to-many communication. The package used at Central University for the delivery of online courses or the online component of courses is WebCT. WebCT provides for public asynchronous communication between and within groups of students—the Bulletin Board; it provides a private asynchronous “personal mail” system for all course participants and instructors, which operates in a manner similar to electronic mail; and it provides for the use of four distinct channels of synchronous chat.

Online interaction has both qualitative (the text) and quantitative dimensions. The number of messages, their length, and the frequency of intermessage references all relate to the quantitative dimension of online interaction. In this research counts of participant messaging in public forums, a broad measure of participation, were used to guide sampling for interviews. Miles and Huberman (1994, p. 41) presented and provided considerable support for, the argument that qualitative and quantitative data can be linked in studies that are broadly qualitative in nature. In the particular case of grounded theory, Dey (1999) also advocated the use of quantitative data as a

way of perceiving patterns, regularities, and repetitions within data, concluding, “mathematics, even of a very limited kind, may help to generate theory” (p. 259).

Plans to use the online transcripts as an additional means of triangulation—finding evidence from different sources to shed light on a theme or perspective (Cresswell, 1998, p. 202) – were not pursued. Despite the focus on “online interaction” in this research, no a priori judgment was made about what constitutes interaction within a body of discourse. Therefore the entire body of discourse from the online course needed to be taken as the source from which to obtain data for the study. Such an approach required consent from all participants in the course, and this was not forthcoming, thereby precluding the use of online transcripts as a data source. This point is elaborated in the next chapter in the section “Site Choice and Participant Recruitment” and discussed further in the limitations of the research mentioned in the final chapter.

In a study of this nature, other sources of data pertain. In particular, products of the research process (e.g. research memos) formed part of the data, as did any theoretical framework brought to the study, as a guide, by the researcher.

## Data Collection Strategies

### Interviews

In-depth semi-structured interviews with students were conducted to provide understanding of the student constructions of the social context that constituted the online interaction and the arena within which it occurs. The use of open-ended questions provided the opportunity to clarify the meanings students brought to and

took from their online context and to understand these participants within a broader institutional and social context.

The interview itself must not be constructed as an objective tool for data gathering. “Increasingly, qualitative researchers are realizing that interviews are not neutral tools of data gathering but active interactions between two (or more) people leading to negotiated, contextually based results” (Fontana & Frey, 2000, p. 646). Schwandt (1996) supported this in describing an interview as “a linguistic event in which the meanings of questions and responses are contextually grounded and jointly constructed by interviewer and respondent” (p. 79). Thus an interview is an active tool of data collection during which the researcher must pay attention to the process of the interview as much as the product—the “how” as much as the “what”.

Interviews were undertaken to gather data about the particular context within which participants took part in the discussion in an online course. An interview guide was developed based on approaches discussed by Carspecken (1996) and Spradley (1979). It comprises questions related to a series of themes drawn from the earlier review of literature (the interview guide is attached as Appendix A).

Interviews with distant students can be conducted in one of several ways if face-to-face interviewing is not practical. Options include telephone, some form of synchronous computer-mediated communication (chat), or interviewing via electronic mail (email). While the latter two, chat and email, have the clear advantage of providing a ready-made transcript they also carry disadvantages. Chat is a medium designed for short messages and rapid exchange of text. It provides for a synchronicity limited by the typing speed of participants. Email enables participants

to conduct lengthy and potentially thoughtful exchanges without the time demands of a synchronous situation, but allows participants to construct and reconstruct responses prior to sending them, when the immediacy of the response may be more valuable. In addition, the asynchronicity of email can mean that such interviews become protracted. Phone conversations bear the burden that transcripts must be developed, but provide a familiar dialogical situation for both participants. The interviews undertaken for this study were conducted by telephone and transcribed for analysis.

### Online Discourse

Data obtained from online discourse was limited to the frequency of messaging conducted using the WebCT public discussion forum – the Bulletin Board. Counts of messages read and posted by participants were obtained from the course lecturers and used to guide the process of selection of participants for interviews.

### Data Analysis Procedures

All data in this study was in the form of text. Spoken text from the interviews was transcribed and subject to analysis. Analysis was based on grounded theory methods, since “the value of the methodology ... lies not only in its ability to generate theory but also to ground that theory in data” (Strauss & Corbin, 1998a, p. 8).

### Grounded Theory Analysis

Strauss and Corbin (1998a) indicated that a grounded theory analysis incorporates three distinct processes—describing, conceptual ordering and theorizing. These activities are at the heart of a grounded theory analysis. Description is the

representation of an event or experience or emotion, related from the perspective of the person doing the depicting. Descriptions involve their own purpose, audience and point of view (Wolcott, 1994) and serve as the basis for the interpretation of data. Conceptual ordering involves “the organization of data into discrete categories according to their properties and dimensions” (Strauss & Corbin, 1998a, p. 19) and signifies the move to increasingly interpretive and abstract research activities. Finally, theorizing “entails not only conceiving or intuiting ideas (concepts) but also formulating them into a logical, systematic, and explanatory framework” (Strauss & Corbin, p. 21).

In a grounded theory analysis, the process of generating theory from data is delimited by a set of rigorous analytic procedures: open coding, axial coding, and selective coding. These different coding procedures were described by Cresswell in the following way, “Grounded theory provides a procedure for developing categories of information (open coding), interconnecting the categories (axial coding), [and] building a “story” that connects the categories (selective coding)” (1998, p. 150). Within the open and axial coding processes during the early phase of the research, Strauss and Corbin (1998a) stressed the need for a detailed line-by-line analysis of the data to generate initial categories and suggest relationships.

Categories of analysis were generated if they were seen to contribute a significant response to the research questions. Glaser and Strauss (1967) asserted that categories and their properties have two essential features. They must be analytic; not merely labels, but involving conceptualization of key features of the data. They must

also provide a meaningful picture of the phenomenon under study. Categorizing is an interpretive process however. Seidman (1998) pointed out that:

Although [he] can suggest some of the characteristics that make interviewing texts meaningful to [him], there is no model matrix of interesting categories that one can impose on all texts. What is of essential interest is embedded in each research topic and will arise from each transcript. The interviewer must affirm his or her own ability to recognize it (p. 101).

### Units of Analysis

Within grounded theory, the unit of analysis is described as a comparison group and the method for choosing comparison groups is known as theoretical sampling (Glaser & Strauss, 1967). “The basic question in theoretical sampling is: what groups or subgroups does one turn to next in data collection? And for what theoretical purpose?” (Glaser & Strauss, 1967, p. 47). Strauss and Corbin (1998a, p. 215) refined this earlier view and argued that sampling should be “of events and incidents, and not persons or organizations per se”. This refinement points to the importance of considering elements from the texts obtained in the research as the unit of analysis.

### Tools of inquiry

The analysis of the data texts was guided by the description of language provided by Gee (1999). Gee acknowledged his approach is one of many, but it was relevant to this study since Gee viewed language as creating the world of activities and institutions around us (p. 11) a view of language that is consonant with the socio-cultural approach within which this study was framed. Gee asserted that language use

can be investigated through certain “tools of inquiry”. The tools that Gee proposed and which were relevant to this study are those of situated meanings; cultural models; and social languages. Gee described these in depth, but in brief they can be explained as follows:

Situated meanings are images or patterns we assemble “on the spot” as we communicate in a given context, based on our construal of that context and our past experiences. They “don’t simply reside in individual minds, very often they are negotiated between people in and through communicative social interaction” (p. 80).

Cultural models explain the feelings, values, beliefs and knowledge that people have to interact in a particular way. They can help explain situated meanings and because of their role in organizing the thinking and social practices of a particular socio cultural group, they are the link between individuals and the larger world.(p. 81)

Social languages (see also Wertsch, 1991, p. 56 ff) are “socially accepted ways of using language, of thinking, valuing, acting, and interacting” (p. 17).

These tools Gee suggested prompt certain questions about interactions. (see Gee, pp. 38, 53, 78), and allow us to investigate the tasks of language use.

### The Participation Data

Quantitative data gathered to obtain information about participation was analyzed in terms of frequency counts of individual messages as an indicator of participation.

### Operationalizing Data Collection and Analysis

Interviews were conducted over a period of 15 weeks. Four weeks into the course that was run over a 16 week semester, four participants were selected to represent the range (low to high) of contributions to online discussion in the course. These participants were interviewed using the interview schedule (see Appendix A).

After this initial set of interviews, further interviews with course participants were undertaken. Participants for these interviews were selected on the basis of the analysis of course participation data, and the generation of themes of relevance to the study from analysis of the interview data. The next eleven interviews were undertaken within three weeks of the last interview of the first set, with one further interview being delayed slightly. A further set of interviews was conducted two weeks after the second set and involved an additional eight participants. These additional interviews took the interview schedule as a guide but were also driven by the need to explore the categories generated by the data analysis. One final first interview was undertaken as a round of second interviews with participants commenced. These first interviews with participants lasted approximately one hour.

Twenty of the participants were interviewed a second time. These interviews were conducted in three main blocks, although two interviews were held two weeks before the first major set of interviews. The first set of five interviews was held three weeks after the two early second interviews; a set of eight interviews was held a week later; a final set of five second interviews a further week after that. These second interviews with participants lasted approximately 30 minutes. The focus of these additional interviews was given increasingly by the need to develop and clarify the

dimensions and properties of the categories that were being generated through data analysis and less and less by the interview guide. Course participation was not a factor in the selection or sequencing of second interview participants.

### Use of Computer Software in Working with Data

Many computer packages exist to aid qualitative researchers in the collection, management and analysis of data. Miles and Huberman (1994) listed three types of generic program (word processors, word retrievers and text base managers) and three types that are specifically designed for the use in qualitative research during the analysis phase (code-and-retrieve programs, theory builders and conceptual network builders or qualitative data analysis (QDA) software). It is to the latter types that these comments are addressed.

The use of computer software as a tool during the analysis phase of a qualitative study has been subject to criticism on several grounds, but also presents several advantages to researchers. At a pragmatic level, the use of QDA software requires a considerable investment of researcher time in learning the software—arguably more time than is saved by computer use (Bogdan & Biklen, 1998; Cresswell, 1998). However the more serious argument concerns the impact on data analysis such programs may have. Dey (1999) suggested that the use of QDA software for coding purposes may incline researchers to consider coding as an aconceptual process that is largely mechanical, rather than theoretically based. Kelle (1997) elaborated this argument and suggested further that researchers may be reluctant to change or re-label categories once they have been “fixed” in the program. These authors offer a similar resolution of these difficulties. They have indicated that

the safeguard against such misuse is a thorough grounding in the methodology being used in the study, and an awareness of the need for theoretical sensitivity during data analysis.

QSR NUD\*IST Vivo (NVivo) is a computer program designed to facilitate the storage, management, retrieval, and analysis of qualitative data, and was used in this study for those purposes. It provided the advantages of easy storage and manipulation of text-based data obtained during the study. It was particularly useful in the coding phases of the research, enabling coding, recoding, aggregation and separation of codes, and the production of a range of user-defined coding reports. It has memoing capabilities for storing and managing researcher notes and reflections, and these capabilities were used during the data collection and analysis process.

#### Assuring the Quality of Analysis

The issue of quality assurance in qualitative research is summed up in the question Cresswell posed: “How do we know that the qualitative study is believable, accurate and ‘right’?” (1998, p. 193). This is a complex area of ongoing debate among qualitative researchers (Lincoln, 1995; Peshkin, 1993) but some responses have endured as general indicators of standards of quality. One set of four criteria proposed and developed by Lincoln and Guba (1989; 1985) has been broadly accepted (Miles and Huberman, 1994). Lincoln and Guba suggested four criteria for judging the trustworthiness of qualitative research: confirmability; dependability; credibility; and transferability.

### Confirmability

The issue for the criterion of confirmability is largely that of researcher bias. Can others check that interpretations and conclusions reached are drawn from the data collected and do not result from researcher bias? Miles and Huberman (1994, p. 278) said that “at the minimum, explicitness about the inevitable biases that exist” is required. This criterion is addressed in two ways. First, a section of this chapter is related to making explicit the viewpoint of the researcher. Second, excerpts from the data were included in discussion of the data and findings to support interpretations and conclusions. Complete transcripts of interviews are available for inspection.

### Dependability

The issue of dependability relates to the relative stability of the research process and the extent to which it is possible to track the research process and determine how data was used to reach particular conclusions. Maykut and Morehouse (1994) wrote “by seeking to make the research process transparent to the reader, we increase the likelihood that readers will seriously consider our work” (p. 146). To address this criterion, records detailing the data collection and analysis process were kept and all such records and data are available for inspection. These records are primarily the memo documents that were created during the data collection and analysis phases and the information about the properties of categories generated during the research. This data is kept electronically as part of the Nvivo project file developed during the research. The former are available from the researcher, the latter are presented as Appendix E. In addition, extensive quotations

from the interviews are included to help readers to track the process from raw data to outcomes generated from the research.

### Credibility

Credibility relates to the question “Has the researcher represented the views of participants fairly and accurately in the research analysis and findings?” During the data analysis phase credibility was addressed by providing all participants with transcripts of interviews for verification or amendment, and through the provision of drafts of chapters for comment. For the former, all interview transcripts were automatically sent to participants once transcription was complete. No participant requested change of any kind. All second interviewees were sent the transcript of their first interview prior to the second interview. With regard to chapter drafts, participants were advised of the availability of each of the three major sections of the final two chapters as they were drafted and were asked to email the researcher to obtain a copy. Eight participants requested copies of the drafts. None requested amendments or deletions.

### Transferability

This criterion asks about the extent to which the conclusions of the study can be related to other contexts. In attempting to satisfy this criterion, the researcher must provide sufficient detail about the site of study to enable others to decide if findings are applicable to other cases. This detail is provided in the following chapter.

Maxwell (1992) also suggested that transferability relates to the links developed between the actions and interpreted meanings described in and arising from the data

and the theoretical explanations that are developed from them—making connections from the immediate study to the theory beyond it.

In sum, to ensure trustworthiness in grounded theory research, and thus its quality, it is important that the research be grounded well conceptually and empirically. How does this grounding occur in grounded theory research? Empirically, the researcher must consider the importance of theoretical sampling, of the use of multiple methods and data sources, of rigorous data gathering, and be systematic and rigorous as well as creative and insightful in analysis. Trustworthiness is enhanced through member checks, through interviews with the same subjects more than once, through the use of non-leading interview techniques, through peer debriefing, and through checking consistency between sources of information (Carspecken, 1996). In addition, a researcher should make explicit the conceptual assumptions that underpin their analysis and interpretation and examine theory being generated with an eye to the evidence from other research done in the field (Dey, 1999) and make public the processes of data analysis and category generation (Anfara, Brown, & Mangione, 2002). Dey (p. 244) suggested that conceptual grounding occurs as researchers consider the consistency of their emerging theory with that of other theories; as they clarify the connections between concepts and the grounds for inferring those concepts; as they assess alternative explanations and provide an audit of the generation of their theoretical ideas; and as they work to identify errors ambiguities and exceptions in their analysis. These are the approaches and procedures that were adopted within this research study.

Strauss and Corbin (1998a, pp. 265-274) addressed the issue of evaluating the research process and the empirical grounding of findings by presenting criteria that are specific to the use of a grounded theory approach. The criteria are presented in a series of questions, the answers to which must be present in a completed research report and “must be sufficient to give some reasonable grounds for judging the adequacy of the research process as such” (Strauss & Corbin, p. 269). The criteria are based around the need to rigorously and systematically employ the data collection and analysis techniques that are central to a grounded theory approach.

#### Permissions and Clearances

Prior to any approach to possible participants Human Subjects clearance was obtained from The Pennsylvania State University Institutional Review Board. Components of clearance relevant to the study are, the Human Subjects Review Board forms detailing the nature of the study and the involvement of human subjects (Appendix B), and an Informed Consent form (Appendix C). In addition a letter of institutional support was obtained from the institution in which the research was conducted and submitted directly to The Pennsylvania State University Institutional Review Board. Finally, before data was collected from any participant, a signed consent form was obtained from that participant.

#### Researcher Background

At several points in this chapter there has been mention of the need for a researcher` using qualitative methods to make explicit the assumptions, beliefs, and values brought to a study. This section is written to fulfill that need.

I brought to the study a background in face-to-face teaching at primary and tertiary levels, and tertiary level experience as both a distance student, and a distance educator with 15 years experience. This background has continually affirmed my commitment to the value of education for both personal and professional growth and to the tremendous benefit in terms of both opportunity and quality that well designed distance education programs do have.

I have an interest in interaction in learning that stems from my Master's degree. My thesis investigated the comparative development of knowledge structures in a group of students using computers and databases in their learning and a group without those tools. Within that work I was alerted to the nature of student discourse. Subsequently, the only thesis-based paper I published in a refereed journal involved an analysis of the classroom discourse of the computer-using students.

This interest endured from that point, in terms of teaching with both distant and face-to-face students. Most recently (1996-99), my role in Central University's distance pre-service teacher education program gave me the opportunity to develop and implement a framework within which distance learners could be required to interact online. I was also involved in monitoring the success of this aspect of the program. My informal observation was that the interaction online was qualitatively different from that I had observed and experienced through other media I had used in distance teaching. My reflection on this observation, which has ultimately led to the study undertaken here, has been guided by the following beliefs that have grown from consideration of the literature and research in ways that resonate with my own experience.

- that interaction is the dominant feature of human learning.
- that learning is mediated through the use of language and artifacts that have social and historical backgrounds.
- that language has a range of functions; that all functions are expressed in the interaction that occurs in an online course ;and that they all contribute to the context of the online course and thus have an effect on the learning of a student
- that language use is a social practice, influenced by the resources people bring to the production and interpretation of texts and the social and institutional practices of which they are part.
- that technologies are not neutral tools that have no impact on the use to which they are put; rather they are imbued with a cultural history and provide affordances to a user that may or may not be taken advantage of, depending on user's own background and experience.

### Summary

This chapter discussed the methods and procedures employed in the study. It presented a rationale for a qualitative design for the research question and noted the reasons for employing a grounded theory approach. Data collection and data analysis methods were discussed and, in particular, the use of qualitative data analysis software was reviewed. The issue of quality assurance in qualitative research was addressed and criteria to ensure the trustworthiness of the study were noted. Finally,

drawing from arguments concerning research quality, a section setting out the beliefs and background with which the researcher enters the study was presented.

## Chapter Four

### RESEARCH FINDINGS

#### Introduction to the Chapter

Two sources of data provide the foundation for the findings reported in this chapter. The major source comprises the text of interviews with students involved in online courses, while a second source is the discussions undertaken online within the class discussion “space”. Online discussion provided quantitative data that informed sampling and interview priorities. The interview data provide the opportunity to understand and clarify the meanings students bring to and take from their online context and to see those participants and their understandings within their wider institutional and social context. These data help develop understanding of participants’ perceptions of their actions and of the context in which they see that action occurring.

The purpose of this chapter is description of research findings. Given the approach to interview data noted above, this chapter maintains a focus on the words of study participants through the researcher’s purposeful use of quotations from participants. This is done fully recognizing that any description is based around choices as to purpose and audience on the part of the person providing the description (Wolcott, 1992).

The chapter starts with a section describing the process of selection of a research site and the involvement of participants, along with a brief description of the

site. Interview transcript material relating to the students' educational backgrounds and to their description of the role and context of being a distance student in the program is used to describe the nature of the student participants and their sense of being distance students.

The second section in this chapter uses participant descriptions to convey a picture of the nature of the interaction that occurs in the program. To begin, and in order to provide a complete picture, interaction other than asynchronous online interaction is considered. However, the major part of this section addresses participant experience with asynchronous online interaction, describing initial activity in the program, motivation to interact, current involvement in interaction and the value and effects of that interaction.

The third section of this chapter concerns the issue of control in an online course. This section focuses specifically on online interaction, as an important element of the educational process for the participants of this study, and reviews the ways in which participants control and are controlled during that interaction. This section is divided into three areas, relating to personal, inter-personal and wider factors that are related to issues of control.

## The Site and Participants

### Site Choice and Participant Recruitment

Chapter Three sites this research at Central University in New Zealand. The university is New Zealand's largest distance education provider at university level and offers a substantial number of its programs and papers to students online via the

learning management system WebCT. (The university uses the word ‘course’ to mean ‘course of study’ – a collection of papers taken by an individual student from one, or more than one program.) In 2002 the university had approximately 20,000 students using WebCT in various papers and programs, and these students were spread between campus-based and distance programs.

The University operates a system of paper descriptors included amongst which are the descriptors: web supported; web enhanced; and web based. A web supported paper is one where lecturers provide some form of assistance for the paper via WebCT (e.g. a page of web links, a discussion forum, some online paper related mastery quizzes), but student use of the paper web site cannot be required. A web enhanced paper requires access since some elements of the paper (e.g. content, assessment or paper activities such as discussion) will only be available online. A web based paper is one where the paper is entirely taught and delivered online. This research required the use of discussion forums and choice of sites was limited to papers from the latter two categories.

A senior member of the University’s instructional design team was consulted to develop a short list of papers that might serve as research sites. The requirements of the research (noted in Chapter Three) were discussed, and a short list of seven discrete papers and one program was developed. Papers from four of the University’s five colleges were included in the list. At this stage further consideration of the list revealed that all papers with the exception of a group of papers offered by the College of Education were only offered in the second semester – July to November 2002. The papers forming the group offered in the first semester, the period set aside for data

collection, were all part of the College of Education's distance delivered primary pre-service teacher education degree program. To understand the context in which the students are studying, it is useful to understand the nature of the program.

### The program

The program around which this study is based is the pre-service primary teacher education program offered by the Central University College of Education. It is a three year program that began in its distance form in 1997, and continues today with relatively little change.

The program consists of four strands – education foundations, professional inquiry and practice, curriculum study, and studies in subjects. The first of these comprises papers that provide for foundational understanding of education through study of such areas as educational psychology, educational sociology and history and educational philosophy. Professional inquiry and practice (referred to as PIP) comprises three papers focusing on the professional nature of teaching and includes the teaching, or field experience (sometimes called teaching practice) segment of the program. Curriculum study involves study of the New Zealand Curriculum document and associated subject curriculum documents, and of the pedagogy of the subjects referred to in those documents. The studies in subjects strand enables discipline-based study in two essentially different disciplines. Students undertake study in all strands each year of their degree. As with most teacher education programs, this program straddles the twin approaches to teacher education of providing students with current professional knowledge as the basis for their practice as teachers, and developing the skills of critical analysis and discussion of that knowledge base.

The College's approach to teacher education encompasses the view that critical reflection is at the core of good teaching and that such practice is enhanced by interaction between students and between students and lecturers. The program approach is also strongly influenced by a social constructivist view of learning that stresses the role of social interaction as a crucial process in learning. Lecturers in the program are committed to these views. In the distance program, ongoing participation in online discussion is a requirement.

This approach is in accord with Central University's core commitment to the provision of extramural study opportunities for those unable to access campus based study and the provision of more flexible opportunities for all students. The thread that ties these commitments is the vision of developing genuine learning communities among teachers and students, a vision that is particularly suited to enactment through online learning and teaching.

The College of Education's distance teacher education program (which will be abbreviated to DTEP since the students in the program regularly used its acronym) is a web-enhanced program. Students, the vast majority of whom are required to enroll as full time distance students, receive a weighty box of print material and other resources at the beginning of each semester. The print material comprises study guides, an administration handbook and several books of readings for each of their papers, and is usually accompanied by a small range of other resources such as videos, tape recordings and kits for subjects such as science, mathematics and technology. Each paper has its own WebCT site and within that a class bulletin board

that enables small group and whole class discussion. In addition students undertake field experience that involves them being placed in schools to observe and teach.

The study guides for each paper contain activities that the students are required to undertake and discuss online. Activities are typically written to encourage initial discussion online in small groups of five to seven members. These groups have common membership, or a core of common membership across all papers in a year group. Following small group online discussion, groups report to a whole class forum and additional class-wide discussion occurs there. All students in the program are required to participate in an online discussion for every paper in which they are enrolled as a part of their program of study. This means that most students are engaged in four or five different paper-based discussions each semester.

#### Choosing papers, gaining participants

The group of papers available for inclusion in this study, fifteen altogether, were spread evenly over the three years of the program. Since the program is cohort based, three groups of students (first, second and third year students) could be approached to participate. The program coordinators were approached and agreed to support the study. From discussions with the coordinators it became apparent that participation should be limited to students in the second and third year groups. The coordinators' experience had taught them that learning to use WebCT was likely to impact considerably on the way in which first year students would engage in online discussion. The second and third year students were regarded as being at ease with the system and concentrating on their course of study without the distraction of major technological issues. This limited the choice of papers to ten.

The coordinators provided additional help in the form of suggestions about individual papers that were likely to provide a good match with the requirements of the research. This help was based on their knowledge of the paper lecturers and of the type of online delivery engaged in by each lecturer. From a short list of four papers two were chosen – one from each year group – and the lecturers were approached to gain their support to undertake the study with their class. At the same time, the College Pro Vice-Chancellor was approached to provide a letter of organizational support. Support from all three individuals was obtained. (A letter of organizational support was subsequently lodged with The Pennsylvania State University's Office of Regulatory Compliance.)

Contact with students was initiated through the lecturer in each paper placing a message from the researcher (Appendix D) in the whole-class forum. The papers involved were entitled Reading Curriculum (a second year paper) and Professional Inquiry and Practice 3 (a third year paper) respectively. For the second year paper the class forum involved all 88 students. In the third year paper, the class had been divided in two and the class forum involved 28 students. Students contacted the researcher to indicate their decision to participate and to arrange to be sent an informed consent form. Fifteen second year and 10 third year students agreed to participate and returned informed consent forms.

The study reported here had permission to access only the class forums for each paper, and in neither paper did all students agree to participate in the study. This had consequences related to the collection and use of transcript data for the study that

were noted in the previous chapter and which are discussed as a limitation of the research in the next chapter.

In the remainder of the chapter, quotations from participants are referenced as, for example, (1, 23). The first numeral represents the interview – first or second – the second number represents the paragraph number in the Nvivo software file recording the transcript of that interview.

### The Students – Before the Beginning

This section introduces the students who were participants in the study. Twenty five students agreed to be interviewed, 20 of those were interviewed a second time. Of the group, only one was male, a reflection of the group of students from which interview participants were drawn. Of a group totaling 160 students in the second and third year cohorts, 15 were male. Although the focus of this study lies elsewhere, understanding of the background of participants helps establish the context within which they act as distance students. This section fleshes out our view of these participants as teacher education students studying at a distance. It starts at the point that binds them all – a decision to study to become a teacher – and considers two factors related to their choice of program, their education history and previous distance education experience. How they felt about “being a distance student” is examined next, as the participants talk about matters such as workload, study patterns and the matter of being full time in their pursuit of study at a distance.

### Why I want to be a teacher

No matter how varied their background, all participants have in common the fact that they have chosen to study to become a teacher. Three paths to the decision can be seen to exist. A very dominant response is one that can be termed “evolutionary” – a gradual movement to a place or time in life where the decision to enroll in the program was taken. For some of these, the stayers, the choice was easy. They had always wanted to be teachers. That choice appeared to have stayed as a part of their lives even if engagement with it was delayed. For others that history didn’t exist and the decision was more a gradual accretion of experience and feeling. Finally, a very small number made what might be termed a pragmatic decision, where choosing to be a teacher had been a decision made given their immediate circumstances and future plans.

The evolutionists drew a picture across time in order to explain their decision. They traced a path into teaching that arose from a series of involvements related to their children’s activities prior to the decision to become a teacher. Jan’s trajectory could almost be described as classic:

sport has actually been a huge thing and I’ve always been involved in coaching and yeah things to do with sport down at school. And then it just sort of has followed on from there that I became involved in other things at school as well and spent more time at school than home getting nothing from it apart from having a great time. So it was mentioned to me, you know, quite a few times why don’t you do this, this occupation. But teacher aiding was what I was actually going to do because that was the easy way out for me really. It was the, you know, a lot of teacher aiding jobs you could just go in and just do without having to have any formal documentation. But nothing had sort of come up at that point in time when I found out about the correspondence course so I thought well that is me (1, 30)

The background in teacher aiding is a common thread for this group.

I was a teacher aide, and that interested me, so I did some teacher aide papers ... 5 years ago I started doing that, so and I did sort of a paper a semester as well as working and that and then yeah, decided sort of part way through I really want to teach so I waited until my youngest child went to school and then he sort of started school and a week later I started university (Mary, 1, 46)

I didn't go into it too deep. I wanted to do I had done my teachers aide and higher teachers aide. I wanted to move onto something. (Alison, 1, 73)

The “stayers”, those who knew they always wanted to be teachers, quite often expressed that sentiment directly. Heather's comment “but I have always wanted to be a teacher, and um its just a you know real real passion” (1, 122) demonstrates this sentiment and hints at how she had gone to other employment on leaving school, and continued in a career outside education. For the stayers, when outside influences intervened and careers became former careers, the move to teaching was an obvious one:

I applied for training college when I was at school and got accepted, umed and ahead, and a job came up and I applied for it and got it (and later) But deep down inside of me I always think that as I got a bit older my regret for not going further because at the time I knew I probably had the capability to do it it sort of just, was always just sitting there. Do you know what I mean? And so I sort of said to my husband, we were fortunate in position financially, that I said to him when the children finish school I'm going to go back and I'm going to do something different (Moana, 1,45)

The pragmatists looked upon teaching as a means to an end. “I wanted to train to be a teacher for a couple of reasons. Partly because my husband is a trained teacher and you can, it's a wonderful passport to travel the world being a teaching couple” (1, 62) was Esther's comment in her first interview, while Bev saw how teaching could fit her life: “one of the options that I had looked at when I did this business course was teaching and it seemed like a good option raising two children on my own” (1, 419).

It is useful to think of participants in these ways because they reveal the potential commitment toward their chosen goal. The desire to teach, or involvement in teaching related activities, has been part of the life of the evolutionists and the stayers for a considerable time, conveying a sense of “this is what I am meant to do”. The many fewer pragmatists convey an initial sense of “this will be a useful part of my life”, rather than being driven by an urge to be involved in children’s learning.

#### Education history

None of the participants in this research had entered the program straight from school. Between the time they had left school and entered the program only one had not undertaken study of some kind. Some had studied to gain qualifications at tertiary institutions; others had attended courses through their place of work; and a few had done both. Periods of study were typically interspersed with other life activities. Brenda’s story exemplifies this:

I went to ... University in 1986 and did two sociology papers with an aim to slowly work towards a degree in social work. Anyway, I had got pregnant in that year so I left at the end of the year and moved back to (text deleted) ... And in 1990 maybe I went to the community polytech here ... and did a community skills certificate course. So that was about community development and community work. And I did that and then, and got a job from afterwards from doing that. And in about 1994 maybe I went back to the (text deleted) Polytechnic who was giving, delivering a course.... It was called the National Certificate in Care for the Elderly. Since that I’ve done just small little one-off modules in the nursing field, dementia and Parkinson’s and so on and so forth. Just one-off modules. And then in the year 2000 I started at Central University, doing a Bachelor of Education (1, 21).

Experience of distance education was more varied. The group was evenly split between those who had undertaken distance study before entering the program and those who had not. Between them students with distance education experience

had undertaken courses of study with: the New Zealand Correspondence School as adult students; the Open Polytechnic; Massey University for both degree and sub-degree (Teacher's Aide Certificate) study; and a private distance education provider. The distance study was all correspondence based, with students indicating there was a low level of interaction, and none indicating that there was ever interaction between students. "They send you a box of books and then that was it. There was no, it was terribly difficult to get hold of lecturers and things like that, so no, it was just basically books and off you go ... you really got no feedback. You'd just get your mark back and that would be it." said Heidi (1, 18), with slightly more interaction noted by Mary (1, 46-56):

R(earcher):The teacher aide courses you did, obviously were all distance courses?

M(ary): They were yep

R: And they were totally correspondence?

M: They were, but we could ring up our tutors and talk to them if we sort of were a bit stumped or stuck or anything

R: Did you ever do that at all?

M: I did I talked to a couple of tutors who were obviously, one of them was a primary school teacher herself I mean I just to sort of clarify that I was doing the right thing, a long time away from study, etc.

From this background of ongoing but infrequent, part-time and usually sub-degree study students moved to become full time degree-seeking students. For those with distance education experience, the move was also from first and second generation distance study (Nipper, 1989) with relatively little interaction into a mode of distance study requiring ongoing involvement and interaction with their peers, and their lecturer. The next section describes how the participants depict that experience, and shows how students think about learning while being a distance student.

### Learning as a Full time Distance Student

How do the participants in the study see themselves as distance learners?

Knowing how these students saw themselves as distance learners and how they viewed the circumstances of their distance learning is useful background when we move to consider how and why they interact as they do. Several themes come through in students' discussion of being a distance student. The busy-ness of life as a learner, organizational and time management skills, isolation, support, and being independent and in control of one's learning were important elements. These themes will be described in the three following sections. First being busy and organized is considered, subsequently isolation and support, and finally independence and control. Participants were also asked about to describe how they learnt as distance students, and three themes related to this question are described in the final sub-sections.

#### Busy and organized – for family and study

R(earcher): ...could you just sort of run through what you might call a typical day for you as a student? Let's start with your 9 o'clock walk.

H(eather): It's not normally at 9.00. Okay um I do a subject per day and then I finish that whole subject and I put it behind me the only thing I do carry on doing is that I do keep on checking the bulletin board every single day for that subject so I don't only check it on a Monday, so lets say for instance I do PIP on a Monday and yeah I'll check everyday through PIP and respond and do what I have to do. Um I will start at 8. um and will go onto the bulletin board straight away, that's the first thing I do, check the messages, print off the lecturers message for that week and work with her message and the study notes until about 12 and then 12 o'clock I take a walk, yes, and then have a lunch break and then 1 o'clock I'm back at it again and yeah, I just do all the responses and things like that, and if I finish early, I normally finish at about sort of 3 with PIP, I will either then look at the assignment and do maybe a bit of extra reading for the assignment if I feel I'm in control of that well then I will look at readings for other assignments yeah, so I will just do basic reading and

things like that until 5 and then yeah um I take a break until 9.30 and then from 9.30, yeah until whenever, I do some more reading

R: How late is whenever normally?

H: um ... oh probably 12 is about the average yeah yeah

R: mmm ... it's a long day

H: Yes it is

R: And you manage that 5 days a week?

H: Um normally I'm busy on a weekend as well yeah I do, I just do readings and things like that as well on a weekend yeah ... but I don't, I mean I will go out with my family and things like that, I don't sort of, I just slot the readings in when I'm maybe laying on the couch in front of the TV or something like that, or while the rest are watching TV I'll just be reading (1, 64-66)

Heather's day is not atypical. Joan describes every day as "...typical. You run from one thing to the next and pull your hair out" (1, 73). Alison reports an extreme when she says "I was putting eighty hours in a week. Eighty to ninety hours in a week. It's huge." (1, 127), with Esther taking less time for study but noting the price:

E: I probably try and fit it into forty hours a week and I study in the weekends and evenings a lot. And it's never enough and I find that I can't stand the pressure sometimes. I just can't.

R(earcher): So what do you do when you can't stand the pressure?

E: I generally be really unpleasant to my husband and burn dinner by accident and cry and ... a whole variety of strategies really. Because they don't come from, they come from, like it doesn't ... it's just when I know that I can't physically achieve in a day the things I have to achieve to meet the deadlines that I've got I just don't know how to cope with that sometimes. (1, 123-127)

Family responsibilities were a consistent part of these students' lives. Nickie says "in between times I'll run off and make dinner and be sure the washing's on" (1, 73); Moana "ran my husband's business, worked part-time outside of that, was a mother, and studied" (1, 53); Joan has a husband who "(comes) in throughout the day. ... Mine's a dairy farmer so he comes in in the morning for breakfast and then he's in for lunch and yeah." (2, 258), and she drops children off and picks them up from school (1, 73) as well. Pamela can't work in the evening because "my evenings are

taken with my other two children, the older two, and my husband.” (1, 153). The interruptions and reactions to them were summed up by Esther who comments: “It annoys me that because I’m not physically obligated to anybody else to be somewhere at a particular time everybody else around me thinks I’m at their disposal” (1, 98). Jan reports similar expectations in (1, 88).

Participants in this study invariably described their lives as busy, with study and family responsibilities giving them a full time occupation. In this way the group is consistent with Thompson’s (1998) description of distance learners as “time-bound adults with multiple roles and responsibilities” (p. 18). However, these students are different in that they are wrapping full time study around seemingly part-time lives, not part time study around full time lives.

These students describe a situation that requires them to be organized in order to survive. They face demanding, time-consuming study requirements and have roles to fulfill as family members. The preceding descriptions give some indication of the non-stop nature of the lives of the research participants. With an at times overwhelming emphasis on study and ongoing family commitments, these students are required to have a strong set of self- (and sometimes other-) management skills. “If you’re not a good time manager and you’re not self motivated and you’re not ... and you’re not sort of goal focused ... and determined then you would drop out because you don’t get your hands held by anybody.” (Esther, 1, 119).

Time management, and strategies related to getting the required work done in time, were important, and varied. Some students, like Liz and Judy, were highly self-organized. Judy described herself as “very disciplined” (1, 161) and Liz talked about:

“being really organized like to the point where I get up on a Sunday night I will plan my week. I’ve got a laminated piece of paper with the date of the week on it and I will write what subject and what I do each day in that week and I will try really hard to stick to it” (1, 140). Others like Alison, organized their work within the time constraints set by the lecturers. When asked about management of her time she replied: “I tried to do that in my first year and it just didn’t work. I tried to (inaudible) remember we all did it. We all tried to work out timetables about I should do this subject at this time and ra ra ra. It just, you got yourself tied up in knots doing it. It was just too hard. So just basically when the lecturer set the work you did the work for what the lecturer set and worked on it that way.” (1, 139). An important strategy was prioritizing the work – both study and family related. Megan (1, 272), typical of many, tied management and prioritizing together “You just learn to manage things as best you can and you prioritize.”

These students work long hours attending to the demands of study and family. Without organizational skills those demands clearly had the potential to be overwhelming. Organizing their time well and setting priorities are key elements in managing their lives. When we start considering questions of the nature and extent of interaction in their distance study we need to remember the time-based constraints within which these students are studying.

In the next section two additional themes that arose during interviews are considered – isolation and support. The title of Eastmond’s (1995) book is an expressive way of encapsulating these themes. While it does suggest a uni-

dimensional nature of each theme, students in fact showed that isolation or “aloneness” and support or “togetherness” took several forms.

#### Alone but together

“Distance education aims to provide instruction in places and times that are convenient for learners” (Moore & Kearsley, 1996, p. 2), and therefore the separation of learners and teachers by either place or time is typical of such an education system. In the case of participants in this study, the separation led to feelings of isolation that were often intense at the beginning of the course of study but at the same time created an awareness of the value of developing relationships with others on the course.

Isolation had distinct meanings for these students. It can be a sense of being separated from others around you, of working alone, undertaking a course of study that was sometimes difficult to understand. This isolation is primarily isolation in a cognitive sense, although for some students the sense of being alone in the program was compounded by a sense of being physically isolated as well. The feeling was particularly strong in the first few months of the program as students had to grapple with the technical and social difficulties of learning to communicate online, and become part of a program of study. Joy (2, 53) says “I think to the first semester you, you're forming those relationships and nothing will ever be, nothing will ever feel as isolated as that first semester”. Ngaire had the same feelings, saying that at the beginning it was a lot more isolated than she thought it would be, because “before you got to know anybody, yeah, it was quite ...you didn't really know what you were doing. There wasn't really anyone to direct you” (1, 73).

Isolation, cast as lack of social contact caused by the need to study intensely on one's own, can hit city- and country-dweller alike. Rachel lives in a large city but reported, "Sometimes it can be lonely because um I'm sitting in my little room with my computer and all my books around me and I'm here in the house all day" (1, 151).

Coming from a moderate sized provincial town, Liz says:

I find being a DTEP student I feel like I live my life by myself. I hate that. Like I'm home all day by myself studying and then my partner will come home and I'm like, come on, lets go out, lets go out, and he's like oh, I'm tired. And so you sort of feel like you're stuck in the house all day and you have no contact with other people. And sometimes that gets to the point where you sort of get really upset by it. (1, 326).

At the small town/rural end of the scale, Esther, coming from a town with one shop and one school says that by Friday night she's "screaming, got cabin fever, have got to leave" (1, 98) and Heather whose nearest neighbor is at least a mile away says "when I get into that motion of study I'd probably go weeks without leaving my home um ... and that gets a bit yeah, it gets a bit depressing I think, especially in the winter" (1, 156).

Isolation from one's peers in the program – the sense of distance education as a solitary experience – did not feature strongly as part of the current experience of students in the program. After one or two years working as cohorts, these students are sharing a sense of togetherness. Responding to a question about the potential disadvantages of distance education Judy singled out the difficulties of geographical isolation as a candidate "I think if you are really um isolated definitely because you are just there. You are a single, solo person." (1, 189) but Rachel's comment suggested that students in the program recognized this potential disadvantage and

helped each other overcome it. “I just sort of feel I get the impression that us DTEPers are more ... have more empathy towards each other because of our isolation in some respects yeah we are more open to being supportive because we are aware of the fact that a lot of us are out in the sticks” (1, 119).

Students overcame isolation and developed a sense of sharing and support within the program in two main ways. All students used the availability of the program’s online communication tools to involve themselves with their peers, and in addition some met face-to-face, or telephoned other students in the program. For nearly all, the online communication was the first means of contact with their peers, and this online contact sometimes led to the formation of small local or regional study groups.

Although students valued the development of local face-to-face groups within the program, it also led to some problems. Knowledge of students enjoying informal study groups sometimes annoyed Esther. She said that

I get really jealous and sort of irrationally jealous that other people (text deleted) will have got together for a coffee group and talked about some assignment and got it licked in an hour. And it’s like and I’ve been here all by myself in my own living room with my own, you know, dirty socks and dishes all around me, trying to come to terms with it by myself (1, 151)

Local group members at times used online forums to communicate and disseminate news of their gatherings. Several study participants mentioned the way this practice was at times inappropriate and sometimes left them with feelings of isolation, and was a waste of their time. Heidi talked about the way such groups developed in-jokes, “On some of the papers there’s some that obviously have met or they live in close proximity and they will have their little in-jokes that respond to

each other in the paper forum” (1, 483) and then described how this affected her, noting the issue of isolation and alluding to the difficulties of time management

if you're feeling isolated anyway it only makes you feel further isolated. You know, so you're having a crappy day, you're in the middle of nowhere, you're studying in a university and you're having problems with the work, and then you get online and all these people are gabbering about nothing. Well not nothing but about things that aren't pertinent to you. And there's plenty of other forums to do it in. And it also saves the messages that go through.(1, 507).

### Independence and control

The earlier review of the literature highlighted the centrality of the concept of control in the study of distance education. Participants, however, used words like control and independence in their own way. The context of participants' use of these words provides a sense of the meaning that should be taken from that use, so that that meaning can later be related to conceptual definitions.

At a program level, these students were involved in a course of study that placed considerable restrictions on their ability to choose what to study. In fact, no choice of papers was available for these students until their final (third) year of study. The program offered comparatively little leeway in determining what would be assessed, and how assessment would occur. Assessment methods and topics in papers are generally fixed until the third year. Students were also obliged to study over set semesters. These factors seem to represent considerable institutional barriers to the sense of independence that students might feel, or develop during their course of study, and their feelings of control within the program.

Moana acknowledged that degree of control institutionally.

Subject matter of course, topic matter is controlled for me so I don't have any control over that um... and I think that um a lot of control is

in the paper um... how I learn it of course is my my own control. So what I'm learning is their control, how I'm learning is my control. I don't really think that I, yeah, what I'm learning is specifically what they're asking me to learn. Um and how I'm learning it is how I decide to do it. (2, 39).

Illustrating Moana's idea of control being in the paper, Judy talked about the following factors as limiting her control of her learning,

The course study guide. And your lecturer. It's not all, it's not a I mean obviously I can go to the library and things like that. I do specific things related to the actual course or the instructions from the lecturer or the assignment due date. But some things you do have control over and some you don't (2, 239)

and David reinforced this notion of control being beyond the student when he said "Well, see, a lecturer can have clear expectations but unless they communicate them to you you may as well not have them. And it's not sufficient to have a sort of obscurely worded paragraph in the front of the handbook" (1, 234).

However, when asked, most students quite clearly thought of themselves as independent learners, responding to the interview question "Do you describe yourself as an independent learner?" with a straightforward "Yes". This sense of independence revolved primarily around their freedom to choose how and when to study, although for some it also meant their ability to study by themselves. Alison encapsulates these points in the following sequence:

R(earcher): do you describe yourself as an independent learner?

A(lison): Um ... most of the time.

R: And ... what does that mean to you?

A: Oh, it means I'm not set to any timetable (laughter). That's the biggest thing I think. I was just thinking about that again. I was thinking I need to clarify that. It was um, it's not, it's even though I like working on my own I, and I like the interaction with other people, I think it's not being set to the timetable.

R: That's the key thing, is it?

A: Yes. Yeah, it's, for me it meant not having to run to a timetable as an internal student. Yeah, that I am just not good at. No I don't, it's just not me.

R: So that's separate from wanting to learn on your own?

A: Well no. I, yeah. I still like learning on my own. I still like doing the research stuff and that on my own and going out there and finding it and um ... yeah, and writing up the stuff on my own. I like to nut off, bounce off ideas with other people. (2, 282-296)

Independence of time and place gives the students a feeling of control that is typified by Heather's response "I control what I'm doing and when I'm doing it and how I'm doing it and everything, um I get the lecturers note and its my problem, if I want to work at 1.00 o'clock in the morning with it, I can work at 1.00. I don't need to sit in a lecture and you know yeah do it there and then and that works great for me too" (1, 50).

Students were more ambivalent about independence as learning on one's own. The idea of social learning activity, apparent in Alison's final response, led one participant to say that she was not an independent learner. Even though Moana does talk about being in control (2, 239, above) she does not feel independent as a learner because: "I cannot sit in my four walls five days a week and learn. I can't do that." (1, 412). Instead she says that "I've got to go out and I've got to throw some ideas off people and source some opinions and talk to people about things." (1, 416). The sense of social interaction as being in conflict with independence was also expressed by Ruth who described herself as an independent learner, but also said "that's possibly what I find difficult is that and that's probably why I keep gravitating towards the computer, because I feel I need that social support which you don't get when you're at home studying by yourself." (2, 171).

The skills involved in learning to study independently – making choices about when and how to study and being relatively self-reliant as a student – were acquired by some over time. Ruth said that she supposed she would be an independent learner (1, 329), and spoke of her experience studying extramural papers before she was part of the DTEP, “I think as a result of doing them extramurally if I wasn’t an independent learner I became one. Yeah.” (1, 333).

Ruth’s experience had led her to independent study habits before participation in the DTEP, but learning during the DTEP experience was also possible. Esther considered that “if you weren’t one (independent learner) already you’d have to develop the skills damn quick” (1, 115), while Liz, in her second year, illustrated “learning-on-the-job”.

I think the second semester when I sort of had a better idea about what I was doing I sort of felt more comfortable and got more into the routine whereas the first semester of my first year was just a mess and I was stressed the whole time. And this semester even again I feel even more relaxed and more confident about what I am doing and so, you know, it doesn’t have such impact on yourself, your personal relationships and stuff. You’re not stressed all the time. (1, 47)

Pamela came to like learning on her own after an initial period where she found no pleasure in it, (1, 119-125) and enjoyed it “because I can work at my own pace” (1, 133). Echoing the earlier involvement of social interaction as part of learning she added “so I quite like working on my own and then getting feedback once I’ve finished what I am doing” (1, 133). This ability to study independently was something she had discovered about herself “I haven’t really done school work since I left school. Yeah so I didn’t know that that was part of my ... makeup if you like. Yeah.” (1, 137).

The participants in this research could be described as relatively experienced distance students. The intensity of their full time study has led them to develop a range of personal skills and attitudes that have contributed to their survival and growth while learning at a distance. However, in an academic course of study, students must also have a set of academic skills to ensure their achievement in academic terms.

Strategies for learning, the learning environment and learner characteristics were the three areas students discussed when asked how they learnt. For the first, many participants described things that they did to help them learn. Course print material was a major focus of attention for participants and strategies involving interaction with that material constituted the major element of description. A small number of participants considered the second and the third areas. The learning environment was described in terms of where people worked and the impact on study. Learner characteristics described were organizational and affective rather than cognitive. The range of ways in which the participants described “How I learn” are reported in the following sub-sections.

#### Characteristics required for learning

The importance of time management as a skill has been mentioned in an earlier section. This skill applied to both study and the life that students wove around that study. In addition students talked about focus, motivation and self-discipline as key characteristics that were needed in study in the program.

Focus appeared to have two meanings – purpose, used by a few, and concentration. Students had to understand the purpose for their on-going study almost

as a pre-requisite to making progress. In her second year Moana had had to refocus her mind and ask herself “why am I doing this?” (1, 65). Bev’s response suggested that she saw her cohort as having a common understanding of the goal of study “We’ve got a purpose and we’re focusing on that purpose” (1, 440). The second meaning of focus implied not being distracted, either during study periods, or from the long term goal of passing. At a personal level, Pamela indicated that a common strategy was to “sit and read. Pretty focused. Yeah” (1, 177). Ngaire talked about how group work is “actually very focused” (1, 152). With a more long term view, Megan noted that “you have to be very focused and very committed and very responsible. I mean you’re it and there’s no one to blame but yourself if you’re behind, you know, or you’ve just slacked off for a couple of days, you know” (1, 80). Liz, who commented that many of her fellow students were older than her (1, 362) pointed to a reason for this focus in saying “they want to get it done in the three years and get out there working while they’ve still got the time” (1, 160).

Ruth (1, 177) tied together several learner characteristics when she said:

I think yes, you’ve got to be definitely good at time-management. You know, you’ve got to be organised and, as I’ve said a couple of times, you’ve got to be self-motivated. You’ve got to be able to, you know, do the work when it needs to be done.

Her mention of the learner characteristic of motivation being self-motivation was echoed in the responses of others. Joy had studied on-campus before her involvement in the DTEP and noted that “suddenly you’re, you’re sitting at home on your own and you have to motivate yourself to work” (2, 69). Heidi indicated that “you don’t have motivation given to you” (1, 122) and described how she provided her own

motivation “you’ve got to have motivation and you’ve got to have a picture on your head of you standing at the front my picture is of me in my graduation cap” (1, 94).

Motivation was not something that came easily to all, or stayed with them. David described how he had spent considerable amounts of time studying two papers extramurally before enrolment in the DTEP, and achieved good results. He started the DTEP program with a similar level of commitment but he was having a real struggle this year with motivation, adding that he could barely maintain the enthusiasm to open a book (1, 47). Susan’s problem with motivation was more short term. Saying that she thought she might be a procrastinator, she described her approach to assignment writing thus “I make myself go and do it and I have set times a day where I have to but it’s not, I don’t, I’m not motivated to do it. I do it because I have to do it. I back myself into a corner to do an assignment. I leave twelve hours before the post” (2, 135).

Motivation was an important personal characteristic of the learning mix for the students, and one that they felt they had to provide for themselves. A similar, related personal characteristic was that of self-discipline. Margaret was clear that the program takes a lot of self-discipline (1, 149), as was Heidi who linked motivation and discipline “So yeah, you’ve got to be hugely self-disciplined and self-motivated and probably selfish I suppose, to a certain extent. And yeah and just get on with it” (1, 102). “Getting on with it” involved a disciplined approach to time-management. Margaret indicated that “it’s easy to not spread your time evenly on the DTEP arrangement. So I think it takes a lot of self-discipline I think” (1, 149), a sentiment

echoed by Mary who tried to be “pretty disciplined as far as the time I put in”.

Brenda suggested that as older students they had an advantage

I am probably more self-disciplined and motivated I think, it's up for debate at the moment but, than perhaps a young student might be. You know, I don't, I have other social constraints but I don't have those sort of wanting to go out with mates every night and get on the piss and da da da da da and things which is typical of teenagers isn't it (1, 41).

### Study conditions

The conditions under which students studied were not always ideal. “I mean here I am doing a bachelors degree in my garage yet I was never, my desk is the tool bench yeah yet I'd never, ever think I am bright enough to actually go in on campus and be an on-campus university student” (Heidi, 1, 62). Where she is relegated to the garage, others made do with a corner of the living room during the day and the bedroom at night (Esther, 1, 179) or dining room (Margaret, 1, 185). This could be a disadvantage; in Esther's case she said that she needed quiet to study well “I can't have the radio on, stuff like that, or the kids or the TV or anything” (1, 179). Susan (2, 143) didn't appear to mind interruptions “I'm quite happy for it to have visitors in the house and, well like mum or my sisters and that, and I will still carry on at my desk, which is in the lounge”, nor did Joan who said such distractions weren't major “I mean the fact that my office area is in the back of the lounge so if the television is going then, you know, it's just environmental things. Yeah. Nothing major” (2, 258).

Two participants did mention having a private space and each indicated that had special advantages. Mary reported “I actually have my very own office in the backyard so everyone traipses across the backyard” with the advantage that “I mean I just, yeah no nothing really sort of interrupts my study” (1, 182). Rachel's “little

office environment” helped her to learn because it had “everything around me that’s important, that motivates me I have photos of students that I’ve taught when on practicum, I’ve got photos of my family around me, I’ve got quotes and they just ... its more that is my motivation to keep going” (1, 163).

### Strategies for learning

In moving from characteristics and environment to strategies for learning, the impact of the study resources sent to the students can be seen. Learning involved mastering the content of the study guides by a preferred means. Participants’ responses reflected the high volume of reading that they had to undertake and the variety of ways in which they sought to obtain understanding of the material and to retain the major concepts and ideas that they encountered – “Because you’re on your own you just have to read it so you need strategies for dealing with that information somehow” (Joy, 1, 117).

Read, and then write, highlight, draw or listen – these were the activities that students described when asked how they learnt. Ruth said that she learnt best by “reading and just retaining it, that written word” (1, 157). Everyone had to read, but only Ruth did not report any additional manipulation of the text. Jan described herself as a great writer but not a great highlighter. “Like I do my readings and if I am reading I have to write bits and pieces down. I just can’t read and remember (and later) Like I do highlight a bit but I usually end up writing down my highlighted bits because I don’t go back to the book again. I usually go back to my notes” (1, 154). The highlighters (such as Heather (1, 78) or Nickie (1, 81)) would highlight the “useful” or “important” pieces of information in the study guide for later reference.

Moving away from written text to listening, viewing or drawing was less frequent. Joy missed being able to hear information and tried to find videos relating to the topic she was studying (1, 115). Susan, who found that if everything was quiet she couldn't concentrate the same, reported "I find I have to say things out loud to myself to make them, for it to make sense. And otherwise you're just reading these great big long readings and they're all going in and it doesn't, it's just a load of rubbish" (1, 189). For two of her papers she made audiotapes, played them in the car and "bored everyone to death with all the different phases of child development. That was a strategy" (1, 189). Describing herself as "very visual" Esther said that "I use lots of diagrams and flowcharts and I like to connect ideas visually on paper if I can", and was the only person to describe mapping or charting techniques. In describing their strategies for learning students overwhelmingly focused on the way they dealt with the text based material sent to them.

Students can apply the strategies described so far without direct interaction with other students or lecturers. Given the program's requirement for group online activities and its professionally based emphasis on collaborative dialog, it is not surprising to see students reporting the use of interaction between themselves and with lecturers and others outside the program as an additional strategy. The interaction described by students was both asynchronous and synchronous.

In the face-to-face world, Dianne loved "talking to the ATs and picking their brains" (1, 74) (ATs are the teachers with whom students spend time on field experience), and as an example of local groups at work Joy told how she would meet locally with two other students in her cohort and talk things over (1, 113). Moving

from face-to-face, but still synchronous, use of the telephone provided a means of contact and chance to discuss topics of study. Judy described this as a huge part of her learning (1, 181) and Heather felt that she'd been really lucky since "I've had a 3rd year student not too far from me and yeah I ring her every single day and I just reflect on what I've done that day and she'll give me her opinion and we'll just sort of yeah discuss it, the two of us and that is just yeah, that's been absolutely invaluable" (1, 93).

In the online world, students' interaction revolved around the use of the class discussion forums and their small discussion groups – both asynchronous means of communication. For Tracey the online world was her starting point for learning for the day: "How do I learn? Well I read every message that goes on the web, which, so normally now at the moment I will come in from my exercise and I will get online straight away. So I'll probably spend half an hour online the minute I get home, read all the messages that came in the day before" (1, 113). Rachel's group was important for her learning since

if I struggle with something, a new concept that's introduced either online by the lecturer or in the study guide or both and I really struggle with it to help me understand it I approach my DTEP group and leave a message for them 'hey I don't understand this can you guys help me come to grips with it. I also send a message to my lecturer (1, 163).

Where Rachel reported using the bulletin boards to go out and proactively seek help, Nickie described how she used them in a reactive manner, taking advantage of the asynchronous nature of the bulletin board. When there was a group activity and students had to post responses she said

unless I'm sure of myself I won't be the first one on and what I do is then go on and see what they are doing and think well now I know,

um, because I think sometimes it takes me some time to think if I am on the right track um, but after I've seen a few comments I think oh no, no, this isn't what I think, this is what I think, so that's what I'll do is go on and read what other people have put up (1, 81).

Both situations describe a valuable use of the bulletin board to help students clarify their thinking about a topic.

Students clearly described interaction with other students in a variety of ways as an important part of their learning and a clear learning strategy. However, the participants' responses gave no indication that the program's online interaction requirement, built into the program on the grounds of pedagogical desirability and also from consideration of teacher education principles (B. Anderson & Simpson, 2002), had pre-eminence as a form of interaction.

### Summary

This section has used the words of the students to describe what it is like to be learning as a full time distance student. It is important to understand the lives of these students before moving on to consider in more detail the nature and extent of online interaction. With this understanding it is possible to contextualize the online actions of participants in this study and to view their practice as students in the wider sense of them as adults in families and communities.

### Interaction

Participants in this research interacted with each other in a number of ways mentioned in the earlier section on "Strategies for learning". In this section they describe the interaction in which they engaged in more detail. Interaction between

students that is not online is considered first, and subsequently online interaction is described in more detail. This section shows the value that students place on the interaction that forms part of their course; how they differentiate between interaction for learning and interaction for support; and what they consider to be the barriers to and encouragement for involvement in interaction online, along with the advantages and limitations of that interaction.

### Interaction of All Types

Students differentiated their modes of interaction in the following way. They spoke of face-to-face discussions; telephone conversations; instant messaging; chatroom meetings; private email, either through WebCT or with other email applications; and the bulletin board that was the focus of small group and whole class discussion. Their responses also made it clear that interaction was for two purposes – learning and support.

Interestingly absent from their descriptions of interaction was the written commentary that lecturers provided on assignments. When mentioned, this was often referred to as “feedback”, considered useful, but different from the interaction that occurred with lecturers online. For example Susan said how she rarely interacted with her lecturers but went on to say “all my assignments have had heaps of information. Like when they come back the tutor’s have really, you know, they tell you exactly where you’ve gone wrong or what are the good points. It’s really clear feedback” (1, 135).

The responses of the participants make it clear that interaction that was not conducted online was an important part of the course. Descriptions of such

interactions also suggest that those interactions are similar to interaction that occurs online, and might in some cases impact on the extent of online interaction. The following table relates types of interaction tool and the location of the dominant use of each.

Table 1

Interaction tools used by students

Outside-class		Within-class	
Synchronous	Asynchronous	Synchronous	Asynchronous
Phone*	E-mail	WebCT chat	WebCT bulletin board – whole class
Instant messenger	WebCT bulletin board – community site		WebCT bulletin board – small group
	WebCT private mail		WebCT private mail

*Note.* \* not computer mediated. Some students also used face-to-face discussion as part of their synchronous within- and outside-class interaction.

### Interaction, Not Online

Telephone and face-to-face interaction was part of the DTEP for many of the students. Only some students were able to work with others in face-to-face groups, but all had the opportunity to interact with others via the phone. Even though channels of online communication were readily available and the formation of face-to-face groups was a purely informal matter not supported by the College, students often made the effort to find others with whom they could meet and converse.

Students found their near-by peers primarily through exchanging addresses and phone numbers online, or through being placed in the same school for teaching experience.

P(amela): I initially, like last year when we first started I felt very, very isolated because um as far as I could tell there was nobody else in the area and you felt a little bit cut off if you like. But once we started the course and got to meet people online, and I actually got to meet a couple of ladies face-to-face that are close, yeah, my gosh, that's really, really good. I have another friend in (text deleted) who rings me quite often and we stay in touch regularly.

R(earcher): And when you say friend, can I just, was she a friend ...

P: No, no, only since we've been doing this. Yeah, and the other two ladies I see quite regularly. Yeah, I hadn't met them until I did this

Students rarely addressed the question of what actually drove them to seek phone or face-to-face interaction explicitly, either in place of or to supplement the online interaction around which the program is based. For example, Ruth tells us that "Talking to a computer isn't the same as talking to a person" (1, 105), and expands this comment by saying of her online program:

the online course learning does have communication, as opposed to the extramural, you know, send out your papers and do them and they send them back type course. So it definitely has a lot more communication. You do have a lecturer who you can talk to online. You have other people who you can talk to as well. So you do form

bonds and make contact and communicate with people but it's not the same as um talking to someone face-to-face (1, 105)

Joy gave a fuller picture of the evolution of her involvement with her face-to-face group. She told how she had started study "I had the first semester working completely in isolation", (1, 189) which was in common with her other two group members. Then, "we found each other last year and we get together and talk about things as well" (1, 113). And now, "we've all worked individually and now we have each other to talk to and we prefer it" (1, 189). Joy declared that "It's just nice to hear a person's voice, you know, when you read so much information to actually speak to a human being is quite nice" (1, 189), implying that the synchronous interaction was complementary rather than essential. This implication is also backed up by the further comment that "This is the only year we've had a choice so our papers are diverse but the ones that are the same we talk about, which is really useful, face-to-face as well as on the web" (1, 113).

In contrast, Mary thought there were times when a phone conversation was essential, suggesting that online communication did not offer a full range of interaction possibilities:

I mean you can interact but there's only so much you can say online and um ... you know sometimes I just need that ability to talk at the end of a telephone more than you do typing away I think, especially if you're stumped on an idea (1, 71)

There were other reasons for preferring these forms of synchronous interaction.

Nickie is in a study group of four people and thought such a group would be useful for everyone because of delays and lack of response sometimes involved in the course online interaction.

it would really help everybody if you've got someone near you can get together you know because its you know quite often you just sort of sit there and you might put something on the net you know and nobody will come back to you the next day and then you think oh well I won't do this and you've gone through all that work for nothing (1, 89).

Nickie was not concerned about what was posted by herself or others, but concern related to this aspect of interaction was the reason that Ruth used the phone sometimes "if I've got, you know, like a silly question I have to put it online for everyone to read and so therefore I hesitate sometimes to ask things that if there was somebody there face-to-face that I would ask" (1, 105). These two reasons, content and responsiveness, both surface again in Sally's response to a question about getting alternative viewpoints in a discussion:

S(ally): Sometimes I think just talking to somebody, just another adult who's on the course and who's got the same workload and the same sort of situation and everything and you tend to ring them up and say, 'Oh look, you know, what am I going to do about this?' You know, 'I've got no idea how to approach this,' and just sort of talk it through. And yeah, you kind of make it just clear in your own head whereas on the board you're limited to what you can, you write a message and it can sometimes it's now it can be um ... it's sort of, like sometimes people write something and someone else will take it the wrong way, you know, like um

R(earcher): So even hang on, let me just interrupt, even in a situation where you're trying to clarify an idea or concept?

S: Yeah. There's odd times when someone's put something up and people have sort of snapped at, you know, really snapped at them and they've come back and said well that's not how I meant, you know, that wasn't what I intended to say. And it's kind of like they have two meanings in their message but because it's just written there in front of you you really you take what you see whereas talking to someone on the phone you can get more of an impression, you know. You can just discuss it. Yeah. And it's instant. Because often if you have a sort of something and you're trying to work through an assignment and you've got a problem and you put it online it could be the next day or something before you get an actual answer

Another aspect of the off-line interaction – audience – can be seen in the opening lines of Sally’s response. Her comments point to the way she sees it necessary to talk with someone in her situation; the shared nature of the context in which she is learning is foregrounded. This is one of the few hints that participants gave about the context for off-line interaction. Liz mentioned how talking with friends who are teachers is helpful (1, 148), and supporting this idea of the need to talk with others, but only if they can understand your context, is this segment from the first interview with Susan (1, 140-144):

S(usn): you want to talk about it all the time. That’s the other thing. It becomes so blimmin interesting to me and I’m like blah blah blah but there’s

R(earcher): You mean the study part of it? [The study part of it] The things you’re learning?

S: Yeah, the things I’m learning. I’m like, ‘Oh (inaudible) this and this is what I learnt today’ and, and the people around you have got no idea what you’re talking about. And so you learn to, you want to talk about it but you can’t because, you know. I’m boring, I’m very boring. So yeah, that’s hard. I’ve found that hard.

Study-related discussion seemed to form the basis of student off-line interaction. The study related functions were primarily two fold. One function is related to the idea of consolidation; clarifying and strengthening understanding of the course content. A second function concerns extension; of being exposed to new ideas and perspectives. Participants also occasionally mentioned the socio-emotional supportive function of interaction.

Participants would typically mention each of these three functions individually, but Jan reports that all of them form part of her picture of off-line discussions with fellow students. Within one speech segment in her first interview she reports that “we clear up a lot of things between ourselves, like a lot of different

misunderstandings” (consolidation); later she says “we’ve all got very different ideas, which is quite good because you come in and you see different perspectives on things and get lots of different ideas and then you can just go with your own, you know, whatever you want to take of everybody’s ideas and things and go with that”

(extension); and finally in relation to socio-emotional support

It makes you feel quite good actually because you understand that you’re not the only one struggling. You’re not the only one tired. Yeah, so it’s, yeah. It keeps you going that you’re not a failure. You’re not a complete failure. Yeah, no, it is reassuring when everyone else is going through the same thing as you. You stop feeling sorry for yourself”(1, 159).

Some students explicitly mentioned the impact that off-line interaction had on their online communication. Ruth’s comment (noted earlier) about substituting an immediate personal conversation for the public asynchronous nature of bulletin board communication provides an example. Dianne comes from a region where a number of students undertaking the course are clustered, and says “I assume some on the course interact a lot over the internet to each other but we haven’t really had to do that because, you know, there are so many of us here” (1, 86). In a second interview she was quite explicit about use of the telephone for interaction in place of online communication. She explained how in her group there was “a little bit of private e-mailing, you know, for encouragement and that sort of thing” (2, 54) but there was less of it amongst her online group “because for us a lot of those particular needs are met just by picking up the telephone” (2, 54). Dianne’s comments suggest replacement, and this is supported by comments Bev made. She talked about how off-line communication was “really good” because it meant “we can bounce ideas off each other”, and then added “but in saying that it’s, the way technology is, you know,

you're just a message away from someone. It doesn't matter if they're down the other end of New Zealand. I mean if there wasn't someone here to ring I could possibly bounce ideas of someone the other end of New Zealand through Web-CT" (1, 130). Although online communication is possible, off-line is often preferred.

This section provides description of the ways in which participants in this study interacted in ways that were not online. Not all students were in a position to meet face-to-face, but where this wasn't possible phone conversations were almost an inevitable occurrence. This form of interaction was not considered essential, but for some it had a definite role to play in circumventing problems they saw in the nature of online interaction. Its use was clearly related to consolidation and extension of course concepts and ideas and it also served as a way of providing socio-emotional support for students. Participant statements seem to indicate that the use of off-line interaction has an impact on the extent of online interaction. The next section considers online interaction and provides the student view of what online interaction is.

#### What is Online Interaction to These Students?

The study participants spend a considerable amount of time reading and posting messages related to their course of study. When they came to define online interaction their focus was on the exchange of messages through the WebCT bulletin board rather than personal message exchange or the use of chatrooms. Jan talked about how interaction was based around the small online groups (1, 163) and Joy confirmed this by suggesting that interaction was "the discussion that takes place between students, whether it's in your study group or on the main site" (1, 125).

Nickie was explicit in the distinction between bulletin board and chatrooms when she said wasn't sure that chatroom discussion should be counted as interaction. The idea of interaction as something that was associated with learning (hence primarily associated with the bulletin board) is expressed in the last few words of this remark of hers:

Online interaction I think I would define it as um let me think ahh, I don't think I would actually define by the chat rooms sort of thing I think I would define it as in the discussion groups that way, yeah [why is that] um oh um it's because I find I suppose it is interactive but I find that when we go into the chat rooms you do discuss what we're going to do and then we have a really good chat or something we talk about our kids you know and what's happening so as far as online learning is concerned (inaudible) in the chatrooms the majority of the interaction isn't learning (1, 93)

The distinction between chatrooms and bulletin board is clear here. There is also slippage from online interaction to online learning that brings about the exclusion of chatrooms as forums for interaction, but also, in this case, acknowledgement of discussion elsewhere as being interaction.

Several factors qualified what interaction was, and was not, but the feature that underpinned most of the students' explanations of interaction was that of responding. In its baldest terms, "online interaction is actually um making yourself available in the first instance and um just responding to people. Because if you're only reading the messages no one knows you're there" (Megan, 1, 128). The foundation of responding is supported by the way students would describe occasions when interaction was not occurring. Pamela answered a question about whether or not all the messaging within her group was interaction with the following reply: "Ah ... sometimes it's not interacting. Sometimes we're just putting stuff in and not

actually responding to what other people have written. When you're only contributing. You're not actually interacting with the group" (1, 240).

Responding to the messages that other people have posted was a defining characteristic of interaction for these students. Students saw that the requirement to go online and post in response to tasks set in the study guide was not necessarily something that could be described as, or resulted in online interaction, even though they were responding to a set task and might be posting once other students' comments in response to the required task has already been posted. Heather (1, 109) said that

the study guides have like questions and quizzes and things that are meant to be emailed to the bulletin board okay, now when we answer those things most of the time everyone is just giving their opinion nobody's looking at the previous guy's or girl's opinion and saying oh yeah no, I don't agree with that or I agree with that and here's my extra bit, um, each person just posts, posts their own things and that's it

and her comments were quite explicitly agreed to by others (e.g., Liz, 1, 244; Heidi, 1, 156; Joan, 1, 264). A comment Joan made was revealing in that it pointed to the fact that students might only be interacting with the messages and making decisions about their value. Her comment and the text that leads up to it resulted from a question about whether people could be posting messages but not interacting. She said:

J(oan): I think that happens lots.

R(earcher): Lots of times?

J: Yeah, lots.

R: Can you give me an example?

J: When I post my weekly tasks every week.

R: Yeah. And so you post your weekly tasks up and that's it?

J: Generally. I read others sometimes. If I like them I print them out, steal them. But that's as far as I go. I don't generally respond to them.

Some students qualified the concept of responding as an indicator of interaction. Mary (1, 130) thought the “nit picking” and “snipping and snarling” that she saw occurring from time to time were not interaction and that when people posted responses that were signaling disagreement and an unwillingness to change one’s mind they were not interacting. Jan (1, 167) thought that if people “actually do connect with your message and comment” it would be interaction, and gave examples like “‘Oh okay I’ve had that happen’ or ‘yeah, I had a similar situation’” as adequate responses. Brenda also mentioned the nature of the response but thought that interaction should not include the occasions when people were registering agreement of the form “oh that was a good reply, I can’t add to that” (1, 228). Also making greater demands on the level of the response were Heidi who felt that you should be “learning off the people you’re interacting with” (1, 160) and Sally who thought that interaction was “a chance to see more people’s points of view” (1, 158). These latter comments support the idea expressed by Nickie earlier in this section that interaction should be associated with learning. Although this was the case, no participant specifically excluded the notion of interaction for social support.

The role of the lecturer was not highlighted at all in the definitions of online interaction. Only one student saw a lead role being played by the lecturer, who would set the topic and task for the week’s discussion so that people would know what they should do. “To me, good online interaction between lecturers and between members of groups is very important” Mary said and later went on “so yeah it involves the lecturer kind of being there to tell you whether you are right”(1, 107).

In sum, study participants tended to think of online interaction as having three main characteristics. It was conducted via the WebCT bulletin boards, it required an element of responsiveness, and it would primarily be about learning or at least in the learning related forums on the program's WebCT sites. The requirement of the element of responsiveness is one that distinguishes participant views of online interaction from the more holistic definition adopted in this study. The participant view is a more constrained view, and may have provided limits on the extent to which participants felt they contributed to or were involved in online interaction, as well as limiting their perception of the extent of interaction.

The restriction to bulletin boards is somewhat surprising since participants talked fairly extensively about communication with other students using WebCT private mail, and also mentioned the use of chat rooms, ICQ, and email packages and these forms of communication provide further means for online interaction. Since interaction is defined in this study in a holistic manner, these alternative forms of online interaction must be taken into account. Participant descriptions of the use of forms of online communication not involving bulletin boards are considered next.

#### Interaction Online Beyond The Bulletin Boards

Participants had access to a range of interaction possibilities beyond the WebCT bulletin boards in their program. The WebCT private mail system was the form of communication that participants referred to most frequently, with the WebCT chat rooms also being a well-acknowledged channel of communication within the program. Messaging systems such as ICQ and Hotmail messaging were not often mentioned. The distinction between the two major forms of communication is that

WebCT private mail is asynchronous and accessible only to the sender and recipient; WebCT chat room interaction is synchronous and accessible to anyone involved in the chat. They will be referred to as private mail and chat rooms from here on.

Private mail was used for personal messages. Although this seems an obvious statement, it was made several times to emphasize the distinction between exchanges between individuals that they didn't mind others seeing, and exchanges that they wanted kept from public gaze.

B(renda): Well if it's personal you private mail. If it's not personal you put it on the forum.

R(esearcher): And yet what you're talking about is just helping people.

B: It's a difference. If it's a general hint or tip I would put it on the main forum but if it's specific to a person like this woman that I told you about, definitely personal. (1, 212-216)

No participant, nor the researcher, had a way of determining the extent of private mailing or seeing who was involved. Participants who commented on the extent of private mailing tended to think that a lot of communication occurred that way. When he discovered that the researcher didn't see the private mail, David said, "You miss a hell of a lot then" (1, 286). Joy concurred, saying, "there are a lot of private messages that go around", but noting that it's "going to vary a lot from person to person" (1, 293). Megan said that the lecturers don't see "all the private emails that are flying around" and thought there would be a lot (1, 218-222). Private mail seemed to be used routinely between people who knew each other. Mary (1, 146) talked about the "little cliquey groups that we interact with more privately" (1, 146), as did Rachel (1, 259) and Jan mentioned how she private mails "usually with the people that I know, like the ones from my other (face-to-face) group" (1, 305). No participant ever spoke directly of using private mail to communicate with people they

didn't know. However, participants did speak about sending personal responses to general questions posted on the main public forum, implying that private mail did flow between students relatively unknown to each other. David said "I don't like clogging the board with gunk. And if it's something that one person wants I think it's probably better manners to private mail them" (2, 156). This type of mail could be described as being a relatively surface level exchange. However, there was also the more intimate exchange that sometimes occurred. From his earlier comment, David went on "And if it's someone has done something wrong or is having a problem with something I like, you know, you wouldn't yell it across a crowded cafeteria. You'd sort of collar them in the hallway sort of thing and talk to them so that it's private or less embarrassing" (2, 156).

Private mail seems to be used for a three main reasons, best summarized as: to avoid or save others from embarrassment; to provide support, both socio-emotional, and for learning; and to avoid the tutor's gaze. An additional reason given was that of asking questions directly of a lecturer, rather than using a public forum.

"I suppose I would use private mail if I thought the question was so dumb I didn't want to embarrass myself" said Brenda (1, 325). Her plan of action was endorsed by Susan (1, 368) who gave an example of her use of private mail and concluded with "so that's the kind of thing, the things I don't really want to make a fool of myself over [you private mail] I private mail ... it is, well it's just private". Embarrassment could arise as a result of misunderstanding someone else's post, (Pamela, 1, 274); not understanding the course material (Ruth, 2, 67); or when expressing the need for help in some form. Participants also reported using the

private mail system to avoid embarrassing other students, as in the case of David reported above or Susan (2, 31) who reported using private mail to check personally with her group about contributions to required weekly tasks.

The only way of communicating beyond the lecturer's gaze was through private mail since lecturers sometimes accessed the small group forums. Brenda was explicit in her statement that there were times when "you might not want your tutor to know that you're helping somebody" (1, 220), and related an example of how she had given considerable help to a student who had some difficulty with a task. Dianne also noted this reason for private mail use saying, "this year all the papers bar one, tutors visited the group. They don't necessarily make a comment but they are able to get into. And that's probably why private mail is being used (laughter)" (1, 161).

Some participants reported using private mail to access lecturers. They felt that lecturers put time aside to answer individual questions from their online students and that they received full and relatively prompt responses.

Providing support for fellow students is the final reason to be noted here. The earlier comment by David points to the way students were alert to difficulties – either cognitive or emotional – faced by each other. This often meant that they had to make inferences from what was being said or how a message was expressed. Megan talked about the need to "read between the lines" in a way that might lead her to think she could offer to help someone by private mailing them (1, 222), and Judy explained:

And so you get online and just by that comment that someone might make or a response to a certain thing you can sort of pick up on how they may feel so you might say make a reply to them in private and just say, 'Oh yeah, I agree with what you say, you know. I'm finding it pretty hard too, you know. I'm finding this, this, and this.' And just

(inaudible) sound them out a bit before you go in and go oh, you know, have a good old moan (2, 66-67)

These comments show how students could and did reach out to each other.

Students also took the initiative to support their own learning by using private mail to follow up on posts made to a bulletin board. In explaining this, Joy, a third year student, also walks through the process by which students formed relationships with others on the course and how this has an impact on the use of the bulletin board during class discussion. She says:

if there is something that someone says that interests you, you can go there and follow it that way. You don't actually want it to be seen on the main site you can choose to respond to that person privately and initiate a conversation with them one on one. You can do that. (1, 293)

And then:

Ah ... as you get to know people and form those sort of associations through the papers if you've got a question you might pose it directly to that person (1, 293)

so that by the time students are in their third year, private mail becomes a useful learning tool.

In the third year I think you, because it's a little bit like the relationships are formed in the first year. There are two or three people who you have got to know and whose opinions you respect that you will throw ideas around with. So I will probably go directly to them rather than posting it to my group. In a way I guess it saves time (1, 301).

Another third year student, Heather, supported this progression saying, "I think that as it goes along the private mail aspect gets a lot more and more and more" adding that "for me it has been, its been really great just having that yeah knowledge that you can just private mail somebody, and especially somebody that you know you built a rapport with" (1, 168).

Private mail appears to add a considerable amount to the extent of online interaction in the program. It provides both cognitive and affective support, and makes available a personal space in which students can find each other and resolve issues away from the gaze of their fellow students and lecturers. There is the possibility that private mail use grows over time as students become more familiar with each other. Such growth seems to be slow, possibly due to the policy of regularly changing the mix of students in small discussion groups.

Other forms of online communication were not spoken of as frequently as the private mail system. Students did report using the chat rooms, but comments about their value were mixed. Most prominent in the range of comments was the theme that chatting synchronously was difficult to organize and sustain. Megan reported that using the chat rooms

people would be ten minutes late or they'd go into the wrong room. We had people that couldn't type as quickly as others. And what used to happen, you'd have three trains of conversation going so you'd be thinking, you'd be waiting for an answer or someone to respond to you and then somebody would put something up at the same time as that response so then you think well, who am I talking to and who's answering who here and it would get quite difficult that way (1, 251)

and others reported that the chat rooms were ineffective and frustrating (David, 2, 156; Heidi, 438); people wouldn't turn up (Liz, 1, 95); or that it was hard to coordinate availability (Brenda, 1, 404).

Finally, a small number of students talked about their use of instant messaging. Indicative of this group, Ngaire indicated that it gave a quick and informal way of keeping in touch with students in the program that she had come to know (1, 121) and how it could be a good support mechanism because it was

immediate, and when fellow students were frustrated or depressed you could talk them through it (1, 131).

The use of forms of online communication beyond the bulletin board provided students with a range of ways of conducting their business as distance students. In the way that off-line communication was a complement (and substitute) for online communication, so is the range of communication forms discussed in this section a complement to (and occasional substitute for) the use of the bulletin boards. It is clear from the responses of participants that online interaction is not limited to the bulletin boards that are seen to serve as the principal forum for interaction in the program, and that the tasks of learning and support are undertaken in substantial ways beyond that public gaze.

### Asynchronous Interaction Online

This section tracks the growth of study participants from individuals without any social connections to a group, and many sub-groups, of interacting students. It starts with their descriptions of the time at the beginning of their course of study, describes how and why they changed the way they interacted, and notes the value that participants saw arising from their online interaction.

#### Going online initially

After speaking about how much interaction she engaged in at the time of the interview, Ngaire was asked:

R(earcher): What was it like for you at the start of your course? Can you remember back then?

N(gaire): Scary as.

R: Scary as?

N: Oh terrible.

R: Why was that?

N: I was terrified.

R: Of what?

N: Um, the unknown I suppose. (1, 300-314)

Ngairé was not the only participant to report such feelings. Words like nervous, daunted, scared, petrified and tentative surfaced within the descriptions of going online in the initial weeks of the program. Ngairé went on to explain how it felt, saying “you walk into a new job or you are walking into a new situation where you don’t know anybody. You’ve got no idea the expectations, yeah, you sort of, because you’re isolated you don’t sort, it’s the new girl on the block. You don’t know what to do and things like that” (1, 330).

Three reasons were given for the feelings that existed. Sometimes participants talked about more than one of these, but usually there was one main reason that going online initially was difficult. The three reasons were: administrative difficulties; technical difficulties such as problems with hardware or not understanding the WebCT system of bulletin boards and how they were used in the program; and, not being sure how one would be perceived as a result of the messages that were sent.

Administrative difficulties were not often cited. However, several students reported having difficulty with the usernames and passwords required for entry to the program sites or being a late enrolment in the program and consequently not receiving information about accessing the sites until several weeks into the semester.

Joan, who had been a late enrolment, reported that

it still took me a couple of weeks to get online. And when I opened up the papers there was about twelve hundred messages to be read and it took me hours to get through the messages. And I didn’t know what

any of them were on about. You know, it was really quite overwhelming (1, 304).

Technically, the program attempted to address possible issues through a self-attested selection requirement for the program that students be competent computer users with a current Internet connection. Participant responses to questions about computer expertise in their first days as students in the program indicate that this requirement was not always met. For example, Susan reported that she didn't have any computer experience at all (1, 204) and Dianne said she had no experience with the Internet. They were not alone in lacking expertise. Some had taken computer courses in the past or more recently as part of their preparation for the program – “I knew I was going to apply for this and I went and did that computing course. So I was sort of a bit confident” (Alison, 1, 97) – but still found the process of going online overwhelming. Alison continued “mind you I had no idea what WebCT would be like either. That was a bit of a mission” (1, 97).

As full time students, participants needed to access five WebCT sites. While the use of a “my WebCT” page that acted as a portal to all of a student's sites made access relatively easy, there is still the issue of understanding the WebCT system of bulletin boards, private mail, and chat rooms for interaction. Megan thought “the whole online DTEP system was quite huge really to take on and to get to grips with” (1, 72). Getting to grips with the system did not take too long however. Ngaire reported that after a month it was “old hat” (1, 73), a time span that Sally also used: “sort of learning Web-CT as well. That was quite, that took the first sort of three weeks just to get familiar with it” (1, 58).

The last of the three reasons relates to the way participants were concerned about what might happen as a result of the messages they posted. Asked about participating in the online discussion in the early months of the program, Nickie said she was

worried I'd come across thick I suppose or not knowing so quite a lot of the time in the first while I very rarely would. Unless it was just to give an answer I wouldn't go on. I'd go through and read um but yeah I must admit in the first months I would hardly ever in fact I would never have even dreamt of going into a chat room or anything I'd think oh no I just couldn't (1, 133)

Joy talked about how she was nervous about posting and how she felt "really conscious of how and what I was going to say" (1, 221), and Pamela felt "not very comfortable" since "just to actually put your words down in a public forum like that and to have somebody maybe not, disagree with you it just sort of, initially was really quite terrifying" (1, 375).

A final feature of those first few weeks of the students' time in the program is seen in comments about the program environment. Participants worked through the problems they faced with support from other students in the program. Sometimes those students were in the same cohort, sometimes from elsewhere in the program. Joy pointed out that "a lot of people are quite happy to help out of course" (1, 68), while Susan (1, 204) gave an example of the number of people in her cohort who provided help:

then they all said you'll all have to take a work turn at compiling work and sending it to the tutor for each group. Well I just kept thinking, you know, I hope they put me last because that will give me how many weeks to work out how to do it. And in the end I just, I mean I asked somebody, put up a message asking can you tell me how you would do that and I must have got about ten responses

The more experienced second and third year students provided guidelines for first year students through the WebCT site that is open for all in the program. Ruth reported that the first year students' initial concern and queries about going online were responded to when "the second years and third years came online and said, you know, stop worrying about it. Before you know it you'll have too much to do. Yeah. And um, you know, it sort of just started to flow" (1, 335).

It just started to flow. That participants became more competent and confident in their online interaction is evident as the following section shows. That section relates to the ways in which changes in interaction and involvement in class interaction are described by participants. The changes occurred as a group of students, initially at least wary and some describing themselves as terrified, came to grips with a communication environment that was unfamiliar, and made it their own.

#### Being involved in interaction

Study participants were required to participate in online interaction. This requirement would have driven them to post messages, but students went beyond the requirement with some even talking of the need to interact being an addiction. This change, the way participants describe the extent of their current involvement in online interaction, and the way they talk about engaging online as a requirement and for personal reasons are considered in this section.

At the start of the previous section, Ngaire spoke of being terrified initially.

She was then asked:

R(earcher): And how did it get better?

N(gaire): The more I worked online, and once I got into our group and interacted with people in our group you got more familiar and, yeah,

no, it just sort of that's how it worked. Yeah, the more practice you got, the better you were, like anything else (1, 316-318)

For Joy, the move was from trauma to addiction. As described earlier she had concerns about her messages, but:

It's changed a lot. Initially ...posting the very first message is so traumatic. You write these words and send them out into the ether and think my goodness, will anybody talk to me? It's such a nerve-wracking experience. And then ... yeah. The whole DTEP thing can actually become quite addictive. You can find yourself with the computer turned on checking messages far more often than you need to probably. It's that lifeline, that sense that there's someone else out there (1, 221)

These two portrayals of changing attitudes are typical of responses that participants gave when asked if their involvement in interaction had changed; there was a sense that working with other students online was now an accepted part of being a student in the program. The change seems to have come about for two reasons. A small number of students spoke of gaining a sense of familiarity, just knowing what is happening (e.g., Mary, 1, 154; Moana, 1, 396); more spoke about having gained in confidence since those first few days and weeks.

The increased confidence students felt arose in several ways, each of which had an impact on student engagement in interaction online. Pamela became more confident in her own point of view. When asked why she wasn't worried about posting online she replied:

P: I just feel comfortable with it now. It doesn't matter. Yeah, I don't care if that so and so up the road doesn't agree with me any more. Yeah.

R(earcher): Because? Because you

P: Yeah, my self-confidence has improved. Yeah. And I feel that this is what I think. It doesn't mean that you have to think it the same way (1, 379-383)

Mary (1, 154) just knew now that she was going to learn, and being confident in this meant that she engaged online on her terms. Likewise, Rachel felt that gaining experience of studying at a distance had helped her to feel more comfortable as a student and led her to want to engage more online (1, 214). David, who described himself as a keen and reasonably good public speaker in his previous employment, said that he was very shy initially on the bulletin board and “very conscious of not wanting to offend people or come across as big noting” (1, 175). He said that his use had changed because he had developed more confidence (1, 82); he had tended to hasten slowly and discovered the value of interaction with his fellow students.

Heather’s experience was a little different, but still shows how confidence can grow. An exchange of messages very early in the first semester left her feeling devastated and then “I moved toward the background and I decided well I’m just going to do my bit and that’s what I sort of did for the next 2 years” (1, 46). But this year “I’ve decided no I really did well in the first two years and I think I have something to offer and I’m going to offer it, if they like or not” concluding “um yeah its really been working well”.

Heather was also led into the online arena by the feeling that as a third year student she could offer support to other students. She described how she had noticed a new student having difficulty and had been able to help her with the result that “that’s sort of got me thinking again oh you know maybe it isn’t such a bad thing” (1, 46). Jan also reported how she now went online to help others, saying that she “can see the people floundering and I think, I know that I wanted help as a beginning

student who didn't ask for it, and so if I think of anything then perhaps I'll go through and help them" because "I'd hate them to feel like I did at the beginning" (1, 137).

For some participants, the feeling of confidence led into use that they now describe using the language of addiction.

It's that I have withdrawal symptoms like I do. I am shocking. I am quite concerned about it actually. It's like being an alcoholic I think. I can't stop it. You know, at the moment I am studying and I find it extremely difficult not to put my computer on. I have to actually physically stop myself, consciously stop myself doing it because, you know, I am terrified I might have missed something, you know. (Ruth, 2, 49).

Susan talked about getting a bit addicted to it and wanting to know what's happening (1, 184); Alison (1, 399) would "go into withdrawals" if there was a day she missed when she didn't go online; Mary said there were times when she would rather not be tied to the computer, and added "but then you get addicted to it too" (1, 63).

Participants weren't the only ones to notice this addiction. Ngaire reported that her husband "thinks I am obsessed with the Internet; I have a relationship with the Internet" (1, 270). In Judy's case, she says her husband:

was getting very concerned that I was having an affair with someone. I couldn't stay away and I think I felt that I had to be close to it in case messages were posted that were so important that I had to read them, you know, that day, that hour, that afternoon, that evening (1, 284)

The key to this addiction appeared to be wanting to know what was going on, what needed to be done or what other people were doing, more intensely than for other students. Part of this drive would have come from the requirement for online interaction, but another part of it could have been a personal need. The next section looks at how students described the need for online interaction.

### Motivation to interact online

Participants were required to interact online as part of their program of study. They could meet this requirement by posting their response to a task. The students did realize that they were ultimately accountable for their involvement in interaction and for the effects it might have. Brenda noted, “We must all participate to pass the course. You know, that is the requirement rather. So I post because of that so my name is there so the tutor is not writing me letters. Because I know that they do” (1, 177). The extent to which this requirement was followed up depended on the lecturer:

there’s two that are really, if you haven’t replied you are told. Like they really, they know. They’ve ticked it off in their book and they come back and they say I have not heard from blah blah blah blah blah, and this is part of the course requirement. And generally when they get quite stroppy, lecturers, people will do it. Everyone contributes. But then you think you get to know the ones that aren’t really following you. They might be quietly following you along. I don’t know (Susan, 2, 71).

However, there was also a second reason to meet this compulsory requirement. Some students felt that a responsibility to other group members played a role in their motivation to respond to the required tasks. Megan said that “it was her responsibility to post for the students to participate” (1, 218). This responsibility presumably arose since most requirements involved developing a group response to the task set by the lecturer. These responses were expected to arise from discussion within groups. Another perspective on this aspect comes from Heather who discussed how it felt when students in her group didn’t participate:

there’s not a response I miss with my study guide work and that was really frustrating to me in the first two years, this year I find its a lot better, but in the first two years there was about two or three of us in the group who were actually contributing to the group and that was really frustrating (1, 125)

Heather (1, 217) also felt that she was in some way letting down the system that had given her access to teacher education if she didn't participate. Mary summed up the need to meet compulsory requirements for interaction as follows "you're expected to participate, so you're worried I guess that if you don't participate, you're in trouble or you're letting somebody down" (1, 67).

Participants also had their own personal reasons to interact online. Moana differentiated between people who needed to interact and those who didn't saying "I need to socially interact so I probably look for it in lots of areas" (1, 243), and Mary also identified herself as someone who needed to know what was going on (1, 67). These two comments indicate a need to be involved with a group and hint at the need for a sense of belonging, but there was clearly a further reason for involvement beyond the requirement, expressed best by Judy and David. Judy acknowledged the requirement aspect but added "I also feel that because of what I do and the work that I am involved in I've got quite a bit to offer in a lot of areas" (1, 225); David supported the importance of this type of sharing of knowledge "I think what drives it is the desire to share knowledge. And ... that when that knowledge is regarded as worthy of passing onto people, and people have the confidence to pass it on, they will share it" (1, 124).

Motivation to interact online is multi-faceted. A requirement drives participants at least part of the way and for some may be the entire motivation. Joan indicated that if there wasn't a requirement to interact there would be none, or very little interaction (1, 215-221). Others pursue interaction because it promises to sate the desire for social contact, a point that may be especially important for those in

isolated settings. Finally, some may choose to interact because sharing knowledge is, for them, the essence of an educational community.

#### Current level of involvement

Both posting messages and reading them contribute to interaction. In an earlier section the participants in this study talked about interaction in terms of responsiveness; interaction involved responding to someone else. It was not sufficient to simply post a message. Participants recognized the difference between posting a message to meet a requirement and posting within a debate. Margaret made this clear when she said, “I am an active participant on things that have to be posted up. Like if I have to have a topic answered by Thursday I contribute but I don’t sit there and just interact constantly” (1, 69).

Seeing interaction in terms of responsiveness tells us that students must read messages before posting. It may be useful to see what this might involve. For the 88 second-year students, the total number of messages posted in the main forum of their paper during the semester was 1245. For the 28 third year students it was 540. This message count is limited to the main public forum for each paper, to which the researcher had access. It does not include any private forums where students undertook required group work, nor private mail. As full time students taking five papers per semester, participants should be seeing over five times this number of messages on public forums alone during the 13 week semester.

Participation in online interaction through the bulletin board varied widely. Participants were variously asked if people contributed equally, if some rarely went online or if there were those that contributed frequently. Alison was the only person

to suggest that there was some sort of equality in contribution, but she quickly modified this response. Asked if people contribute equally she said “Generally. There’s a few odd ones that didn’t. Yeah. And they usually got a huck up from someone” (1, 363). However, the “huck up” tended not to work “those that didn’t generally compile right from the start, or didn’t do their work, didn’t do that all the way through” (1, 375). Mary’s statement that “there are people like that there are people who constantly have excuses as to why they say they’re not contributing” (1, 162) supports this notion of some students as consistently not engaging in interaction.

The more common response to questions about levels of involvement was that there were real differences that became known. Tracey put it like this:

There’s people that are never online, I think, because you get them come in and go, ‘I’m just checking in because I haven’t been online for a few weeks,’ and it’s like, ‘well where have you been?’  
You know. So you do. And then you’ve got the people that obviously are online every day because every other day there’s a message from them on the web. So you know their names, you know who they are, you know, and you know their personalities in a way I guess you can say as well, you know, what kind of person they are (1, 263-264)

Participants varied in their descriptions of themselves as interactive members of the program. As a way to start thinking about their involvement in and contribution to the online aspects of the program, participants were asked to rate themselves on a scale of one to ten, one being very low and ten being a great deal. This question was used to open up spaces for discussion, not provide a quantitative figure, and refinement of initial answers often followed.

Participants were spread across the range from high to low. At the high end Heather and Jan were examples. Heather described her involvement by saying “compared to other people I’d probably say a 10” (1, 121); Jan said, “I’m right up

there. I'm terrible. I'm right in at the beginning and I stick there right to the very end" (1, 184). At the other end of the scale were those who, for various reasons, felt that they didn't or had no need to be involved in online interaction. Judy indicated that she wasn't involved in online interaction a lot saying "for me it's a time thing and I also get frustrated because I'm quite an interactive person" (1, 221), going on to explain that she preferred an immediate response like she got on a phone conversation.

The spaces that the scale question opened for discussion were exemplified by Heather's response that went on as follows:

Compared to other people I'd probably say a 10 [you say an awful lot in other words] yeah [and you read an awful lot as well?] yep I read every message yep even the nonsense ones I read them (and later) (I read everyone of them I don't respond to them ... I only respond to the one's I really feel strong about yeah and I mean I do my study guide work every single, yeah I mean there's not a response I miss with my study guide work (1, 121, 125)

Heather's response shows several things. First she separates the reading and posting elements of the interaction. Second she distinguishes between the compulsory requirement to go online and respond to the study guide tasks, and the voluntary responses she makes to other students, as did Margaret earlier. Third she notes the presence of "nonsense" postings. Finally she responds only to those messages she feels strongly about. These features of her involvement are seen in comments other people made in discussing their own level of involvement.

The distinction between reading and posting is made by Megan as well. Describing herself on the scale as "an eight or a nine", Megan went on

I'd like to be online to make sure that I haven't missed anything like any important information. I try to interact and actually post messages as much as I can so I guess probably an eight as far as actually posting

messages and interacting to conversations and a nine as the responsibility of checking messages and being on (1, 193)

The voluntary/compulsory distinction for posting is seen also in Joan's comments. After saying that there wasn't a lot of content interaction on the site overall (1, 146), Joan made a clear distinction between posting as a requirement and posting voluntarily. In response to a question about her participation she asked

J(oan): Are we talking about participation that is ... part of the course, like you have to have to pass, or are we talking about voluntary participation? ... Because I've been completely different on both of them

R(earcher): Well, if you tell me just, I mean you've raised the distinction, which I think is an interesting one.

J: Well, on the compulsory part I would say I'd give myself a nine out of ten.

R: Okay. So you do what's required. Yeah.

J: Yeah. As much as I possibly can, which is generally always. On the voluntary side I would probably give myself about a one out of ten.

R: Okay. Now tell me what the difference is here. When you say on the compulsory side this means that you are posting

J: Tasks and responses and things like that.

R: Okay. Where you are required to according to the material. Yeah.

J: Pass or fail you have to contribute, and that's what I do.

R: Okay. And on the voluntary side?

J: Questioning. Responding to people's personal, you know, questions. Interacting with others online just, you know, for the sake of interaction. (1, 191-211)

The nonsense messages of Heather's description were seen and disregarded by others. Moana said that she wouldn't get involved and get into "meaningless conversations" with students in other year groups (1, 180). Dianne recognized the social nature of some of the messages in the online interaction. Asked if she did a lot of online interaction she replied,

Yeah I think I do really. Yeah. I do participate um ... in ... definitely in all the tasks but I also do respond to other people's questions in my group. If they're asking, 'What do you think of such and such?' then I will respond to that on the whole, but I am not chitchat. There is a

forum for that on the DTEP community site and I don't often ...  
respond in that (1, 259)

Her response raises another point, namely the way participants respond differentially in small group and main forums. Dianne is clear that she responds in her small group forum, but not necessarily in other forums, and other participants share her differential pattern of involvement. This theme is developed further in a later section.

The final theme expressed in Heather's comment is that of responding to messages. Her tendency to respond on the basis of her strong feelings about messages is reflected in Joy's comment that "I only respond when something really grabs my attention or I feel really strongly about it" (1, 169) and in Rachel's statement that she'll respond "when I have a very strong opinion about an issue being discussed online, or when um ... somebody's comments just really sort of motivate me" (1, 259).

Participant involvement in online discussion, seen through their eyes, varied markedly across the group. But while participation could be considered a monolithic entity that varies along a single axis if viewed strictly in terms of message counts, participant comments show that the level of participation in the discussion groups in this program is dynamically variable in ways that depend on several uniquely independent features of that interaction. Is it required or not? Is the message to do with learning or is it chit chat? How strongly do I feel the need to respond? Have messages been read as the starting point? Participants weigh their answers to these questions in determining responsiveness and consequent engagement and involvement in online interaction. Whether involvement was great or small, every participant commented on the value of involvement in interaction online. The next

section shows how the participants described the ways in which asynchronous interaction online was, or in some cases was not valuable for them and their fellow students.

What value does online interaction have?

The program in which participants were enrolled required that they involve themselves online by posting messages in response to weekly tasks and engaging in task-related small group discussion, before posting a group response to a main class bulletin board. Within the program the online interaction is considered to be an important aspect of student learning, providing the opportunity for students to develop, refine and reflect on their understandings of concepts and ideas that arise within their courses and through their experience in schools. This can be seen in Rachel's comment:

to put it in a nutshell, get online, read what's there, think about it, put online your own understanding, maybe pose a question whatever, and then from the feedback that you get or resulting debate or whatever, taking that into account, to reassess your original ideas and creating a new idea. That's how I understand learning in a nutshell (1, 238)

How valuable was the online interaction; what was of value for the participants in this process; what did this online interaction help them to do as they were learning their way to a degree? A preliminary point to observe, flowing directly from the definition of interaction adopted in this study, is that students are not all necessarily directly involved in the interaction whose value to them they are acknowledging. At least, they will have read messages in order to be able to comment on the value of the interaction to them, at most they will have been active posters, and participants in debate.

Two aspects that address the value of online learning in more general ways can be noted before moving to discuss how students valued online interaction for their own learning. At a level associated with the nature of the qualification rather than the individual learning, students noted that the interaction was essential in a degree that led to registration as a teacher. Rachel commented that teachers must share ideas and concepts, and interaction online helped people learn to do that (1, 207). However, Dianne expressed this most succinctly when, after commenting that you couldn't learn to be a primary teacher out of a book, she said "I would say that without the interaction on the website it would be incredibly difficult to come out at the end and think you could go into a classroom and teach" (1, 317). Asked to explain why she went on:

Um it's the interaction with the tutors. It's, but it's also I guess hearing what other people think and sometimes all that will do is make you think oh I'm not going to do that, you know. It's both, It's the pluses and the minuses of what other people think. Um and I think in certain subjects it's just the clarification. It's getting it away from the means to an end that study can sometimes be and putting it more into the context of, 'Yes but this is because when you're in the classroom you will be able to think blah blah blah,' (1, 321)

The elements we see in this quote – interaction with tutors; clarification of ideas; the pluses and minuses of others' ideas; and the need to have a focus on the practical endpoint of the degree – all surface repeatedly in the comments of other participants, as has the idea of sharing with others.

The second general aspect concerned comparisons between the papers with an online component that students take and the fact that in the third year of this degree students can undertake study in some papers that are typical extramural papers, i.e. they are primarily correspondence based and do not involve any online interaction.

Participant reaction to this latter type of paper was considerable. Joy talked about how:

J(oy): last year I did a special ed paper that was purely extramural.  
 R(earcher): And how did you find that in the midst of the DTEP?  
 J: It was a really interesting comparison. I didn't enjoy it. It's just like working in a vacuum again. I don't know how people do a degree that way, only that way. In a way it's less demanding. In a way it was less demanding because in the end I sussed out that I could work three assignments, two assignments and an exam. I didn't have to do anything else. But then I didn't really engage with that paper in the same way that I have with the others (1, 341-345)

Although only in her second year, Susan had already formed an opinion of distance education without online communication. She was asked how important the online link was, and replied:

if it was a paper in say my third year and I only, and I haven't got a good understanding of this but there are some classes that are not online papers. So you can do them but you have no contact. I think I just wouldn't do them. I'd choose not to do those papers (2, 147)

Students reported missing interaction in a way expressed most emphatically by

David: "I am doing one purely extramural paper and it sucks. It's like in a vacuum. Like shouting in a big room where there's no echo coming back. You know, you just have this feeling of being out of touch with it all" (2, 272).

Moving to discussion of value in a more individual sense, there were two pervasive themes in the interviews. One was the value of interaction for clarifying or consolidating understanding of course concepts. The other was the sense in which participants felt their intellectual horizons were broadened by the contributions of other students, as illustrated by this quote:

when you're sitting here on your own and you read an article for example and you have your own view of it from your own experience and from what you know and you can go on line and you can post your

comments about your article and you read other peoples and um you think ‘Oh my God I’ve never thought of that like that’ and it can be quite like a revelation at times and that’s excellent (Brenda, 2, 39)

The broadening of horizons happened in two ways, through direct challenge or through reflection. Brenda’s comments point to the way individuals can take the comments of others and through reflection and reconsideration come to new understandings without additional input. Ruth gave a similar response “I do learn things, you learn because people interpret information in different ways” and later “In just reading through everybody else’s response to the one question it’s just amazing how differently people can see the same thing. So you do learn, you know, I personally learn quite a bit from that” (1, 193). And even when she reported that there was “a minimum of what’s expected” in terms of online interaction, Joan still said that “I think you drag a few ideas from a few people to support your own ideas or to ... you know, sort of make you think on different lines” (1, 61).

Other students gained additional insight through having their ideas challenged and debated:

I don’t mind people challenging me now. Um and I would prefer that if I put something down that they didn’t agree with that they did challenge me because I’d hate to carry on thinking that, you know, I’m thinking on the right line when I’m not. And so I um, and especially in our group, we are comfortable enough with each other to do that (Pamela, 1, 489).

Rachel also talked about how, in her first year she had chosen at times not to participate in debates, and that this meant she had missed out on the opportunity to further her learning. In her second year she found that

because you’re bouncing your ideas off others you’re not just going solely on what you think and your own understanding. You put your understanding out there for others to respond to and you also have the

chance to respond to others and this gives you a more, I guess a word to describe it would be a holistic understanding of an issue discussed um for example behaviour management in classrooms something that is an ongoing issue that all of us as education students find very important and just bouncing ideas of each other and experiences off each other, you find you're not alone in your own experiences. You also realise well 'oh I didn't think of trying it that way' and you therefore extend your own learning because you have all these other ideas to collate into your own understanding and to try out (1, 195).

From these different responses it can be seen that having access to a range of perspectives allowed two courses of action for participants. First, it afforded the possibility of debate as a means of clarifying and extending issues in an intersubjective way. Second, it enabled personal reflection on what each individual had viewed and read.

As she followed on from her description of the benefit of debate, Rachel indicated why she thought it important to engage with others:

Because you may disagree or agree with something or you may have something to add and why keep that to yourself when you could be helping others by you know replying to that person's message with their opinion online and replying to that and adding to it or ... creating a debate about it or whatever. It's all part of learning and sharing with everybody else (1, 203).

Most participants did not specify this need for engagement with others, and there were several potential reasons for this. One of the major elements here is the "place" of debate – the group discussion site or the whole class discussion site. Participants report accessing wider perspectives from both sites, but being engaged in discussion that extended ideas primarily in the group site. In reference to discussion that challenged and extended ideas, Moana (2, 21) reported that "if its on a on a, a full class site, I personally don't think that there as much as that sort of thing going on because I don't think that everyone in the class site knows everyone as well as you

might do in a group site where you've been together for a while", but noted that "in certain groups that I'm in I would say yes we probably do challenge on occasion and, and extend". Pamela responded to a question asking where debate that extended ideas occurred by saying "Ah, generally in the group ... generally the work is very good and there's really not much to disagree with in the main forum. You do most of your disagreeing or bantering in the group" (2, 122).

The second element that impacts on engagement seems to be participant perception of responses. There is less incentive to question or discuss the content of messages when the wider perspective offered is seen as sharing an experience for reflection rather than putting forward ideas to debate. Jan talked about how a discussion about behavior management strategies had let her see a wider range of possibilities for coping with classroom situations (1, 176). She reported using affirming responses as she indicated: "And you can actually go in there and say, 'Yes, I've had that happen to me too. It's really interesting how you handled that because, you know, I wish I had have handled it like that,'" (1, 176).

A third element is shown in the way many participants indicated their questions were often answered by the online record of interaction that had already occurred. In a comment that parallels that group-class distinction made above, Nickie tells that she would "put your postings in to the class, so I would go in there and do my posting but I wouldn't often go in to discuss anything, I would run things off or check that site" (2, 14). Ngaire and Tracey described how interaction between others helped. Ngaire explained that responses to other questions helped: "a lot of people put up questions asking for clarifying things and that. That's if I've got time to go

through and see if I can find anyone that's got the same sort of question" (1, 97) while Tracey said of her fellow students that "if they are asking the right questions you don't need to ask them yourself so you get the answers you need, but if they're not asking the right questions then you don't" (2, 97).

Participants accepted this attribute of the interaction online. It seemed that it did mean that needless discussion was curtailed, while at the same time its use didn't mean that people weren't involved. In regard to the first point, Sally said "even though you don't put a lot of stuff onto the board all the time you can actually read other people's questions and things" and went on: "because it's pointless, you know, when someone asks a question it's pointless re-asking it. So it might be something that you've gone on there to ask and then the answer's already there waiting for you" (1, 162, 166). As an indicator of the second Joy was clear that not engaging online did not mean that people weren't involved (1, 245). She said:

we can't assume what the other person's situation is. In our group there are often comments, 'Oh we haven't heard from so and so,' or, which must be awful if you're the person reading it. But we don't know what's going on in the other person's life because we don't have that contact. I just come from the point of view that we can't assume what's going on. We don't know what's going on and they might be just as involved and haven't wanted to contribute (1, 249).

Alongside the value of accessing and debating wider perspectives, was the value that online interaction had in helping participants clarify, consolidate, and reinforce their understanding of course concepts, and sometimes course requirements. Where the former will broaden understanding of a topic, and help students develop links to other areas of their program, the latter helps them to feel confident in their understanding of the material and see it more clearly in terms of the concepts to

which it is immediately related. Margaret expressed this when she responded to a question about the value of online interaction by saying “I think that the subject becomes more personal and you grow in confidence in it because you are being active instead of reactive. And I just think it puts you in a better position confidence-wise and therefore in ability-wise” (1, 157). Ngaire talked about the fact that online interaction “just helps glue things together” (2, 42), but in the same response talked about how discussion also helped her feel that she was “on the right track”.

One of the things that was apparently to be valued in online interaction was that it ensured participants were “on the right track” in their approach to study. Being on the right track is part of the clarification and consolidation of understanding. It is also more than that. Being on the right track implies that students are taking the “correct” meaning from the material they are studying. Joy was asked about the phrase and replied “If someone said are we on the right track, we are constantly saying what on earth do they mean (laugh) what do they want” (2, 105). The right track was something that belonged to “them”. With no prior reference to any particular group, Jan said that the right track involved answering questions “in the way that they wanted them to be answered” (2, 85); Judy indicated that it required her to “say what they want to be heard” (2, 207). That “them” was the lecturers was clear from other comments. Nickie (2, 52) said it is “what your lecturer is expecting”; for Joan, “It’s definitely a hundred percent the lecturer’s track” (2, 181).

Participants were able to negotiate the track with two forms of guidance. Lecturers provided responses confirming that students stayed on track, seen in Brenda’s (2, 53) comment that tutors “give you that absolute confirmation that you

are on the right track”, while Heather noted that “I know from what I’ve been doing that I am not too far off track because of the responses from the lecturers and things like that” (2, 69). The other source of guidance online seemed to be fellow students.

Joy commented

you work on your own, post your work, and if there, if some else in the group is already responded immediately you can see where you have a similar response or not if you don’t then you say oh okay, I didn’t think of that, what’s going on here which of us are on the right track or or what exactly do they want you to think and if you’re all similar then you, then you can say oh well we’re obviously on the right track, so yeah that is a phrase that is used a lot (2, 109).

Bev also noted the value of looking at the work of other students, reporting that she would sometimes be “waiting until someone else puts up their answer and then checking their answer to see if you’re on the right track” (2, 35) while Jan talked about how she would think “well that person’s gone off on that way so that must be the right way to do it because I am thinking that way too” (2, 93). Two normalizing forces can be seen here. One is via student responses, the other via lecturer expectations.

Considered in this light, the online interaction allows a form of control – a form that some participants seemed to recognize and be either unconcerned about or welcoming of. The reason for this acceptance appears to be that they see a relationship between being on the right track and passing their papers – “if I get good marks I’ve obviously been on the right track” (Nickie, 2, 54) – although the relationship may be more complex. Bev explained how a focus on the right paths was determined as much by available time as by just wanting to pass “I suppose I sort of focus on the right paths, the, the paths that will give me a good mark rather than, and

probably do focus on that a bit more than exploring other ideas because of the time factor” (2, 47). Online interaction seems to have value for the way in which it enables students to find focus and, as students with the goal of acquiring a qualification, study efficiently when faced with time constraints.

Other students saw that the right track had different implications for them. Being on the right track might lead to passes, but it was something to be resisted in some ways. Joy talked about the personal philosophy of teaching she had just been required to write, saying “I feel that I’ve been brainwashed because we all thinking exactly the same thing and that concerns me we were all regurgitating the same phrases” (2, 183). Her language echoed that of Heidi (2, 57) who commented that she was “not here as the receptor and the regurgitater in this information, I want to learn”. Dianne talked about how her thoughts about being on the right track had changed. She was now in her third year (in common with both Heidi and Joy) and said that last year, her second in the program

I would have said I wanted the right answer, to be perceived as having the right answer but I think now I’m realising that its more important that that’s applicable to yourself and your own understanding, your own level of knowledge, and that you can add on to it um from you know whichever stage you are at in your learning (2, 11)

The final aspect of value in online interaction comes from the sharing of experiences that participants undertook. This has been noted to some extent in the earlier discussion of the exchange of perspectives. Participants also reported that online interaction involved other senses of sharing. Ruth reported that “it seems easier to do the work, but I suppose it’s because you feel it’s a shared workload” (1, 401). Megan indicated how she felt that sharing ideas online had two aspects. The first was

that people had to be willing to share their inexperience and lack of understanding of a topic with other group members for the group to move forward in understanding. The second was that people who were interested in topics would often want to share their thoughts and information with others (2, 24-26). Both scenarios were useful in learning about a topic.

Participants saw the value of online interaction in several ways, and even amongst those who thought there was little interaction, something seemed to be gained from the interaction that did occur. Online interaction allowed the exchange and consideration of wider perspectives – either through subsequent reflection or direct challenge. It enabled students to clarify and consolidate their understandings of course material, and it gave them the opportunity to ensure that they were “on the right track” in their study. Finally, participants reported a sense of sharing, important to them both as a professional attribute and, more simply, as providing information for each other. This last point leads us to consider the effects of involvement in the online interaction, which is the topic of the next section.

#### The effects of involvement in online interaction

Engaging in online interaction with other students had effects beyond the provision of ideas and thoughts for debate and clarification. Participants were involved with a fairly unchanging group of fellow students – the second year students had spent over a year together online, the third year students over two years. Throughout this time many had established an identity or personality for themselves online; friendships had often been developed; a sense of community seemed to have formed amongst the year group and the program students as a whole; the community

was seen as heterogeneous rather than homogeneous; and, participants reported that a history of online peer-peer support had developed. That participants are aware of these aspects of the effects of involvement in online interaction is shown next.

Going online means revealing yourself to some extent, and therefore becoming known to others. This is a process that takes time, but one that inevitably occurs. After a semester of working with her small group Jan said that “I think we’re still getting to know each other’s different personalities” (2, 97) indicating that this had happened not just within one subject, but through “numerous sort of interactions for different things” (2, 97). Joy’s comments signaled agreement with the idea of getting to know personalities. She said

people’s personalities really come to the fore and I think that online it’s how you communicate. Some people just have that gift of being able to assert themselves and they will actually say [through the?] it’s through the written word. Yeah. So in a sense their personalities are there in glorious technicolor just as they are in real life (1, 265).

Despite the range of interaction possibilities noted earlier, participants spoke of this developing knowledge of one-another as occurring through the written messages that appeared on the bulletin boards. Ruth said that she developed these personalities from the way people wrote messages. “You know, I often think god, how can that person be a teacher? Or I think oh that person’s got no sense of humour” (2, 199), adding that the writing made her form an opinion about the person and she would read between the lines to do so. As she inverted this to consider her own situation, she showed she was aware of the risks of interpretation, acknowledging, “what you type is not necessarily what someone else reads” (2, 199). David recognized the risks as well, but also indicated that he had become known over time

and that now the other students “know it’s just me, you know. And it’s like when I put on something a bit sort of um to pull a leg or something I know they will know it’s just me pulling their leg” (2, 57).

Rachel agreed that personalities came from the words on a screen but said they were more than words since they came from a person. She focused on the style of language use in saying:

the language used online is informal its very similar to the spoken language in that you’ve got the same sort of colloquialism thing going on there and um ... so it still evokes the same sort of feelings as it would if you heard it, had it spoken to you and that is why you create these pictures of these people in your mind (1, 271).

Getting to know personalities meant that you were able to differentiate between them. Joy indicated that she could distinguish dominant people and quiet ones (1, 273). Being able to distinguish also meant that judgments were made. Brenda showed this in her comment asking:

Isn’t it funny how you can actually get to know somebody online and you really don’t know them? I suppose you can’t see them or hear their tone or see their body language or but, but you do get to know them. And you get to know who you like and know who you don’t like (1, 248)

and Heather indicated how “I actually feel drawn to some of those people on the bulletin board, its almost as if they, they’re not just names, they become characters, and they’ve taken on personalities” (1, 62).

Participants reported the development of strong online friendships. Most of this development took place in the small groups to which students belonged. Margaret talked about how it was important to develop a personal connection with the people in your study group, but felt that she didn’t really know other people in the

class as a result of the online interaction (1, 141). The importance and centrality of the small groups was reiterated several times by other students. Ruth indicated that the friendships she had formed were within her online study group (1, 364), and Dianne supported Margaret's differentiation between small group and whole class, saying that she had got to know people in her group but not in the second year intake (1, 275). That it took time to develop these relationships is evidenced in participant comments about the changing of small group composition. Nickie (1, 33) and Ruth both spoke of the detrimental effect of group changes on relationships, and how this affected study. Ruth noted

they do change groups around which personally I think is quite a shame because you can develop quite a bond with your group and, you know, changing the group around it's, you know, a whole new group dynamic. You've got to put effort into working with those people that could be better spent on your study (2, 75)

Not everyone developed friendships within the program. This may have been because of the lack of personal connection. Liz said that she didn't look for friendships online and felt that, because of an age difference ("a lot of the people I study with are so much older" (1, 362)), a lot of the topics of informal online discussion did not interest her. Pamela's statement that "most of us are mothers with children so, you know, there's lots of common interest" (1, 472) tended to support Liz's interpretation.

Participants described the depth of these friendships differently. For some they were strong ties that had progressed beyond the exchange of online messages. For others they were highly contextual relationships that might not have a life beyond the life of the course. In the former case, Mary talked about having a set of friends

she had developed through online interaction, “the whole first semester was just emailing each other, and yeah now its kind of, yeah we do, we just ring each other up and talk about things” (1, 218), with David acknowledging a similar trajectory in the development of friendships “I’ve met most people online but I’ve actually talked to them on the phone as well” (1, 265).

Others participants expressed the tentative nature of these friendships. Heidi said she would “describe them as friends but ... but without never meeting them you don’t know if you would actually get on with them out of the context of Central” (1, 465). Megan felt that she only got impressions of people and that “there are a few there that I feel like I know personally quite well, although in saying that I don’t know anything about them apart from the study side of their life” (1, 247).

Developing individual friendships is one outcome of the online interaction. A second and more general outcome is the development of a sense of community, a sense of responsibility to each other. Many participants spoke of the “DTEP community” – a community that seems to be created by the conjunction of three elements. These elements are: the realization of a common goal; the acknowledgement that students are each undertaking, and need to be supported through the same arduous process of study and change; and the recognition that they have a common background. Clearly not all students share all three – Liz’s earlier statement of difference shows that she doesn’t. But Liz also gave an example of how the “community” operated for her.

the first week I was there I put online, ‘Someone in Taranaki has got to help me. I have got no idea what’s going on. Here’s my phone number. Can someone please ring me?’ I got inundated with phone calls from year three people who had been doing it for a couple of years. And I

went to a lady's house and she was really helpful and stuff and if I hadn't done that I probably would have dropped out (1, 52)

Ngairé described the community as a very intense community because “everyone really knows that we're all there for the same purpose” (2, 95). This sense of commonality was expressed quite often in the phrase “in the same boat”. Esther talked about wanting to help others on the course, with a motivation that was “largely driven by sympathy. They're in the same boat as me” (1, 301). For others like Joy, community was expressed through a sense of responsibility to others. Megan expressed this as follows, “you've got to remember that it's um not just about you. It's about, you know, we're all in the same boat” (1, 128), and later in the same interview expanded on this:

at the bottom line we all know, we've all got one goal and we all want to get there. And most, we're predominantly an older bunch of students and that's good that we have that um understanding that it's not just about us. We've got, you know, family circumstances. We've got lots of other situations to deal with as well as studying (1, 268).

Dianne also acknowledged the wider background that students shared as she spoke of the sense of community that she saw amongst the students in the program:

almost all of us are in the same situation with family, people with, you know, young children. All the stuff that goes on outside of this course is common to the majority of us. That adds to that sense we're all in the same boat. We all know what it's like to run a household and get an assignment in the post on time and all that sort of stuff. I don't know but um it is a supportive community. I know that if you went on tomorrow and said, ‘I'm just not coping,’ you'd probably get about fifty emails saying um ‘hang in there’, you know, ‘you'll be fine’, and ‘is there anything I can do?’ All that sort of thing. It's quite interesting (1, 301)

Recognition of a sense of community within the program should not suggest that all students were necessarily part of one large closely-knit group. When asked if

the students in the program made up one big family or lots of little groups, Ngaire described the situation thus:

Well, okay, you have actually like a hierarchy, okay, of different groups. Um you have your big community with everybody and um, which is actually has a site for community, has a community site where everybody can tell anybody else anything and help anybody. The older ones, like third years, help the younger ones. Then we have the next one down would be the year group. So you've got your first years, your second years, your third years. And they only intermingle with themselves. And then there's another breakdown of classes because no one takes the same classes. And inside those classes you've got twelve groups. And I mean it's real, like a family um. It would be like my family unit, the four of us, we're the extended family of grandparents and then going out to the, you know, township, city type thing. And it's yeah, but sort of ... yeah it would be a sort of culture on its own. (2, 99)

This small culture even had a matriarch. Margaret talked about people who had been outstanding on the site and said

There's one in particular, (text deleted) is her name, and she's actually, a comment had been passed that she's the mother of the site because she had such full, helpful comments earlier this year to support the year ones in understanding the site. And she always has, always seems to hit the nail on the head on her comments. And she does get a lot of general praise as well (1, 117).

The groups that were set up within the program provided a place for students to develop more intimate relationships. Moana said, "I don't think that everyone in the class site knows everyone as well as you might do in a group site where you've been together for a while" (2, 21). This group was a place where "we feel more confident with each other, um and I think that we have established our relationship patterns that we're not, we're not, we've established the relationship patterns in that we know we're not stepping on any ones toes, and that is all going to be received okay" (2, 23). Even within these small program-based groups students formed, as

Alison described it, “a pecking order” (1, 155). She went on “even online, you’d have your people who would come through as your natural leaders, or your bossy people, along with the ones who would just go along with it all and those that wouldn’t pull their weight and those that do and you know, those kinds of characteristics still come through online. They are really strong” (1, 159). Dianne’s comment revealed the same types of categorization “There are people that would put their opinion on everything all the time and there would be people who just do what is required and then there would people in the middle who it depends on how strongly they feel about something that they would agree or disagree” (1, 121).

Individual characteristics were seen through interaction on class sites as well, although not as strongly. David noted, “there are people on the board who have a higher profile than others” (1, 141), and that these high profile posters “have more status in terms of being a member of the online community so that maybe their posts are received with more ... eagerness or respect or whatever” (1, 141). Susan’s comment that “some names come up and I will never not read their messages” (1, 269) tends to confirm this. Heidi said it was just like any classroom “You know, you’ve got your jokers and you’ve got your, and there’s cliques. There’s very definite cliques online” (1, 258).

The development of smaller informal groups that differentiated the community generally, as well as the individual differentiation was well described by Rachel:

you still get the people who go off on their own tangent and almost talk down to the rest of you because they see themselves as higher up for some reason or another and then you get others who almost pull you down because they can be quite negative, and then you also get

the people who inspire others and motivate others and you still get your little cliques of people who through working with each other in previous years in DTEP group or even responding privately to somebody's message and therefore creating their own friendship over the net, not associated with the class discussion or group work you know you get those people who become like little cliques in themselves (1, 259)

Pamela confirmed that working with people in the formal small groups led to the development on informal groupings, saying "we've been in the same groups, or whatever, and we've managed to hook up somehow" (1, 294), while Megan pointed out that these informal groups didn't depend on geography "even though geographically we're all over the country it doesn't actually, that doesn't actually come into account online because I think it's more about personality and train of thought, academic ability, humour. Just where, you know, what sort of, what you've got, and your knowledge or interests. That all kind of helps form groups" (1, 164).

The sense of community that developed through online interaction and the commitment to that community, along with the differentiated groups-of-common-interest seemed to lead to the development of online peer-peer support. There was a strong affective element to this support. Earlier in this chapter the isolation of a full time distance student was noted. Joy showed how the interaction links between students in the course were important in overcoming this, first saying, "I couldn't do this course without this particular type of interaction that they've set up" and later giving the reason "I think I said something about sitting in my own four walls. This takes me slightly out of those four walls and I think for me it's a vital social link" (1, 445, 449).

Overcoming isolation wasn't the only area of support. Alison talked about how her class was awesome and how "some individuals went through a lot of really bad things, life changing stuff over the last couple of years, and everyone was there to help everyone" (1, 179). Community support when there was a loss of motivation during study was commented on

everyone goes through bad patches because we've been warned about it. It's a step and it does happen. And plus, but, you know, as I said, by the second year you can recognise the symptoms so you can go in and try and find support, which is where the community aspect comes into it (Ngaire, 2, 95)

Nickie noted how the online interaction can help in this situation, saying that she felt "this time round, as the semester has gone on that we were, that we were supporting each other in um as well as, as learning and I think, I think these papers have been a lot better because of it" (2, 34). Ruth also differentiated between interaction in support of learning and interaction that was affectively valued saying "it's more that socialising. It's not the academic support. It's more for me that well someone might have, you know, well who can I talk to?" (2, 175).

Heidi gave her perception of the level of support in saying that if you were having difficulty "there's just a trillion people out there who will answer your question" (1, 303), and Sally also implied that there was considerable likelihood of support saying that if someone "needs an answer to something I still answer it because I think well, like if you're sort of one of the first couple I'll answer but if there's half a dozen answers up there already I think oh well" (1, 342). At times, messages tended to clog the bulletin boards. Margaret comments that when "someone's off to hospital and they post up that they are out of action for a few days.

You can get twenty, thirty people saying wishing you all the best” (1, 105), and Heidi (2, 99), while acknowledging her use of the support system, thought that it needed to be kept separate from the study related material.

The use of private mail is one way of keeping supportive messages separate, and this was described often. David described the difference between bulletin board and private mail messages for support. He said: “I don’t believe in clogging the board with crap but if someone has got a problem or if someone asked a question quite often I will private mail them and say ‘look, this is what you do’, or ‘this works for me’, or ‘how are you?’” and later went on:

bulletin board is shouted across the programme, ah the classroom but it’s the private mail messages, the equivalent of someone seeing you a bit upset in the café one day and coming and putting your arm around your shoulder and saying, ‘You’re looking really down to it. Let’s talk it through.’

Judy acknowledged responding to others in this way after “picking up on how people feel” sometimes, in messages (2, 66), as did Megan who would “read between the lines” and respond privately and noted that this was a “side of online interaction that disappears” (1, 222).

#### Asynchronous interaction – a summary

This section has used the words of participants to describe how asynchronous interaction online has become an accepted part of their lives. It has set out the way participants grew into patterns of online use and the extent of that involvement. The value that online interaction brings to their study lives, and its impact on their wider lives are both facets of their distance study that were explored. The flow-on effects of that online interaction were noted - the growth of relationships and a peer-peer

support network that arose out of a sense of community that itself developed from a sense of common purpose, common background and common process.

### Summary

This section of the chapter has described participant experiences of interaction within their program. Participants engaged in interaction in a number of ways – online and face-to-face, synchronous and asynchronous. They considered that interaction was contingent on responsiveness and tended to consider it as a function of bulletin board use. A range of involvement was reported, with that involvement being dependent on a number of personal factors. Regardless of the level of involvement participants concluded that interaction was a component of the program that was of value to them for the way it helped them consider wider perspectives, clarify aspects of their papers and develop a sense of sharing as a professional attribute. Beyond this immediate value, the interaction created a sense of community, albeit a community as differentiated as any seen in the face-to-face world. This community afforded a need to provide support to its members as they worked to balance study and personal lives.

This section on interaction has largely avoided considering what underpins the interaction that occurs. With the exception of the sub-section on motivation there has been no real consideration of the possibility that students do more than go online to read and post in an unproblematic way. The section that follows attempts to unveil some of the factors and practices that mean that interaction is not a simple exercise in reading and posting. The preceding description of interaction through participants'

eyes is now complemented by a description of elements of control in the online environment.

### Control and Online Asynchronous Interaction

The review of literature in Chapter Two led to the definition of control in the context of distance education as the opportunity and ability to influence, direct and determine decisions related to the educational process. An earlier section considered the participants' perceptions of the personal skills and abilities that contributed to this sense of control, and drew attention to the environment in which students learnt. This section focuses specifically on online interaction, as an important element of the educational process for the participants of this study, and reviews the ways in which participants control and are controlled during that interaction.

The structure of this section is derived from the discussion of the earlier section 'A Brief Note on Control and Power', and reflects aspects of Baynton's (1992) conception of control. It is structured around the argument that control is partly related to the power that individuals have to give effect to their wishes (a sense of human agency reflected in the dimension of 'independence'), but also acknowledges that this sense of agency is always in relation to the powers of others (the capacity to take part in the learning process reflected in the dimension of 'power') and more structural constraints (which are related to resources available to students while undertaking the learning process, reflected in the dimension of 'support').

### How I Control Things At My End

After ten of the first set of interviews it became clear that many participants were making deliberate choices about what messages they chose to read and when or why they would choose to post. Subsequently the activities of posting and reading were addressed in more detail during the interview. Choosing to read is less problematic than choosing to post. Reading a message in WebCT leaves no permanent trace, posting leaves one's words exposed to the scrutiny of others. This section addresses the matter of participant agency in online interaction, looking at the areas of 'Choosing to read' and 'Choosing to post'.

#### Choosing to read

"Well, if I want to read it I open it and if I don't I just bypass it, so it's my choice" (Ngaire, 1, 364). In saying this Ngaire indicates that there were messages that she didn't bother to read, and she had this in common with other participants. Some however said they did read all the messages that were posted. When this was the case, there was normally a filtering process that took place. For example, after acknowledging that she opened and looked at every message, Joy (1, 137) said "I will select all of the messages and compile them and then you can just scroll through on that particular day". Her filtering process consisted of scrolling through the messages, printing off messages from her lecturer and group, and any that gave her "light bulb moments" and then "marking them all as read", a software procedure that effectively removed them from sight.

Choosing to read the lecturer's comments and those of the small group to which they belonged was a leading theme in participant responses. Lecturer's names

appeared on the site in capital letters, which made them easier to perceive in the collection of messages (Ngaire, 1, 390) and target for reading (and printing) first. The messages posted by one's group were also prioritized for reading. Esther reported, "I have to really limit what I read to be in sync with only my group or the lecturer" (1, 277). After noting that she would read and print off anything posted by the lecturer, Judy went on to say that she would read all her group work, "because they're my, yeah, sounding blocks and I like to think that I'm theirs as well" (1, 260).

Cutting across the importance of choosing to read lecturer and group messages was a dominant theme. Participants clearly reported choosing to read messages based on the name of the person who had posted. There were two aspects to this particular choice. The first, and less significant of the two is the choice made in terms of relationships with people. Joy said that she chose particular people to read on the grounds "I think just getting to know certain people that interact well, certain people that you interact with. There's a strong correlation between people that you form relationships with to what you read" (1, 277), and Ngaire (1, 408-410) looked for messages from people she had been on teaching experience with or whom she had met face-to-face.

The more dominant theme concerned association between the names of the posters on the main bulletin board and the type or content of the message. Margaret, for example, was talking about a small group of people in the course and said "after I see a person's name and before I even read their message I have already formed an expectation of what kind of comment it actually is, if it is something that is interesting or, 'Oh her again,' sort of thing" (1, 189). This sense of expectation was echoed in a

comment by Jan “You get the names of people that you know are going to be worth reading. Others you might sort of go past a bit” (2, 145). David (1, 141 – see the section “The effects of involvement”) confirmed the existence of a small group of people whose messages were worth reading, as did Heather who commented (2, 210) on the value of the messages from a group of regular contributors.

This sense of discrimination is developed over time and for particular reasons. Megan (1, 205) said that after three years she knew who was worth reading, and Brenda commented on the time aspect as follows:

When I started off DTEP I would read them all and I would be thinking, ‘Oh god this is a drag. There’s so much to read.’ And I don’t know which happened first but I think you find out who you actually want to read. And I’ve since spoken to the other two girls here and they go oh yes, well we only read from such and such. If so and so has got something to say we always read that, you know. And I go well that’s funny because I will always read that person too, you know. So they’ve done it too. You actually decided whose opinion it is that you really want to read (1, 186).

The impression from this is that it takes some time to discover “who you want to read”, but others indicated that it happened fairly rapidly. Joy (1, 153) spoke of times when the small groups changed “if you move into a paper where there are people that you haven’t generally interacted with or taken note of. You very quickly, very quickly learn who ... who you’re going to want to respond to”. Liz said that it took only a couple of weeks to find who you would like to read “in the first couple of weeks you can read a few messages and find the ones who sort of come across as being a bit more onto it” (1, 277).

The reason participants chose to read these messages appeared to be the way they contributed to learning. Brenda followed on from her previous statement about learning who to read, with the following statement of why she chose them:

It's people that not necessarily hold the same philosophy as you, though that always helps, but it is people that will challenge what you have got to say or what you think. You know, you may not even have said it. You may have been thinking it but they might have a slightly different viewpoint on something that really is quite, you feel is quite valid and worth exploring. And you just get to know who those people are (1, 190).

Esther's comment that she had discovered "a couple of people whose work is always surprisingly insightful and I quite like their view on the world and so I generally read their work if I can" (1, 409), supports this view of the value that some people's messages had in providing additional insight. Dianne related this to having done the reading for the course, noting, "you start to look for names that pop up that you have learnt will have actually done the readings. It won't be opinion. It will be um what they've sussed out and put into their own words and their thoughts that have come off that" (1, 141).

Just as there are people whom participants chose to read, there were comments about those whom they chose not to read, or read last. Nickie said that she ignored messages from some people because they posted messages that were off on the wrong tangent (1, 124); Joan would skim over messages and decide "oh no, I can't read that" because it would be badly constructed or mistake-ridden (1, 288). Sally talked about how a small group of which she was part had identified several students as highly active contributors to the bulletin board. She went on, "the other four don't read these people's messages. They'd like identify these people and they

would just blank them out”. When asked to clarify this she said “They’re just, yeah, that’s a personal thing that they’ve decided, ‘Look, I’m sick of reading what she’s got to say,’” (1, 182 - 186).

### Choosing to post

Choosing to post was constructed as being two different activities. The first of these was the initiation of a discussion – creating a thread – and the second was responding to messages that other students had posted. Students were able to initiate discussion in their group forum and in a full class forum entitled “Student initiated discussion”, but initiation was inevitably an activity that occurred less frequently than responding. In the PIP Main forum to which the researcher had access, there was an average of 4 responses to every initiated thread. In the Reading paper Main forum the ratio of responses to initiating messages was approximately 12 to 1.

A first reason for choosing to initiate a discussion was when a topic or reading sparked a real interest. “So I myself only would initiate something, like, that, that I thought was really relevant and really interesting” was the response given by Nickie (2, 40). A similar response came from Joy (1, 173), “And initiating conversation, um ... I don’t do that very often when I think about it. And it would once again be a burning issue”. As a second reason for opening a new thread we see Susan (1, 253) noting the need to seek information, saying that she would set up a new thread every now and again, but that it was usually questions, a purpose that Ruth also noted (2, 187).

Responding to messages reflects similar themes. In fact, the reasons just noted for initiating interaction online are also evident in the way participants talk about

responding to messages. “High interest”, reflected in comments like “if it carries a weighting that I think now this is important that I understand this” (Heidi, 1, 222), or “it just hits you generally, certain things that you do feel you need to respond to” (Jan, 1, 232), or “definitely if I feel strongly about something I will get in there and put my ten cents worth in” (Judy, 1, 231), was what drove some participants to choose to respond. The idea of helping others through responding to their questions was also evident. Ruth (2, 187) said “If it’s someone asking a question that I feel I can answer I will because I feel that, you know, I’m their classmate and it’s up to me, you know, if you can’t help you may as well not be there”. Esther (1, 277) showed how she gives effect to this form of response “someone else might ask for help with a booklet or clarification on a term and I might just respond to something someone else has said, a fellow student. I might say, oh I don’t know, they might ask for help on an art resource or something and I might say this is, I read this book. This might be good for you”.

Equally important as making decisions to post was, it seems, making decisions not to post. The common thread in this context was avoiding “clogging up the works” (Joy, 1, 173) with numbers of unnecessary messages “I’ll only post if, you know, I’ll only add into it, if I think I’ve got something to say or, you know, it’s something that I’ve seen or been involved in, because otherwise you end up with fifty thousand messages sort of all saying nothing” (Sally, 1, 282). This comment points to the way participants made judgments about the time when a discussion had been saturated with ideas. Jan talked about knowing when not to post, knowing when “it’s already been said or you just don’t need to add anything else to it” (2, 21).

This section has dealt with the ways participants used their ability to choose to post and read. Posting the initiating comment in a thread was not a frequent occurrence, but was undertaken out of interest in a topic or to request information. These reasons were also related to the purpose for responding. And just as they could choose to respond, participants could choose not to respond, something they indicated they did primarily to avoid overloading the bulletin board, and their fellow students with messages. In choosing to read, participants were clearly discriminatory. They made clear choices about reading the lecturer's comments, those of their group, and a small number of fellow students whose work, it seems, had the potential to contribute to their understanding of the topic they were studying. This latter group appeared to be a small stable group of students. The postings of some students were ignored by a few. The picture revealed here is of a group of students whose agency enables them to pursue paths of self-interest in discriminating ways, while also remaining committed to the small group of people with whom they work regularly.

### Working Online With Others

The ideal of an open forum for online discussion that prioritizes individual agency is implicit in the statement from Tracey that "I don't think you can dominate on DTEP because it's not that kind of forum. I mean if people choose not to read your message then you can't be dominating" (1, 288). Tracey's focus on choosing not to read is matched by a statement from Rachel about the freedom of choice to post. When asked why she had chosen to undertake study at a distance she said one reason was because of "being online and having the different forums that you can discuss your ideas and opinions in. I believe that there's more opportunity for everybody to

have their say than there is in an actual real classroom environment where there's always the same people dominating the lesson" (1, 91). Freedom to post and freedom not to read seem to provide a strong recipe for effective communicative interaction.

However, Rachel provided an insightful qualification for her statement.

what I meant by everyone has a chance to contribute is of course the people who would normally get squashed, who can't speak out verbally in a classroom situation, have the chance to, so there's that option and it is an option, and I did not, I didn't actually mean that everyone has a chance in that it's a democratic, you know everyone's equal (1, 279)

That people were not "equal" was implied in a comment Megan made, saying, "some people just come across much more articulately online and that in itself differentiates people" (1, 160), and is reflected in the previously quoted comment from David that "there are people on the board who have a higher profile than others" (1, 141).

Like Tracey's choosing not to read, Rachel's option to contribute is initially an affordance of the technology rather than a social reality. Participant descriptions of messages they chose to read has already shown one instance of participants, through exercise of their agency, taking these affordances and turning them into realities. This section goes further, taking the view that involvement in online interaction was subject to a range of social constraints and motivating factors that serve to control participants' engagement in online asynchronous interaction. Motivation to interact was discussed in the earlier section "Motivation to interact online" although at that stage the role of the lecturer was excluded. This section explores participant descriptions of the ways in which others involved in their study lives had a relatively direct constraining influence on their involvement in online interaction in their course of study.

### Getting responses from others

The essence of online interaction – its responsiveness – was summed up by Joy when she noted that even before a message is sent, its author might be thinking about how it will be received and whether it will be acknowledged.

If you type a message and send it there's also a sense of how will that be responded to. Will it be responded to at all by anyone? Will anyone actually respond? And if you, if I think you were to go through your study and no one ever responded to any of your messages I'd soon back off or wonder what was going on (1, 277)

The impact of responses, as potential rather than fact, was a consideration that affected willingness to post. Joan said "I've sat quite a number of times with a message typed, thinking shall I post it or shall I not? (and later) There's been a number of messages I've deleted before I've posted and thought no, I'm just not game enough to post that" (1, 166). A further example came from Pamela in her second interview. She spoke about a role play debate that had occurred, and a conversation that she had had with a member of her group "And this woman, I was talking to her and she said oh, I didn't even put my opinion in because, you know, um I was too worried they were going to shoot me down" (2, 46). While this was a personal response to a particular activity in the paper, there are also more general responses. Judy told the following story:

I know another group who is the exact opposite and the lady who doesn't respond is a very, quite a good friend of mine, and we contact over the phone and she doesn't respond because she's so threatened by them because of the comments and the feedback she gets personally from them about what she puts in. Oh, you've got no idea. Almost to the stage where it's being reported that they're so negative towards her (2, 176)

and Heather went on from the previous quotation to report on a woman whom she had “worked with last year, she’s actually pulled out, she said to me look she’s not even going to contribute this year, she’s going to do her own thing because of that” (1, 54).

The reaction concerning the posting of messages, seen here, implies a history, either actually or vicariously experienced. The implication is that messages, variously described as rude, nasty, or negative, have been sent in response to posts, and that they have striking effects on the recipient or reader. That such messages are sent was noted directly by Heather: “somebody would put something up and invariably you’ll get, I don’t know how many, but a few people just so negative, they want to just shoot you down and in a nasty way not even in a nice way” (1, 54), while Sally talked about people who “will knock you back pretty hard if you say the wrong thing” (1, 250). With regard to effects, aside from the reported effects on others, some participants reported their own experiences. Joan noted an experience from her first year: “And I posted one thing in my first year and was attacked for it. And I don’t think I posted anything for a long time after that. So now when I do post something that I think may be a little bit controversial I always defend myself before I post it, or apologise to anybody I may upset” (1, 166). In one of her papers from her current year Susan reported that

I posted a message and one of the girls in the group obviously didn’t agree with me. And it wasn’t an opinion. It was just how I had interpreted what had happened. And I got a, not a shitty, bad word, a terse response or reply and it upset me for days because I thought that’s not exactly what I meant. That isn’t how I meant what I’d said ... (and following a description of the resolution of this incident she goes on) ... And now I don’t know if she feels the same way about me

but now every time I see a message on the group from her I feel edgy” (1, 314-316).

These two reports indicate a fairly short-term reaction related to engaging in interaction, in contrast to that described earlier by Heather. There are longer-term effects.

Susan’s story hints at the extra care she might continue to take in composing her messages. The modification of approach to posting on a long-term basis as a reaction to previous interaction was reported. Heidi said “I’ve pulled my head in a little bit this year” (1, 206) and explained why in her second interview:

I don’t want to be seen as um bossy and pigheaded and it seems that some people um nobody in particular, but I don’t like to say everyone, cause that’s generalization, I was getting earmarked. Nobody ah, it seemed that the people that I spoke to had difficulty accepting the fact that that what I was expressing may not actually be my opinion. And I was being too pigeonholed ... (and later) ... I wouldn’t say that I’m a people pleaser, but I certainly um I certainly like to keep things calm and, and fit in. You know everyone wants to belong and that just wasn’t happening so and, and it didn’t matter if I did back off. Yeah well I don’t think so because you know people would, yeah no it just isn’t getting nice, it was getting too personal. (2, 134, 136)

Ruth also reported the need to be careful to avoid offending people and being rebuked:

you’ve got to be careful what you say. Yeah, it’s that fear of offending somebody by the written word. That’s a very real thing. And also not putting, yeah, you can’t be honest in what you say online. You have to think through what you say and I am pretty sure I speak for most of our group when we are quite vocal in our group but you do hold back on things because, you know, people have been told off for saying things, you know, online (2, 79)

These quotations report personal effects, the impact on individuals. Dianne also felt that there were occasions when the possibility of being misunderstood and subsequently reproved was implicitly acknowledged more widely “Sometimes you

know that you are all just towing the party line because that is the easiest thing to do in certain subjects and so you're not really sure what people genuinely think about something" (1, 104).

The main effects of others' messages thus seem to be twofold. Participants can stop posting for short (or possibly extended) periods of time while they recover from the surprise and possibly shock of receiving what they construe as negative responses. They also modify the way they post, taking time and care to construct messages that insure against reproach by other students.

An aspect of this larger question adds a layer of complexity to this issue of the effects of messages. This is the matter of explanation – participants seemed to attempt to make sense of the fact that they would receive “negative” responses to their messages, by suggesting that they had been misunderstood, or by linking reactions to the stress of placing study within a personal life. Pamela recalled that people had taken her the wrong way a few times and on the most recent occasion “I got really brassed off with this person um but mainly because they took me the wrong way and thought I was being blasé when I wasn't actually meaning to be” (1, 501).

Sally noted the way people are misinterpreted

quite often too, people are misinterpreted. Like if they are not really good at putting up what they are saying they can put up a message meaning something and it can be read to mean something different. Yeah, I mean they'll have people jumping on them for saying something they didn't actually intend (2, 118)

but also added that misunderstanding wasn't as prevalent in the third year as it had been in the past and that people were now quite specific how they word their messages (2, 120).

Misunderstandings were often linked to the way in which people constructed messages. Jan mentioned how “you’ve got to be careful how you word it because people don’t know you. So you don’t want to sound, you know, smart or whatever, so you just usually put your question in just quite straightforward answers without putting any interjections or anything like that in there” (1, 150). The care required to avoid misunderstandings based on the words of the message was illustrated by David’s comment that “you get the odd misunderstanding. So I tend to type in Word, always have Word open, type it, check it for major errors, groom it and then post it. Now I will do that for a blimming two line posting usually” (1, 133). He later gave an example of his grooming process “if I’m trying to sort of say something in a way that I don’t want to be misinterpreted as telling someone or pushing my viewpoint I’ll go through and I’ll change the ‘I have’ to ‘I’ve’” (1, 192).

While we see here that misunderstanding can be constructed as a function of reading and interpreting the original (unclear) message, several participants constructed it as a function of stress. “There seems to have been stress points through the semester where what you say can be taken the wrong way. I haven’t experienced it but you can see it happening” (Joy, 1, 229) indicated that some times are more stressful than others and this found support in the words of Megan (2, 48), who pointed out that “I know that things can get a little bit heated, particularly around assignment time and when people are tired”. David summed up the links between the two aspect with the comments that “occasionally you do get the odd sort of ... posting which you feel is said with, typed with, a bit of venom or a bit of, ‘gosh, I’m

really tired and you're getting it today sort of" and a short while later added that "I think most of it tends to be from misunderstandings" (1, 133).

The fact of responses to messages being a controlling influence sees its inverse in the fact of "not responding" to messages. Not responding – as a means of avoiding clogging up the bulletin board in recognition of the fact that a discussion had become saturated with ideas – was discussed in the previous section with positive connotations and in a class rather than individual context. Only once was not responding mentioned as a chosen strategy of response to others. Alison spoke about a student who, she felt, seemed to get away with not working in a group but who would post messages in the main class forum.

A(lison): He'd put things in the forum and you'd just think oh god, he did it again. They just want to hear their own voice sometimes.

R(earcher): When that happened how did everyone respond?

A: They wouldn't.

R: So there was just a message that sort of fell into a hole.

A: Yeah (1, 299-307)

It was time spent waiting for responses, rather than the absolute of no response that was remarked on more frequently. Nickie's (1, 89) comment that "quite often you just sort of sit there and you might put something on the net, you know, and nobody will come back to you the next day and then you think oh well I won't do this and you've gone through all that work for nothing" was noted previously. Joy noted that waiting "drove her nuts" and was asked "What's too long?" She replied "What's too long? More than a day. Yeah. If you've got something you really want to talk about or is urgent or you need to finish a piece of work and you need that response". She went on to describe the feeling of waiting as being "like having a conversation and the person ignoring you and, you know, that's how it feels" (1, 301-309). To

avoid this uncertainty and delay, participants indicated how they moved away from the bulletin board to other types of interaction. Joy turned to private mail (1, 301), Dianne mentioned how she would use the chatroom (1, 209) and Sally talked about the value of the phone as a means to get instant replies (1, 521).

The effect of responses, or non-responses to bulletin board messages can be quite marked. It can drive people out of the realm of bulletin board interaction, into both silence and potential isolation, or into interaction through other means.

However, when discussing the care with which they would post in order to avoid misunderstanding, several participants mentioned the differentiation between posting in a group forum and the main class forum. "I'm a lot more cautious about what I put into a main site ... (and then) ... but in my group site ... I might put in different things and go down different tacks" (Moana, 2, 29). This reticence to engage in the class site was echoed by others. Joy noted, "even now I will take care when I am posting, usually, unless I'm in my group. If I'm posting on the main forum I'm very careful about what I say" (1, 221). Joan said "I shared something in our group that I said I wasn't comfortable having it posted into the main site" (2, 109)

This differentiation draws attention to the ways in which groups tended to provide a more supportive environment for students (see the section on "The effects of involvement"), but groups themselves also developed practices that regulated the interactions of their members.

#### How groups work

The development of accepted patterns of relationships within groups, seen in Moana's comment that "we've established the relationship patterns in that we know

we're not stepping on any ones toes" (2, 23) shows that group members shape or accommodate behavior to accept the differences of group members. Participants did not report on this directly when asked about informal practices or formal agreements that shaped group interactions. Recognition of the development of relationships between members and the ease that lent to online interaction came about when participants discussed the fact that small discussion groups were changed. As a by-product of this discussion, some participants commented on the impact of such change on their study. Nickie reported being comfortable with her current group and went on "they changed the groups on you which really threw me then because I just sort of got it all working and um you don't have the rapport with the new people" (1, 33), a comment that reiterates the point made in Ruth's earlier statement about group changes (in the section "The effects of involvement in online interaction").

Groups do not always manage to make these accommodations, as evidenced in Heather's report that she had "only had two groups that have really worked well out of the whole three years" (1, 180). Bev also talked about experiencing a group that "never clicked" (2, 52), and Judy reported her experience as "we've got quite a good group this year. Last year we didn't and that was quite frustrating because you didn't really know who was who and you didn't know um, yeah, how anyone else felt and you're sort of having to struggle quite a bit" (1, 235). One reason given for groups "not working" was that people didn't always contribute to discussion (Sally, 2, 29; Nickie, 1, 149). Conversely, Bev thought that her group that hadn't clicked, had got better this year because people were prepared to contribute. The one person she

felt didn't contribute last year was "going the extra mile" and a new member "contributes a lot" (2, 54).

The use of rosters for distributing workloads within the groups, and as a reminder of the requirement for interaction, appeared to be the main way in which formal attempts were made to control interaction and ensure participation. Jan said that "In most groups there are I suppose you could say rules in if there are things to be posted in particular weeks we sort of have rosters" (2, 101), but added that the roster had "gone out the window a bit" and that now group members just volunteered and took turns to collate member responses and post tasks to the class forum. Jan was not the only one to note that rosters appeared to be only partially successful. Joan said that her group had a roster and that "It works sometimes. It depends" (2, 310). Even after reporting that her group had a roster and that it was really good, Pamela said that there were times when it does change, especially during busy times (1, 236).

The impression arising from the ways in which participants talked of their groups is that attempts to formally control or direct group interaction were never totally successful. Groups relied more heavily on the informal and unexpressed relationships that existed as ways of ensuring group learning tasks were undertaken and reported.

#### Lecturer roles

Lecturers imposed the requirement for each group to post responses to activities, thus having a very direct influence on the extent of interaction online. This requirement was one reason that participants sometimes had to initiate discussion in their groups. They spoke about "being first" to put up a message about the required

task, as in “I initiate things in my group um ... possibly just because we’re working at different times during the week and you might get there first” (Joy, 1, 177). The need to be seen online, reflecting the requirement to participate was put clearly by Heidi (1, 222):

I respond at all because I have to. And you’ve got to be noticed by your lecturers. Bottom line: you’ve got to be seen to interacting. So even a response is, you know, that’s just what I was thinking is still, you know, some response even if it wasn’t what you were thinking. It’s still noted that you are reading and taking part in that discussion

Participants did not always want to be noticed. Sometimes discussions were meant to be private – for the group only – although students in the program were advised that lecturers had access to their formal small group forums. Ruth said that “often what you want to say you want to say to everyone in your group and get some feedback on things, but not necessarily the lecturer” (1, 125). Asked if the idea of a lecturer reading her comment really bothered her, she replied first that it depended on the lecturer, indicating that some lecturers comment on these informal group discussions adding “It depends on what type of feedback you might get once and then you might think twice about maybe doing it if you get, you know, sort of like a tap over the wrist or a negative reply or something” (1, 133). Megan (1, 255) talked about how she could be aware of the lecturer hovering in the background, and not saying some things publicly as a result, while Liz also felt the gaze of the lecturer was sometimes oppressive and showed this in saying that some “tutors are there all the time and you sort of feel like they are watching you too much and you don’t get to have that freedom of conversation and stuff” (1, 56).

While the option of private mail took some interaction beyond the gaze of the lecturers, participants still had to cope with the fact that their online interaction had to be seen by lecturers, and was thus open to scrutiny. This was a lesson that was learnt. Heather was asked about expressing her view on a topic when it ran counter to a lecturer's, and responded "probably in the beginning I did. Yeah. But like I said, when you learn that your comments are shot down and things like that then you just tend to go with the flow" (2, 85). Joy noted that

your only reward is as such is a grade and you need a good grade or you need a, you need a pass to succeed why would you want to do anything other than what they want you to do, you know, yeah. There doesn't seem to be any room. You can have a differing opinion but you're probably not going to present it if you suspect that that's not what they want (2, 187)

Not everyone went with the flow all the time. Bev mentioned how in one of her papers "there was specific questions and you knew what the answer they want to, wanted to be said and occasionally a person would disagree with that answer and I sort of looked at that as though 'Do you want to pass?' cause it was obviously not the answer they wanted" (2, 41).

Acquiescing to the view of the lecturer was a dominant theme in responses. Initially, a student worked out how to respond to the lecturer "I think everyone picks up on the lecturer at the beginning and responds to them or perhaps begins to work them out over a couple of months and then responds accordingly" (Judy, 2, 91). Joy said:

In terms of having a sense of giving lecturers what they want. I suspect that we do that. I know that I do that. You take a long time to think to work out what does that tutor want? What do they want me to say? And you know that if you say it you will succeed. There's an element of that and there's also um ... at the same time it's possible to express

yourself. I have managed to do that but there is a strong sense of what exactly do they want me to say? I'll find that out and then I'll ... that's what I'll give them. (1, 73)

Having done this, students were still cautious during interaction. Dianne talked about how knowing that a lecturer had a strong view about a topic “makes you circumspect about your input personally into that” (1, 189) and Liz talked about how with some lecturers “you can tell (they) have got real strong opinions about something and if you don't agree with it you sort of feel reluctant to say, you know, your opinion because they are so forceful in theirs” (1, 60).

Not all lecturers demanded such acquiescence however. David spoke of one lecturer as follows: “There's a strong feeling that when you tell (name deleted), when you put something up that (name deleted) is not going to knock it” (2, 81). A further comment about a lecturer recorded similar feelings.

J(udy): then (name deleted) would come in and say, ‘Well actually, Judy, you're not quite right there. That should be done this, this, and this.’ And there was always a response and we knew that was going to happen. Yeah, so

R(esearcher): So the lecturer's response was very important obviously as you come back to that.

J: Well like I say, I think because, and also the way (name deleted) responded. It was like um he wasn't patronising. He wasn't putting himself head and shoulders above us. He'd use some of his jargon and the way he would answer, he'd just go, ‘Judy, yep,’ and it would be spelt yup. You know, it wasn't always politically correct because this is (subject deleted) and it's supposed to read perfectly, you know, word perfect sort of thing. You sort of knew that he was, yeah, you could relate to (name deleted) I think. And I, yeah, which I think is neat because sometimes I mean I've had a couple where you sort of felt oh, okay, you're there and I'm just a student.

Students also recognized the way that lecturer input could lead to extensive engaging interaction. Joy (1, 333) said, “I think that we look to them to extend our discussions and ... maybe open up new avenues if we haven't considered them” and David, said,

“the quality of the interaction is spurred on by the lecturer”(2, 81). Joy (1, 209) noted this also:

there seem to be some tutors that ... set a cracking pace in terms of what they expect from you. They're online a lot. They give you extra tasks over and above what is expected in the study guide. And they provide opportunities for interaction and discussion. If it's not happening they make it happen.

Apart from creating these opportunities, lecturers also responded to student messages in ways valued by students. Jan (2, 125) talked about “Some of the lecturers like (name deleted). He gives you some very sort of really good responses and positive responses. That's quite reassuring. That's quite good”. Mary noted that the lecturer responded to students in two ways “you need the lecturer to say well yes, no, you're on the right track there, you know their wisdom on the subject I guess, you're on the right track there, you're zooming along, that's right or no I think your group's off base have you thought about this” (1, 250). Heather also noted the value lecturers provide for students saying “we have some excellent lecturers who come online nearly everyday and provide the support and yeah the feedback and everything we need and I feel that those papers mean so much more” (1, 192), and going on “they make us think critically, they like put questions up that make us like think of the deeper, yeah gain a deeper understanding and things like that” (1, 198).

Lecturers provided opportunity for interaction through their involvement and their reaction to student messages. Participants reported some lecturers as providing wonderful guidance. But in some cases lecturer involvement clearly served to constrain both the extent of student interaction in the bulletin board and the nature of that interaction. Some lecturer interaction drove students to post in ways that

reflected what they felt was wanted by the lecturer rather than what the student believed – the interaction served a normalizing function rather than an educative one.

Three particular aspects of control in online interaction were noted in this section, the impact of responses to one's messages, the effect of groups and the influence of the lecturer. Participants reported that messages received from other students had the potential to diminish or even stifle their motivation to engage in online interaction through the bulletin board. The small discussion groups were generally seen as more supportive, building patterns of interaction based on personal relationships that had developed across time, rather than through more formal means such as rosters. Finally the role of lecturers was described as both controlling and facilitative within the online discussion forums. From this consideration of factors that are directly related to interaction online we now move to consider broader, more indirect influences on interaction.

#### Wider Constraints On Interaction

This final section reports on additional factors that had an impact on participant interaction online. These factors take in those elements of participants' personal and study lives that were beyond the immediate interplay of individuals. The section highlights more structural constraints revealing how factors that are not directly part of online interaction, factors that are part of the wider world in which students engaged in study and personal life, are reported as having an impact on the interaction that occurs online. Three aspects are considered here. There is a small complex of factors that can be grouped together because they are all related to the way demands of study and living tasks are balanced across the time available to

complete them. Second there is recognition of the differences between the papers (subjects). Finally the necessity for technology to mediate the interaction within the program has implications that affect the interaction that occurs.

### Time

More than anything else, participants worried about time – no-one ever had enough.

The biggest thing that I that disappoints me a bit is that I, no matter how hard you try unless you're going to be working twenty four hours a day you just cannot give everything what it deserves, which I feel is quite sad. Because otherwise you'd be a, you can be a cot case. If you had no family and things like that but no, I can't give it everything because there's not enough hours in the day, which is a shame (Jan, 1, 80).

This comment from Jan relates to the course as a whole, not interaction alone, but is indicative of the general sense, shared by participants, that there was always something more that could be done in the course. This feeling was often expressed in relation to interaction within the course.

There were different ways in which time was discussed in relation to its effect on interaction. There were a number of general comments indicating, in an undefined way, that time constraints worked to limit participation. These ranged from Nickie's statement that when it came to student initiated discussion "I just sort of don't have the time" (2, 14), through Megan's comment that "If I've got time I'll get into discussions more, I'll look into things more. If I haven't well that's just the way it is" (1, 92) to Heather's "I'll read through the notes and I'll say oh yeah no, and I'll want to argue the point and I'll think oh no goodness I don't have the time to argue the point" (1, 89). These general comments were refined by a few of the participants

who commented specifically on the demands of the workload, and specifically the requirements of assignments, indicating that balancing act that students had to undertake within the program.

S(ally): At the beginning of the year everyone is really keen and fired up and, you know, maybe got a bit more time or something. And then as time goes by you'll see less and less answers to a question. Yeah.

R(earcher): Does that mean the discussion ...

S: Yeah well I think everyone just gets so much busier that they just haven't got time to worry about other people's questions or, you know, they're more concerned about getting their own tasks done and getting their assignments done and getting ready for posting and .... Yeah, that's your focus (1, 354-359).

Assignment writing was a particular aspect of the workload that several mentioned.

Mary said, "I mean basically what sort of stops me from going online is when I have assignments due it stops me participating one hundred per cent" (1, 186). Liz noted that assignment work kept her from the non-compulsory aspects of discussion

if you've got the pressure of an assignment or two assignments that are worth thirty percent and you're worried about them you sort of put more focus into them than you do online class discussions. Like you'll do your class work and you'll put it in but you won't participate in the discussions as much (1, 248)

Time was not an issue for all students. Although Susan (1, 233) felt the pressure of time, she saw that some students appeared not to:

sometimes when you look at things you want to reply to something that somebody's done and at times I might not have enough time and I think oh no, I won't reply to them. Some people are really responsive. There are some names that come up all the time and are really helpful and I admire them because they give a lot of their time

Some participants noted that time was played off against interest in the topic. Moana noted that, even if bogged down she would involve herself in discussion if she enjoyed the topic (1, 256), as did Ngaire (1, 430), but she qualified this with the

comment that “if you’re very stressed yourself you’re not going to worry about other people’s questions”.

These comments show how demands internal to the study program interacted with available time to impact on discussion, but there was also explicit recognition of the pressure to be involved with family had an impact.

do I really need to do all this, read all these messages, or can I skim over them and spend some time with my children. It’s yeah ... when I’ve ignored them for the last four hours while I’ve been doing what I have to do. Yeah. That’s what it comes down to (Bev, 1, 399)

Bev talked about creating the balance between family and study. Alison also saw the need for this balance but implied that the requirements of family life pulled her away from the enjoyment of the online discussion. She talked about days she missed going online “I might have missed a day but I’d sort of like, for me I’d go into withdrawals anyway. So that would be because there was something else happening on that day. Something at the kid’s school and I have an appointment and something like that” (1, 399). Alison had a preference to go online that was sometimes over-ruled by her commitment to family.

In contrast, some participants had a commitment to study that saw family working around study requirements. Mary (1, 190) talked about her extensive involvement with her children’s school and the family business and said “I mean it’s probably your marriage that kind of goes on the back burner and you just say well hang on I’m a bit busy at the moment and we’ll get together in a week or two. We’ll have dinner or something”. For Heather it was a commitment acknowledged and shared by the family:

I've decided this is what I'm going to do in my life and that's it, unfortunately it comes first, unfortunately for my family yeah and my family have really adjusted well to it and they know you know, if I'm going to go and sit in my room and yeah work online and all that, that they don't bother me (1, 140)

The issue of time had an impact on participants either through decisions about which aspect of their study to focus on, or through decisions about time studying or time with family. When there was “not enough time” online interaction that was not required was, in most cases, sacrificed to the demands of required tasks or family interaction.

#### Subject matter differences

Participant discussion of the impact of subject matter could be seen to draw on two distinct threads. In ways that weren't mutually exclusive, some participants used distinctions between the papers in the course to describe differences in interaction, and some indicated that the lecturer played the dominant role in determining the nature and extent of interaction, regardless of the subject matter.

As has been noted earlier, the program of study for participants consisted of four distinct strands: education foundations, professional inquiry and practice, curriculum study, and studies in subjects. In discussing interaction in relation to subject matter participants appeared to make this fourfold distinction into a twofold one, and focus that distinction on the nature of interaction, not its extent. The PIP papers and the curriculum papers had a direct concern for student work in the classroom. Discussion in PIP, described by Sally as a “really discussy paper” (1, 419) was “supposed to be swapping ideas, swapping websites, swapping experience. And so yeah, that's all about and that's all to do with us going out to school and

working with other staff and teachers and interacting with children. So yeah, that one is hugely interactive” (Jan, 1, 172). Curriculum papers were also, as would be expected, focused on the practice of teaching with “the sharing of ideas and, you know, different ways of handling something at schools, wanting us to know, you know, what did you see when you were at school and things like that. And so that’s quite interactive” (Jan, 1, 172). Where these papers were described as sharing practical ideas and experiences, the other two categories of paper described as the “airy fairy waffly more general papers” (Judy, 2, 211) were those where “they’re not dealing with facts. They’re dealing more with theory and ideas as to why this might be happening and everyone’s got a different opinion” (Ruth, 2, 63). In these papers, “you could probably have more leeway in bringing in, you know, conflicting opinions and discussing those, whereas when it’s a more, you know, running records has to be done this, this and this, then it is just knowing the information” (Judy, 2, 211).

The subject matter was not a major determinant of the extent of interaction. Pamela was asked whether any subject lent itself to discussion more than others and replied “I don’t think any one subject lends itself any more than the others”, but hedged with the addition “Yeah ... yeah, yeah, I’m not quite sure” (1, 163). But Ruth said:

some papers are more inclined to engage you in conversation, probably just by the topic. Some are certainly more stimulating than others but I think probably the biggest determiner of how much discussion goes online is probably the tutor, yeah, rather than the course material. If you’ve got a tutor that’s active I think the participants are more active (1, 314)

and confirmed this in her second interview “Well, um it, a lot of it is to do with the tutor. The papers that have far more discussion have, the tutor is more active. It’s as

simple as that” (2, 151). The centrality of the lecturer as the key to the extent of interaction was also supported by David’s comment, “I honestly feel that the lecturer is the key ingredient rather than the subject per se” (2, 81).

Thus it appears that the influence of subject matter is related to the nature of interaction that occurs rather than the extent. The latter is determined by the role the lecturer plays in the discussion, with an active lecturer seeming to have the potential to engage students in ongoing interaction.

#### Technology issues

When the second interview with Ngaire was almost over, she responded to a question about the weather with the remark that “It is absolutely hosing down. That is why I haven’t been online all day because I can’t get on when it is raining” (2, 164). The requirement to use the Internet in the program created some difficulty for participants, but several also reported the ways in which it added value to their learning experience. Early experiences are reported in a previous section (Going online initially); the impact on interaction of the use of technology in an ongoing way is reported here.

A major difficulty with the technology used in the program related to accessing the site and staying connected. Jan reported, “My biggest problem with actually being a student on the Internet is the problem that I have with actually getting into the site a lot of the time. Sometimes I sit there for an hour and a half, two hours before I can get connected” (1, 72), and Ngaire’s experience has already been noted. Nickie (1, 185) told how “one thing with the internet is that is quite often I’ll write a

message off line and then send it because you are inevitably get cut off when you try to send it and lose the message”.

The value of asynchronous communication is that students can enter a discussion at any time. However, the program in which these students are engaged is clearly more appropriately described as paced asynchronous. They must participate in relatively brief but ongoing discussions from which an output is required, and must do this in each of the (normally five) papers in which they are enrolled. Inability to access the web sites can be seen as one factor in delaying responsiveness, an issue that participants describe in a previous section as having an impact on interaction.

An additional technical factor that impacts on responsiveness in interaction is the speed at which students can access files and messages on the site once connected. Susan said that the site was frustratingly slow (1, 160), a comment that Bev endorsed (1, 94) and Heather reported, “we were spending hours just trying to get into our messages and things like that” (1, 152). She went on to acknowledge “even with it being a barrier you could still carry on with whatever because you had the study notes” and that the only thing that suffered was “getting your postings online”.

The textual nature of communication was a barrier that some participants noted, because of the time involved in creating and crafting messages and in reading them. Megan said “online they want discussions going which would happen on-campus but those discussions take time because it’s all typing and it’s copying and pasting and it’s posting documents to a site” (1, 76), a point reiterated by Heather who talked about the extra time involved in typing, saying that “you’ve got to write so much to say what you want to say” (1, 86). The permanence of the messages on

the bulletin board was also a drawback noted by some, especially when returning to view messages after even a short absence. Susan recounted how her computer had broken down and then “I went and finally got it fixed yesterday and I went online, went last night to clear all the sites, and it just took hours and hours because you miss a day and there’s lots (of messages). You miss three or four days and it’s just so much to catch up on” (1, 160).

Two aspects of the direct value of asynchronous interaction through the bulletin board were commented on. David noted its value given the varied commitments people have, and compared it with synchronous chat:

I found that people tend to like the bulletin boards. One of the reasons for that is that a lot of people have commitments during the day, dropping children off, picking them up, all of these sorts of things ... (and later) ... But what that means is that it reduces the chances of the members of a group being free all at the same time, which cuts, it really does cut down the worth of a chat if you have one of your participants missing. You can’t say delegate tasks or share a viewpoint with someone who is not there. But the bulletin board gets around that, you know, the very nature of a bulletin board.

The visibility of messages in terms of topic and author was the second point mentioned. This was best described by Rachel who talked about being able to select certain messages and “to compile those and ignore the others is also a form of structuring your own learning, it’s filtering out the rubbish” (1, 283).

Participant reports indicate that the technology involved in their experience of asynchronous online interaction has some impact on the interaction that occurs in their program. Participants noted the difficulties of accessing and staying connected to the site, of reading and posting messages in a way that does not involve frustrating delays, and of the drawback of a text-based system of communication for

their discussion. However, the value of the bulletin board system in relation to participants' lives beyond study was also clear, as was the use of the tools and structure within the system as a means to contain and structure one's workload.

This section has considered three broad factors that had an impact on participant interaction online. The first of these was a small complex of elements related to the use of time. The study workload, and assignment demands in particular, along with the demands of family life seemed to draw participants away from online interaction, above all from interaction that was not a requirement. Subject matter differences, the second factor, showed up as a possible cause of differences in the nature of interaction, but it was the role of the lecturer rather than the subject matter itself that was seen by participants as the factor underpinning differences in the extent of interaction. Technology seemed to have a role to play as a factor that moderated the extent of interaction. Technical problems, the print based nature of the discussion, and the affordances of the software all seem likely to have an impact or structuring effect on the interaction that students engage in online.

### Summary

This section on control and online asynchronous interaction has considered the participants' descriptions of their engagement in interaction in three broad areas. The first of these considered the extent to which the agency of participants enabled them to undertake certain actions that gave them control of aspects of the interaction in which they were engaged. Students spoke about the choices they made in deciding when to initiate discussion and respond to others, and about decisions concerning whose messages they would read and when. They reported making clear choices,

preferring to read some students rather than others and to write much more carefully in some forums than others. However, the impact of other students, their groups and their lecturers seems to play an important role in determining how participants react to and participate in online interaction. These three elements showed that students engage in interaction in an environment where their power of agency is always in relation to the powers of others. Finally, consideration of a several broader issues highlighted by participants showed how their wider world, the context in which they engaged in interaction, created a further set of influences that also impacted on the nature and extent of that interaction.

### Chapter Summary

This chapter set out the findings of the study. Considered first were the site of the study and the participants involved in it. A brief examination of the nature of the course of study was followed by more in-depth consideration of the background of participants, and their lives as learners. Two further sections were then developed separately based on participant reports of their involvement in their course of study and the interaction that occurred during that study. The first examined the nature and extent of that interaction, first looking widely at all forms of interaction and then focusing on the particular motivations to engage, the effects and the perceived value of asynchronous interaction online. The second reviewed the area of control at three levels focusing first on the personal, then the interpersonal and finally considering wider social and technological forces that impacted on and controlled the nature and extent of interaction. The next chapter reviews and discusses the findings presented

here, acknowledges the limitations of the study and presents recommendations for further research.

## Chapter Five

### DISCUSSION

#### Introduction to the Chapter

The substantive part of this chapter discusses the results reported in the previous section and the process by which those results were obtained. Because of its prior nature, the data gathering and analysis process is discussed initially. Subsequently the work reported in the previous chapter is considered. This consideration generates a set of assertions about the nature of the relationship between interaction and control in online asynchronous interaction in a distance education context. The limitations of the research are reviewed next and the chapter concludes with a description of possible avenues for further research and a final summary.

#### The Research Process – Making Fit Theory

The process of generating or elaborating theory that was undertaken in this research was based in a grounded theory approach. While the earlier work in the area of research serves as part of the necessary conceptual grounding, any elaborated understanding has also to be grounded empirically. Discussion in Chapter Three highlighted elements of importance in grounding the study empirically. In this regard Dey (1999, pp. 245-246) mentions in broad terms the need to make explicit the assumptions that underpin data gathering and categorization. Specifically, Chapter

Three noted the areas of: theoretical sampling, use of multiple methods and data sources, rigorous data gathering, systematic and insightful analysis, member checks, repeated interviews, peer debriefing and consistency between sources of information. The operationalization of these elements of the process is discussed next, with an emphasis on the way in which those elements contributed to this dissertation. Limitations are noted in a subsequent section. This discussion is undertaken now because assurance of the trustworthiness of the research process is foundational.

The primary source of data for this research was the set of transcripts of interviews conducted with 25 students studying full time, at a distance, to become teachers. Seidman (1998) sets out the basis of interviewing as follows:

Interviewing provides access to the context of people's behavior and thereby provides a way for researchers to understand the meaning of that behavior. A basic assumption in in-depth interviewing research is that the meaning people make of their experience affects the way they carry out that experience ... Interviewing allows us to put behavior in context and provides access to understanding their action (p. 4)

Interviewing provides a means of hearing and acknowledging the perspectives of participants engaged in joint activity. However, interviewing itself cannot be taken for granted as an unproblematic situation. The meanings participants give are offered within the context of the interview discourse situation – a situation which itself is not necessarily assumption free, as was noted in the discussion of data collection in Chapter Three. Fairclough (1989) notes “interviewers tend to assume, for instance, that interviewees are familiar with dominant ways of conducting interviews. And interviewees' contributions are correspondingly interpreted on the assumption that they are capable of working out what is required, and capable of providing it” (p. 48). These assumptions relate to the process of the interview as much as the analysis of

the data arising from it. In response to issues that might arise as threats to the credibility of the data, its analysis and interpretation, from violations of these assumptions, two responses can be made. With regard to the first assumption all participants were fully informed of the purpose of the interview and the procedures involved and all are known to have participated in and been successful in the interview for selection to the program. This is no guarantee of an understanding of interview protocol, but points to an ability to “play the interview game”. With regard to the second, participants were given access not only to the interview transcripts, but also to a complete draft of the chapter reporting the findings along with the invitation to respond, in any way they deemed necessary, to the draft. This process of member checking served to provide some measure of assurance of the validity of both the data and the data analysis process, and ensures that the assumption of participant portrayal and understanding was at least double-checked.

The process of developing categories for coding, related to the second of Dey’s (1999) points, also formed part of the discussion of method in Chapter Three. It was noted there that categorization is an interpretive process, and one that must be analytic rather than descriptive. Choice of categories could be informed by theory and research but should not necessarily be limited by them. However this leaves the researcher seeking a secure basis for additional categories that are generated, in an interpretive manner, from the data.

What underpins the generation of those categories? Drawing on the work of Lakoff (1987) on categorization, Dey writes:

we think in terms of categories and our categories are structured in terms of our prior experience and knowledge. If most of our

categories and much of our thinking is shaped by the structures and mapping processes that Lakoff identifies then we would do better to reflect critically upon the underlying models that invest our categories (and their relationships) with meaning (p. 93).

As the generator of categories, a researcher has to be aware of the personal beliefs and values that will shape the generation of those categories. In the present research, that area was addressed in Chapter Three. In addition there are several elements of the research process that have provided additional assurance for the generation of categories. Where categories were generated from analysis of the interviews, the existence of a category in a number of interviews – representing multiple sources of data – and the consistency between those sources both served as measures of assurance. In addition, the stability of categorization is assured through the development of an auditing process during data analysis. In methodological terms, each category for this research was named, described and dated, and where necessary note was made of similar categories to ensure transparency of use. This audit information was contained within the data management software, ensuring easy access and use during the coding process. A list of categories, representing those developed during the coding process in this research is given in Appendix E.

This brief section has highlighted elements of the research process undertaken to assure the credibility and trustworthiness of the data and the data analysis process. As Dey (1999) puts it, the first task is to make fit theory; the next is to make theory fit. The remainder of this chapter is mainly concerned with the second of these two tasks.

### Interaction and Control – Making Theory Fit

The research reported in this dissertation was undertaken to elaborate theoretical understandings that explain the relationship between the concept of control and interaction online in a distance education course. In the distance education field those understandings originate in the work of Moore (1972; 1993) and are primarily continued through the work of Garrison and Baynton (Baynton, 1992; Garrison, 1989; Garrison & Baynton, 1987). Work in the area of computer mediated communication complements the set of understandings derived from this distance education work and provides additional insight into the nature of control and interaction in online environments. As has already been noted, these literature-based understandings can serve as guides (Dey, 1999) in the process of generating a more elaborated understanding of the relationship between control and interaction online. They assist the process of conceptual grounding.

With a grounded theory approach, theory that is developed or elaborated has to fit the data. The approach to theory generation is primarily inductive rather than deductive, although the interaction between induction and deduction is acknowledged during later stages of coding in the analysis process (Strauss & Corbin, 1998, p. 137). The previous chapter recounted the stories that participants told during their interviews and has reported that text in a straightforward realist manner. Through the process of axial coding, these stories, which had been fragmented through the initial process of open coding, were pulled together again to illustrate the themes of interaction and control, and to give substance to the context of study for the participants. (This integration was aided by the use of diagramming and memoing,

techniques recommended by Strauss and Corbin (1998). The outcomes of both were recorded initially in the data management software. A copy of an early schematic of the categories, their integration and links is in Appendix F. The diagramming process within the software was relatively awkward and was subsequently abandoned.)

This realist approach is consistent with the roots of grounded theory, which was developed out of a “mixed marriage” (Dey, 1999) of the symbolic interactionist tradition and the quantitative survey methods of sociological research in the 1960s (Dey, 1999, p.25). Accordingly the realistic tale that emerges next is consistent with those early traditions of grounded theory, and in line with Van Maanen’s advice “There is, alas, no better training than going out and trying one’s hand at realist tales” (Van Maanen, 1988, p.139). However, the ground does change, and realist tales have been critiqued for the invisibility of their interpretive nature and the unsoundness of their ontological foundation. The former critique has been at least partially addressed through the “confessional” (Van Maanen, 1988) statement of researcher perspective. The latter can be addressed through what Richardson (1999) calls “constructionist revisions of grounded theory” that draw attention to “the constructed nature of participants’ perceptions of particular phenomena” (p. 72). Such revision draws on the idea that “conceptions of reality ... represent discursive practices that are used as resources in particular communicative encounters” (Richardson, 1999, p. 72). It becomes important therefore to illuminate the discursive elements that shape, and are shaped by the actions and interactions reported by participants.

The realist approach tells us that a picture has been constructed as it has because that is how it is. The argument made above suggests that the texts of the

participants have been constructed, that they are actually “social texts ... particular signifying practices of a given group (that) are both constituted by and constitutive of the discursive field in which members of the group live and function” (Elbaz, 1990, p.15). Elbaz is talking here about what Gee (1999) describes as Discourses, and she notes the importance, as does Gee, of asking in particular about how the Discourse is produced and how it exists in the world. Therefore, in addition to the realist tale it tells, this section briefly and tentatively discusses some possible reasons that participants have described the picture of life in their study program as they have, focusing on two terms used by participants in their interviews.

The stories that participants told of their involvement in the program and the part that interaction played within that involvement ultimately leads to a view that interaction is driven by two aspects of their lives. The participants have had to learn to become students, and they are learning to become teachers. The major focus of their lives online is being in a community of students, but in addition they are preparing to be part of a community of (beginning) teachers. The interaction in which participants engage is largely controlled by their identities as students and as teachers, and the activities and perspectives that they take up or which are thrust upon them in those roles.

This view of interaction and control is expanded in the rest of this section by considering four themes that are generated from the data. The first two of these themes are major themes, directly associated with being a student in the program. The second two are subsidiary, reflecting elements of a process of interaction that is mediated by technology. Of the two major themes, the first of these is concerned with

learning and looks at what does happen as students learn, not just what should happen, and reflects a socializing/normalizing motif that considers the aim and effects of interaction; the second concerns the community orientation and supportive nature of online interaction, discussing the affective character of interaction which is an integral part of the process and experience of learning even though analytically separable. Of the two minor themes, the first relates to the variability of interaction and is centered around the idea of contextualization as a result of time and intent; the second acknowledges the way interaction is constrained directly or indirectly by a number of factors including the participants themselves, technology and the program's communicative infrastructure. These latter two subsidiary themes cut across the two major themes and will assert their presence in the discussion of each of those major themes.

### Learning lessons

Participants entered the program of teacher education wanting to become teachers. First though they had to become students in the program, and then learn to run these two roles (student/teacher) parallel to each other during their time of study and practical experience in schools. They came to the program from a variety of backgrounds in which study was a fairly common phenomenon. However, fulltime study was not common in the backgrounds, and online study had never been a part of any participant's experience. How did they learn to become students, and what did they learn as they were doing so?

Interaction with "old hands" plays a large role in helping new students to understand what they have to do and how to do it, as was reported in the section

“Going online initially”, and in this sense the program creates its own sense of continuity. From that starting point on, participants continued creating their identity as students through interaction with each other, with lecturers, and through their interaction with study material.

Approaches to interaction in distance education mentioned earlier in this research have defined interaction in terms of its positive effect on learning. Moore’s term Dialog has a very specific meaning, in that to be Dialog, interaction must be between instructor and student and have positive qualities, be purposeful, constructive, and valued (Moore, 1993, p.26). Exchanges between students, not so delimited, are noted as helping students “think out” the material and “test” it in exchange with other students (Moore and Kearsley, 1996, p. 132). Similarly, Anderson and Garrison (1998, p.98) talk of interaction as needing to be reciprocal, voluntary, with shared control, facilitative of the construction of meaning, and explanatory rather than merely confirmatory. In each case the definition is predicated on the goal of successful learning.

The students in this research were engaged in successful learning. This is clearly true since they were engaged in their second and third years of a program. Participant discussion of the interaction in which they were engaged overwhelmingly supported the idea that positive, purposeful, reciprocal, exploratory dialog, where control is shared, was valued in and contributed to the learning process. The role of the lecturer was clearly evident in this, as was shown in the earlier section “Lecturer roles”. Lecturers provided opportunities for interaction and discussion. They engaged in good and positive responses, they provided feedback that was valued and

helped students to gain a deeper and more critical understanding of a subject. Garrison and Baynton's (1987, p.11) assertion that initiation of communication provides a more advantageous position to control the education can be placed against the fact that participants often discussed the way lecturers responded to their queries, rather than the interaction being constantly driven by the lecturers. Participant initiation of interaction provided for them an element of control, and a sense of shared collaborative endeavor.

Interaction with other students provided participants with many further positive and valued interactions assisting their learning. These interactions certainly helped participants think through and test out the material, as for example in Rachel's point about interaction with other students giving her a holistic understanding of an issue, and Ngaire's point that online interaction with others helped her to "glue things together" (2, 42). The value of debate between students is seen in the way some participants asserted the usefulness of the challenges and the exchange of perspectives, presumably enabling them to test out their understandings of material. However, the occurrence of such debate was quite dependent on location. Participants did not often engage in extensive debate beyond the small group forums in which much of their discussion was undertaken. While some debate did occur in the larger main class forum, participants indicated that their small group forums were the preferred location for this "testing" process.

How is this contextualized preference for interaction in one location rather than another to be explained? The interaction is of the type that participants regarded as useful, positive, collaborative, and concerned with the negotiation and

development of meaning. However, while participants willingly engage in this form of interaction in their small group they are less likely to participate, or participate less in a wider forum. In terms of Moore's theory one might argue for a differentiated sense of learner autonomy relative to each location, similar to the differentiation seen in academic self-concept. However, there appears as yet to be neither empirical evidence nor theoretical claim for such differentiation. Nor does the approach of Garrison appear to suggest why such differentiation should occur.

There does however seem to be scope for explanation in the work of Walther (1996). Walther suggests that computer-mediated communication can be impersonal, but rarely so; more often it is interpersonal or hyperpersonal. Hyperpersonal interaction involves the development of interpersonal relationships seen as more socially desirable or intimate than normal. According to Walther computer-mediated communication is interpersonal "when users have time to exchange information, to build impressions, and to compare values" (p. 33). It becomes hyperpersonal "when users experience commonality and are self-aware, physically separated, and communicating via a limited-cues channel that allows them to selectively self-present and edit" (p. 33), especially when the communication is asynchronous and the computer-mediated communication link is the only link there is. Selective self-presentation may not seem consistent with the implicit notion of truthful identity that underpins interaction in the program. However, the data provided in this research support the view that, in presentation of identity, students acted in consistent ways, with good will and good intention toward fellow students. Conceptually this view of hyperpersonal interaction also reflects the notion of transactional presence developed

by Shin (2002) in that it suggests the potential for a deeply supportive relationship, with feelings of availability and connectedness. These conditions for hyperpersonal interaction seem to provide a more than adequate description of the participants who are forced together electronically, from afar, with a common goal, and the need to present themselves in a way that ensures the survival of the group as a precondition for their survival in the course. Data concerning the way participants discussed the development of friendships online tends to support this view. In sum, interaction may be differentiated by place, on the basis of the development of hyperpersonal interaction possibilities – the preference being to communicate at this heightened level of intimacy.

This discussion, so far, of the evidence that links participant descriptions of some aspects of their interaction while learning, to elements of distance education theory, does not tell us the whole story. The approach adopted in this dissertation stressed the socially based and language dependent nature of the teaching-learning process and the relevance of the wider settings in which that process was situated. The previous part of this section has given us a picture of a learning community engaged in positive effective interaction, learning the lessons appropriate to becoming a teacher. A wider view shows how the participants also learnt two other important lessons, central to their lives as students, in which interaction and control of that interaction were major components – learning to pass and learning to live together.

The section of the previous chapter that set out the background of the participants engaging in this program highlighted the motivation they had to succeed in their chosen course of study. Participant descriptions of the purpose and focus they

felt imbued their study and Liz's corroborating comment that many participants felt the need to get their study done in the minimum time and "get out" both point to the importance of being aware of how to successfully complete study with a minimum of delay. For the participants this translated into a need to pass, and passing was, it seemed, to a large extent in the control of the lecturer.

There were two ways in which participants indicated that lecturers controlled success in a paper. The first of these was by taking note of which students were interacting; the second was by noting that students were saying the right things about the subject. Given these twin tasks, to interact and to say the right things, students learnt how to do both and also how to subvert the latter on occasions. We have seen how participants report the need to be engaged in interaction – certainly to meet the requirement but also beyond that. Participants also reported on the need they felt to "work out" what it was the lecturers wanted them to say. The importance of this latter point is emphasized by the reports of most participants that in choosing to read, they turned first to comments from their lecturers, and almost invariably printed them out.

Evans (1994) wrote of this "working out the lecturer" phenomenon, suggesting that "the teacher is often seen as the 'expert' or the repository of the desired knowledge and skills, and the learner needs to 'keep in' with the teacher to survive and succeed" (p. 68). His point that "the authority of the teachers is actually solidified in the printed and other texts in a way which can, in effect, render them less challengeable than if they were face-to-face with their students" (p. 68) was stated in relation to the production of course material, and depicts the potential for institutionalizing practices of control. The question at issue is whether or not the use

of asynchronous online interaction between student and lecturer provides space for students to shape their own learning, or whether the additional textual commentary that lecturers provide, with or without request, extends that control.

This form of textual control in the online interaction is seen in the participants' concerns about "being on the right track", noted in the previous chapter. The right track was the lecturer's track, and must be seen as a path that ensures understanding of the language and practices of teaching. It involved clearly understanding the requirements of the program and producing responses to assignments and online tasks that matched those requirements. Lecturers steered students along the right track through their responses to questions and the provision of study material. But lecturers were not the only ones to be guiding others along the right track. Students engaged in interaction online with the purpose of helping each other find and stay on the right track, having internalized the need to be engaged in producing texts of their own that reflected their role as learners of and participants in the Discourse of teaching.

The importance of acknowledging these tasks of interacting and saying the right thing partially lies in the fact that they have the potential to have bounded the type of interaction noted earlier in this section. While that earlier type of interaction can be described as positive and valued, it might well be contingent upon participants having learnt the "rules of the game" – what to say, and when and how to say it – as Edwards and Mercer (1987) say, the development of common knowledge. Participants seem to recognize that they are in an educational system learning to speak the language of teaching, constrained to do so through the authority of their

lecturer's voice and control of their success. That aspect of teacher education programs as being socialization into a profession has been remarked upon before (e.g. Howey, 1996, p. 148). The fact of a permanent ongoing record of participant comments provides lecturers who want it with a very effective means of surveillance and control – the opportunity to scrutinize the interaction of students and if necessary move them along to the safe haven of teacher education normality. The affordances of computer-mediated communication enable the development of an environment in which lecturer control can be relatively easily exercised to enhance professional socialization of students during their course of study. Janangelo (1991) wrote of this possibility of teacher control in a computer-mediated communication environment. He invoked Foucault's discussion of Bentham's panopticon as a metaphor for the ways in which surveillance of students is making them "responsible for their own subjugation and intimidating them into obeying us for fear of being 'seen' and 'punished'" (p. 49).

Some participants in this research were aware of the prospect and the reality of control. They were aware of their inculcation into the Discourse of teaching and did not always see the need to engage fully with it. The previous chapter showed how some students were concerned with the imposition of the Discourse of teaching and tried to give themselves space to construct ideas and approaches that reflected some measure of individuation. They acknowledged the possibilities of surveillance and occasionally took steps to evade that gaze. Participants would resort to the use of private mail or telephone to participate in conversations that involved sounding out

ideas prior to coming out with them in forums open to the lecturer. In short, they engaged in resistance within the limits of their personal agency.

Two points arising from the discussion above point to further aspects of interaction that are of interest. The first is the permanence of the record of discussion, and will be discussed next; the second is the use of a variety of means of interaction, which will be discussed in a subsequent section.

Kruh and Murphy (1990) investigated interaction within an interactive television setting and proposed that some interaction is 'vicarious', that is, learners participate by silently responding to questions or comments. In an online asynchronous environment, the permanence of the postings enables students to read and engage with interaction occurring between other students without directly participating themselves. Sutton (2000) investigated vicarious interaction in a CMC setting and found that even though vicarious interactors did not actively engage in online discussion their levels of achievement and course satisfaction were not significantly different from others in the class. Participant reports of the value of such vicarious interaction indicate that it was an accepted feature of their online environment, but it appears that it was a strategic choice for interaction in particular circumstances rather than a preferred type of interaction. Participants would read and reflect on discussion when they felt they had no contribution to make, or would read and avoid contributing when such contribution would unnecessarily clutter the discussion board.

Learning to live with each other was the second lesson that participants learnt. They were involved in a cohort-based program of study, and were thus obliged to

spend three years in each other's company. The communication structure set up within the program, the creation of small groups but regular change in their composition, the emphasis on interaction, and the demanding nature of the program provided a context within which the interaction in which they were engaged was quite tightly constrained. Constraints had several forms.

Participants had the option to choose to read and respond to any number of the total messages that were posted. They reported that, at least partly to save themselves or their fellow students time, they would attend to a fraction of the messages, either prioritizing or making deliberate choices about which messages to read and when to post. The strategy of choosing to read highlighted two aspects: a) the practice of reading the comments of students who were most likely to contribute to one's learning through insightful comment or because of their thorough knowledge of the readings; and, b) the practice of ignoring the work of some students who, experience had shown, posted confusing or tangential messages. The strategy of choosing to post involved students in responding only to those messages that held high personal interest, and avoiding responses that would not add anything new to an interaction sequence.

These strategies point to possible support for Wegerif's (1998) claim that an online community can develop groups of insiders and outsiders. The data reported show that participants are aware that there exists a group of students, within the cohort as a whole, to whose messages they prefer to attend, and a group whose messages they are less inclined to view. While Wegerif's students had to cross a threshold on the basis of access, gender and prior experience of group work, none of

these factors seem relevant in the research reported here. Access can be considered reasonably consistent across the program, the program is largely single-sex with a huge majority of women, and if the experience of participants is a guide, previous experience of group work is minimal. The basis of the distinction made by participants in this research – the reason for privileging the work of some students and ignoring that of others – appears to be solely the ability to contribute to learning through engagement in interaction.

The responses of other students to participants' messages gave rise to a second form of constraint. In a manner reminiscent of the anxiety about posting online that was reported by Picciano (1998), participants reported taking (sometimes extreme) care about the wording of messages that would be sent to the class bulletin board, to avoid negative responses and rebukes. The proffered explanations were "misunderstanding" and "stress". The strategy of grooming messages, of being careful how you word them, was employed by some to avoid the consequences of a misunderstood message. What can be seen here is a kind of self-surveillance and self-censorship. Having experienced rebuke personally or vicariously, participants reported tailoring the form of their messages to maintain a placid and consensual environment for interaction. It is interesting that it is the students themselves who are creating the environment in which this self-censorship is felt to be necessary.

The type of forum seems to be relevant once more. It seems from the data that participants felt the need to censor only those messages that were being sent to class forums. Small groups were spoken of as being a much more receptive forum. The hyperpersonal nature of interaction can again be drawn upon as a potential

explanation for this phenomenon. Misunderstanding and the effect of stress seemed to have a reduced impact in the small groups where students worked consistently and intensely.

Learning to live with others seems to involve two main forms of constraint. The first is viewed as sense of thoughtful discrimination – attending primarily to messages sent by a small number of people from the cohort as a whole, while ignoring others. The second entails self-censorship to insure against the possibility of rebuke. These constraints hint at a community of people involved in practices of normalization, a flattening of perspective and approach across the cohort. In contrast to the broadening of perspectives suggested as an outcome of the interaction earlier in this section, there is a sense of a reduced tendency to allow challenge or change. The exception is the existence of the formal small groups within which participants operate. In effect many participants may lead two lives, one potentially involving hyperpersonal interaction and the exchange of open, challenging, thought provoking messages; the other probably involving more cautious irregular interaction with relative strangers and a flattened, restricted, more cautious dialog.

The participants involved in this research were learning several lessons through their involvement in the program. The first was how to become a teacher, and entailed gaining an understanding of the professional knowledge expected of teachers and being able to analyze and critique that knowledge. In learning this lesson participants reported engaging in positive thoughtful interaction with both lecturers and their fellow students. The qualification to this general outcome was that participants reported that most inter-student discussion occurred in their formal small

groups rather than in the whole class forum, possibly for the reasons discussed earlier in this section. Two assertions may thus be made:

1. An asynchronous online environment does afford the possibility of positive, valued, collaborative interaction for learning – Dialog in Moore’s terms – between students and lecturer, and extends that affordance to inter-student interaction.

2. Learning-oriented positive, valued, collaborative interaction between students is most likely to occur where students are in an environment that enables the creation of hyperpersonal interaction.

A second outcome from this first lesson was that participants learnt both to “read” their lecturers, and to control the content of their own messages to ensure they would be able to succeed in a paper. They also developed ways of evading the gaze of the lecturer. The following assertions can be made:

3. An asynchronous online environment affords lecturers greater possibility of control over the nature and content of student messages than other distance education environments. This control is contingent on the permanence of the record of interaction and the frequent and continuous nature of posting in forums visible to lecturers.

4. An online asynchronous environment provides distance students with an environment in which they can, in an ongoing and permanent manner, shape their own language and practices, and that of others to reflect the dominant, and required discourse of their program of study. However, it also provides an opportunity for

students as personal agents to mould that discourse to address personal approaches to their study in and practice of their discipline.

The permanence and asynchronicity of the medium allowed students to read messages and engage in interaction at any time. There appear to be circumstances under which students read and decide not to, or avoid responding, but where the engagement with the discussion of others is valued. Accordingly,

5. In an online asynchronous environment students may use vicarious interaction as a preferred strategy within their learning in certain situations. This is quite distinct from the idea that vicarious interaction is a style of interaction in the online environment.

As they learnt to live together with other students in the online environment, participants found that they could engage in interaction in ways that maximized the benefit to learning they saw arising from that interaction while minimizing the duration of involvement in what they saw as a time consuming task. Participants reported making deliberate choices about which messages they would read and which they wouldn't, and having personal "guidelines" about when they would and would not post messages to the paper bulletin boards.

A process of self-censorship of messages to some forums complemented this stratified approach to interaction. When students were posting beyond their formal small groups they would often engage in strict editing of the text of a message, recognizing that the potential outcome of posting a message that might be

misunderstood was at least a hurtful rebuke, and possibly a protracted, emotionally draining exchange. Two assertions arise from this lesson:

6. An online asynchronous environment enables students to tailor their involvement in interaction to maximize the benefit they gain for learning and minimize the distraction of messages that might confuse or obfuscate that learning.

7. Unless students are able to engage in a hyperpersonal level of interaction in an online asynchronous environment their interactions are less likely to reveal strongly held personal convictions about topics of relevance to a course of study, and they are more likely to be engaged in restrained, normalized interaction.

This latter assertion is of particular importance in the context of this research because the examination of attitudes and perspectives forms an integral part of the initial education process and induction into the profession of teaching (Darling-Hammond, 2000, p. 170). The program will suffer, to the extent to which conditions exist that are prejudicial to the statement and examination of student attitudes and perspectives. More widely, this assertion may have relevance in courses of study related to what might be broadly described as human services professions –social welfare, nursing, or counseling for example.

#### Creating community

Thompson (1996) reports that the commonly held view of the distance learner is “one who is (1) older than the typical undergraduate, (2) female, (3) likely to be employed full time, and (4) married” (p. 13). A distinguishing characteristic of the

participants in this research is that they were students engaged in full time distance education rather than full time employment. In other respects the interview data show these students as matching that commonly held view. As full time distance students they are a relatively small group at the university in which they are enrolled. For the academic year 2002, the university has 19,746 students who are “mainly extramural”, and of those 2120, or nearly 11%, are defined as full time students (Helcox, M. personal communication, November 28, 2002; mainly extramural is the classification given to students who are taking a majority of extramural papers during any academic year).

The experience of a full time distance student, it can be argued, is markedly different from that of a part time one. Part time students are striving to meet the demands of study on top of those of working and family life. In this difficult task they can draw on support from their work environment as well as their home environment (Evans, 1994). Full time distance students do not have the advantage of the work environment as an additional source of either learning or affective support. As was noted in the previous chapter, full time distance study has the potential to doubly isolate students. They are isolated from each other in geographical terms and there is considerable potential for them to be isolated from any social network beyond the home because of their extensive involvement in home-based study. The interviews provided examples of students reporting this latter form of isolation, and also reporting that the interaction that occurred between students in the program helped them to overcome those feelings of isolation.

With this background, and the other shared features of the program recognized by participants, it is not surprising they reported that a sense of online community developed. The dimensions of trust, spirit, and common learning expectations, along with interaction, described by Rovai (2002) as the constitutive elements of a learning community, are evident in the way participants spoke of their experience in the program. This sense of community was openly acknowledged and discussed as a way of providing support in affective terms as well as for learning.

In this regard the participants are echoing the words of two groups of people. First there are those who wrote about the creation of virtual learning communities at a time when the potential of the Internet for the creation of such learning communities was just being explored. Dede (1996), Harasim, Hiltz, Teles & Turoff (1995) and Kaye (1992) provide examples of the early arguments for the creation of communities of learners using computer-mediated communication, because of their overall contribution to student learning. The second group is that segment of distance educators who argue that the interaction that occurs in a distance education course provides important and desirable levels of affective support for the students. Examples from this latter group were noted in the earlier literature review and include Holmberg (1995), Verduin and Clark (1991) and Mason (1994). These arguments are useful for the way they have pointed to the positive effects arising from the creation of such communities. The data presented here can be interpreted as providing support for attempts to create learning communities in distance education courses.

However, the review of literature conducted also noted Jones' (1998) argument, repeated here, that “ just because the spaces with which we are now

concerned are electronic there is no guarantee that they are democratic, egalitarian or accessible and it is not the case that we can forgo asking in particular about substance and dominance” (p. 20). Participants recognized diversity within their community; they recognized that the community was at least differentiated into both formal and informal small groups; and they acknowledged that some members of the community had more status than others. The aspects of differentiation and status differential point to a community that is not egalitarian, but the data does not appear to provide support for an argument that control was exercised in the affective relations that existed between students as a result of their interaction within the community.

In fact, as reported in the previous chapter, a prevailing theme in the discourse of students throughout the interviews was the idea that they were “all in the same boat”, giving the strong feeling of a crew of assorted personalities, but with similar backgrounds, needing to get on with each other, to support and encourage, in order to arrive at a common destination. This is a particularly strong metaphor in New Zealand where a sense of unity and community is encouraged over a sense of individualism, and where one’s history, for Maori (the indigenous people) and for some Pakeha (the first (European) immigrants), is accounted for by acknowledging the waka (canoe/ship) in which one arrived in Aotearoa/New Zealand.

Apart from its deeply ingrained social underpinnings, the discourse and practices that surrounded the concept of “sense of community” were consciously practised within the institution. The commitment of the parent organization – the University – to a vision of the creation of “genuine learning communities” was the starting point. Within the program this was enacted by the use of a site entitled

“DTEP Community” to which all students in the program had access and the program coordinators addressed regular messages to the “DTEP Community”. In itself this represents the discursive labeling of a context. The practice of this sense of community represented by the reported high levels of affective support could also be seen to have been part of the program from its inception. Dianne (1, 301) reported:

I have talked to a couple of the people who are the very first intake and um they speak very, very highly of the couple that started the whole programme off, (text deleted) because they say they were so supportive that when the next lot came in they supported the next lot. And I think it's a spin-off. (text deleted) I've talked to two of them and they have said much the same thing

The development of close personal relationships, friendships even, between students was not an uncommon feature of the program according to the participant reports. These friendships developed out of the asynchronous online bulletin board based interaction that occurred and contributed to the sense of community that was developed within the program. While that multi-party asynchronous interaction provided the necessary opportunity for students to begin developing friendships, it appears, amongst the mix of technologies available to students, to have been seen by participants as being insufficient, or inadequate a technology to sustain those friendships. The participants indicated that in the process of developing friendships they moved from online bulletin board communications with others to a range of other technologies including the web site's private mail system, instant messaging, telephone communication, and ultimately some engaged in face-to-face meetings. Haythornthwaite, Kazmer, Robins and Shoemaker (2000) also draw attention to the value of multiple means of communication in distance education contexts, concluding that “whether seen as directly relevant to the educational experience or not, students

need these multiple ways of interacting in order to support their need to engage in class, task, social, support, emotional and intellectual exchanges” (p. 15). There is here evidence that technologies afford different opportunities for students; that students seize on those different affordances and match them to the requirements of their particular communication needs. This is an important point to recognize since it forces an acknowledgement of the limitations of asynchronous online interaction and the way in which it has the potential to control the nature of interaction between students.

Summing up, it appears that being a full time distance education student has the potential to be a very isolating experience, one that can be addressed in an online asynchronous environment through interaction with other students, in the absence of the range of support networks available to the part time distance student. Accordingly it can be asserted that:

8. Full time distance students are more likely to engage in interaction with their peers than part time distance students because of their relative isolation from other support networks.

Within the program a sense of community developed through the interaction and sense of common purpose that students shared. Participants valued this community for the affective support it provided while at the same time they recognized that it was a diverse and differentiated community where some had greater status than others. Accordingly

9. The creation of a community of learners involved in online asynchronous interaction can result in the provision of valuable affective peer support for students

even though the community is simultaneously recognized as being a diverse and differentiated entity at group and individual levels.

Finally, within the community developed participants found friendship, first through encounters on the class and group forums and extended through interaction using a range of technologies. This point leads to the assertion that

10. The use of single technologies places limits on the interaction possibilities available to students, who, recognizing those limits and their controlling impact on interaction, extend the range of interaction capabilities where possible.

### Summary

Restating the assertions that report its main themes is the best way to summarize this section discussing interaction and control in online asynchronous interaction in distance education contexts. Concerning the lessons learnt there are seven assertions:

1. An asynchronous online environment does afford the possibility of positive, valued, collaborative interaction for learning between students and lecturer, and extends that affordance to inter-student interaction.

2. Learning-oriented positive, valued, collaborative interaction between students is most likely to occur where students are in an environment that enables the creation of hyperpersonal interaction.

3. An asynchronous online environment affords lecturers greater possibility of control over the nature and content of student messages than other distance education

environments. This control is contingent on the permanence of the record of interaction and the frequent and continuous nature of posting in forums visible to lecturers.

4. An online asynchronous environment provides distance students with an environment in which they can, in an ongoing and permanent manner, shape their own language and practices, and that of others to reflect the dominant, and required discourse of their program of study. It also provides an opportunity for students as personal agents to mould that discourse to address personal approaches to their study in and practice of their discipline.

5. In an online asynchronous environment students may use vicarious interaction as a preferred strategy within their learning in certain situations. This is quite distinct from the idea that vicarious interaction is a preferred style of interaction in the online environment.

6. An online asynchronous environment enables students to tailor their involvement in interaction to maximize the benefit they gain for learning and minimize the distraction of messages that might confuse or obfuscate that learning.

7. Unless students are able to engage in a hyperpersonal level of interaction in an online asynchronous environment their interactions are less likely to reveal strongly held personal convictions about topics of relevance to a course of study, and they are more likely to be engaged in restrained, normalized interaction.

Concerning the community that students created there are three assertions:

8. Full time distance students are more likely to engage in interaction with their peers than part time distance students because of their relative isolation from other support networks.

9. The creation of a community of learners involved in online asynchronous interaction can result in the provision of valuable affective peer support for students even though the community is simultaneously recognized as being a diverse and differentiated entity at group and individual levels.

10. The use of a single technology places limits on the interaction possibilities available to students, who, recognizing those limits and their controlling impact on interaction, may act to extend, where possible, the range of interaction capabilities supporting their education.

#### Limitations of the Research

Measures taken to ensure the trustworthiness of this research were discussed in the earlier section “The Research Process”. That discussion addressed the way in which the data collection and analysis techniques central to a grounded theory approach were applied in this research. The argument was made that those techniques were employed in a way that ensured the credibility, confirmability and dependability of the research reported here. This section acknowledges several limitations that arose during the operationalization of the study.

Constraints on the data collection process – namely the need to collect data during the first half of 2002 –forced the research from planned data collection within a small single stand alone paper to data collection in a moderate sized program with specific group oriented structures for online asynchronous interaction. Initial

discussion with course lecturers indicated a willingness to allow access to the online forums that served whole class discussion, but not to the small group forums in which students initially engaged in tasks requiring online discussion. A decision to proceed on this basis was made, with recognition that all students in a group could subsequently be asked for approval to access the small group discussion. In the event, informed consent was not gained from all students involved in either of the papers that were the subject of the study. This necessarily prevented use of bulletin board transcripts as a data source within the study. However, to assist with the selection of interviewees, course lecturers did provide information about the extent of messages posted and messages read within the paper site. This information can be abstracted from the WebCT environment without reference to the actual messages. In this way the approach to selection of interviewees was not compromised.

With this limitation noted, two strategies were adopted to ensure adequate triangulation of data to guarantee trustworthiness of the findings. First, particular attention was paid to the rigor with which participant comments could be seen to corroborate each other. This can be seen in the text of the previous chapter where responses from a number of participants are used to develop and support the themes of the study. Second, participants were invited to talk about, second hand, examples of discussion that were notable to them or were particularly pertinent to themes developing within the research. To give effect to this strategy, participants were advised, prior to the second interview, that part of the interview would be given over to asking them to discuss particular instances of interaction that would illustrate

things they had said. A copy of the transcript of the first interview accompanied the early warning.

This strategy had very limited success. Two examples are indicative of the responses normally obtained. From David (2, 148) “Um an example in the pip paper. Ah ... um . There would be heaps there. It’s like looking for a green car. There’s never one around when you want one sort of thing. Um ... yeah. Um . No. There would be examples there, I’m sure”. Joy’s (2, 139-140) response was slightly more helpful but it pointed directly to the bulletin board, already noted as an inaccessible data source:

R(earcher): Is it possible for you to point me or or um send me off to look at a particular discussion that might illustrate this point?

J(oy): Within PIP. Um...if you looked, oh no I can’t think of one right now, but if (you look for) (name deleted), the person who is really good at saying I see it from a different perspective and um usually if there is a long thread of discussion (laugh) that’s an indication that there’s been some really good stuff going on.

A further limitation of gathering data from students involved a full time online program is that their examples and experiences necessarily drew on their study and interaction across the range of papers in which they were involved. Where participants reported specific examples from other papers there was an ethical responsibility to not follow up those references.

A final potential limitation that points to the need to conduct research more widely arises from the effect that the goals of the program of study might have had on the interaction that occurred. Teacher education is a professional education where students are expected to both gain professional and practical knowledge and be able to critically analyze, discuss and reflect on that knowledge. Although the program

was varied and the subjects that the students studied were varied, those overarching goals delimit the nature of the interaction that is expected, encouraged, and even demanded at times.

### Recommendations for Further Research

The research undertaken in this study enabled the generation of a series of assertions about the relationship between interaction and control in online asynchronous interaction in a distance education context. Those assertions provide the means to look beyond the findings of this study and consider new areas of research endeavor. Following are four areas recommended for further study.

1. An over-riding issue is the differential between full-time and part-time students who are studying at a distance. In the institutional context of this study a substantial number of distance students study full time. It is likely that this is replicated at other institutions around the world – an empirical question. An argument was presented suggesting that full-time distance students have fewer support networks. The study suggested that, within an online environment they are likely to be more engaged in interaction with each other for the affective and cognitive support required in their study. Two issues arise. First is to investigate the extent to which full time students require affective and cognitive support in their study and how this is different from that of part-time distance students. The second is to investigate the sources of that support and the nature of its provision.

2. The study clearly indicated that an online asynchronous environment afforded greater possibility of control over the nature and content of interaction than other distance education environments. On the basis of the accounts of participants,

this was reported as a function of both lecturer and student communication. The further development of this assertion requires investigation of the discourse of the participants themselves. In particular this research should focus on both the nature of control and on the possibilities for tactical resistance opened up by the interplay of personal agency, socio-cultural factors and the affordances of asynchronous interaction.

3. The study revealed that students adopted strategies that had utility in maximizing the possibilities of learning while minimizing the engagement in interaction. This area of trade-off between the time and effort involved in interaction and the acquisition of or exposure to new ideas and perspectives involved vicarious interaction, choosing what to post and choosing what to read. The use of these strategies, their relationship to factors such as learner autonomy and course structure, and the possibility of other similar strategies is fertile ground for further investigation. These strategies also pointed to the ways in which interaction online involves students making choices that lead to the development of a community of learners that is differentiated by its members in several ways. Acknowledgement of this differentiation adds a new dimension to the study of learning communities in distance education contexts, and the ways in which interaction contributes to that differentiation requires more detailed examination.

4. The assertions that were developed suggested that hyperpersonal interaction was developed in the formal small groups that were an integral part of the site of this study, and that that form of interaction was essential in the development of positive interaction, the robust exchange of views, and the examination of personal beliefs.

This assertion warrants further empirical investigation, and the examination of potential conceptual and empirical links with the concept of transactional presence. Of particular interest is the relationship between this form of interaction and the size of formal or informal groups developed within an online asynchronous interaction environment.

### Conclusions

This study has attempted elaborate theoretical understandings concerning the relationship between the concept of control and interaction within the teaching-learning process in a distance education context. In particular it sought to identify and examine factors that help to explain that relationship between control and interaction where people interact with each other online, in a course delivered at a distance, and propose relationships that might exist between those factors. The basis for this work was the set of interview texts that comprised the stories of 25 participants in a full time distance delivered teacher education program.

The stories participants told revealed that their lives, as is always the case with distance students, were complex and multifaceted. They struggled to meet the demands of home life and study. The full time nature of their study seemed to place particular demands on them, and talking with participants left me with a renewed sense of admiration for their determination and commitment. Most found a source of support, both affective and cognitive, in their online interaction with other students and with their lecturers. The sense of community that they discussed freely is both produced by, and produces the interaction that enables that support.

This research has shown that the interaction within the community creates, and is subject to, influences that both enhance and restrict the nature and extent of that interaction. It has shown that those influences draw on personal agency, institutional features and wider socio-cultural factors. It has pointed to the tension and conflict that are part of the discourse of education and illustrated how control is a feature of that discourse. The intention, as Grenfell (1998) puts it, is not to replace constructive and cooperative views of education with a conflict model, but to open up spaces where the full range of processes actually employed in educational exchanges can be scrutinized. To this end, a series of assertions was generated that set out ten statements – statements that in some cases supported what is already known and in others pointed to areas for further investigation.

The considerable and growing involvement of distance education with online technologies, and the recognized centrality of the education transaction between those engaged in educational activity at a distance from each other, creates a responsibility for distance educators. That responsibility means that distance educators must be aware of the complex nature of online interaction and come to understand it through their own research and within their own practice. The challenge for those involved in distance education is to enrich those understandings, to apply them to all distance education contexts and, using what Charles Wedemeyer described as an extraordinary richness of communications opportunities, “include in our universe of learning all the people who need to learn” (Wedemeyer in Moore, 2000, p.5).

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## Appendices

## A Interview Guide

### Interview outline

Interviews will be structured around a series of topics with lead questions identified below and follow up areas to use as required.

### Interview guide

#### One Educational History

I'd like to start by asking you about your background as a student. Would you talk me through the studying you have done since you left high school?

What have you studied here at (higher education institution)?

#### Two The course

Why did you decide to take this particular course?

Have you taken any distance courses before? Any online distance courses?

What do you expect an online course will be like?

What has your experience of online courses been?

#### Three What it is to be a student

Is this your first course as a distance student? How would you describe what it is like being a distance student?

Could you give me an example of a typical day (week) in your life as a student?

Do you think being a distance student is different from being on campus?

Why (not)?

#### Four Ideas about learning

How do you learn best? What sort of things do you do to help you to learn?

How will you go about learning best within this course?

Are there certain things that distance students have to do to be able to learn?

Are there some things they can't do as far as learning is concerned? ((How) do you compensate for these?

#### Five Interaction

I'm interested in online interaction, but it seems to have many definitions. How would you define it?

Do you think it is different from interaction in a tutorial or seminar on campus? Why?

Are there ever times when people could be sending messages to the course bulletin board but not interacting?

Have you been involved in much online discussion?

What was it like at the start of the course – was it easy or hard to go online and participate?

How does that compare with now?

What do you do when you are online – can you describe the kinds of things you do when you go online?

How do you know/decide what to do?

Could you run over what you did last time you went online in the course?

#### Six Being online

How do you go online and get into the course site? What do you physically have to do?

Talk me through the process of getting online in this course.

Do you find it an easy process?

Have you had similar experiences in the past? Tell me about them.

Apart from technology related matters is there anything that acts as a barrier to your participation in class discussions? (Prompt: family, social, institutional factors)

#### Seven Control and online discussion

Do people contribute equally in class discussion or do some contribute more than others?

When is it that people are most likely to make a contribution?

Can you think back to a recent discussion you have had online in this course and talk me through it?  
Is there anything that stops you from going online or joining in a discussion?  
When do you feel most able to contribute?

Are there some people who rarely go online?

Do you feel you know the other people in your class through the online discussions?

How does this happen?  
Can you give me an example of someone you have got to know during this course and how that happened?

#### Eight The role of the lecturer

What does the lecturer do in this course overall? Does your lecturer go online much?

How would you describe the purposes of their online contributions?  
What kinds of thing do they say? Can you give me some examples?

#### Concluding

Is there anything else about the class interaction online or about your part in that interaction that you haven't had the chance to mention, or I haven't asked?

Thanks for talking with me. If you want to ask anything or talk about the things we discussed just get in touch. I'd be happy to meet again.

## B Human Subjects Institutional Review Board Form B

Form B  
Procedures and methodology  
Protection of human research subjects

1. The purpose of this study is to examine and seek an explanation of the relationship between the concepts of control and interaction in learning and teaching, in the context of interaction that occurs between and amongst learners and faculty in a distance education course using computer based communication as the medium for interaction.

2. The proposed study will be undertaken as part of the requirements for the D.Ed in Adult Education. Prof. Michael Moore of the Department of Adult Education, Instructional Systems and Workforce Education and Development is my adviser and Committee Chair.

3. The only requirement for participants in the study is that they be undertaking a course of study online through a higher education institution. There are no stipulations as to gender, race, age or other demographic, social or personal characteristics.

4. I will approach a faculty member teaching a course online requesting permission to engage in the research outlined in paragraph 1 above. Once permission at that point is gained, I will approach the students in the course requesting permission to engage in the research outlined in paragraph 1 above..

5. The study will use a grounded theory approach. Data gathering process in this study will initially involve the collection of online discourse from the course itself and the interviewing of a small number of participants (not more than five) who will be selected to represent the range of contribution to online discussion in the course.

After an initial interview with each of the initially selected participants, further interviews from course members will be undertaken. Participants for these interviews will be selected on the basis of the ongoing analysis of data and the generation of themes of relevance to the investigation.

6. I will be the sole investigator in the study. A typist will be involved in transcribing interviews with participants. Other resources required will be limited to a tape recorder for audiotaping of interviews and computing facilities for recording and archiving the online discourse that occurs.

7. An informed consent form will be presented to and discussed with participants. With students at a distance the form will be mailed and arrangements made to

telephone them for subsequent discussion of the research and the form. Participants will be asked to indicate their consent by signing and returning the informed consent form.

8. There are no known risks to participants from the procedures involved in this research provided confidentiality is adequately maintained.

9. Not applicable

10. An understanding of the relationship between interaction and control, and the factors that undergird that relationship in online discussions, could help teachers and students to construct pedagogical contexts in which interaction is encouraged, is developed and contributes to the attainment of learning outcomes sought by both teachers and learners. Thus this study will be of benefit to faculty who are predominantly the creators and controllers of online educational contexts; but it will also, as a consequence of faculty (assumed beneficial) actions be of value to their students. In addition, students who become aware of the relationship between interaction and control in online interaction in distance education will have an informed insight into the role of online interaction in their learning and the context in which they are participating and will be more able to understand the nature of their online interaction and its purposes.

11. Confidentiality will be ensured through the use of fictitious names introduced during the coding of data and maintained during the reporting of the research. It will be indicated to participants that they may be able to identify each other despite the use of fictitious names. Data will be stored on my own computer. A back-up copy of the data and files arising from ongoing analysis will be stored on removable disk at my place of work in a secure container in a locked draw.

12. Professor Michael Moore, Department of Adult Education, Instructional Systems and Workforce Education and Development, Pennsylvania State University.

13. Not applicable

## C Informed Consent Form for Participants

## INFORMED CONSENT FORM FOR BEHAVIORAL RESEARCH STUDY

The Pennsylvania State University

Title of Project: Interaction and control in asynchronous computer-mediated communication in a distance education context.

Person in charge: William G. Anderson  
 Department of Learning and Teaching  
 Massey University  
 Palmerston North  
 Phone: 6) 357-9104  
 Email: wga106@psu.edu or w.g.anderson@massey.ac.nz

1. This section provides an explanation of the study in which you will be participating.
  - A. The study in which you will be participating is part of a doctoral research study intended to develop an understanding of why people interact with each other during distance education courses and what factors might act as barriers or as encouragement to that interaction. It focuses on interaction that occurs between and amongst learners and faculty in distance education courses using computer-mediated communication as the basis for interaction. The study aims to provide information that will enable faculty and students engaged in online courses to obtain greater benefit from the use of online interaction for educational purposes.
  - B. If you agree to take part in this research you will be asked to allow the researcher to have access to and take a copy of any online message that you send during your participation in course discussion or in discussion about the course with any student or faculty member involved in the course. In addition you may be asked to participate in interviews with the researcher. The interviews will be audiotaped.
  - C. The time you spend participating in this study will be the time you are involved in interviews. The initial interview will take up to one hour and subsequent follow-up interviews will last up to 30 minutes. You will not be interviewed more than three times. Apart from interviews you will not spend any time engaging in activities related purely to the research.
  - D. This study will involve the use of audiotapes for recording interviews. The tapes will be transcribed by a typist. The audiotapes and transcripts will be destroyed within a year of the final submission of the dissertation.
2. This section describes your rights as a research participant.
  - A. You may ask any questions about the research procedures and these questions will be answered. Questions should be directed to William

Anderson. Further questions about your rights as a participant may be directed to the Office of Regulatory Compliance at Pennsylvania State University, 212 Kern Graduate Building, University Park, Pennsylvania, 16802, USA. Internet address: <http://www.research.psu.edu/orc>

- B. Your participation in this research is confidential. Only the person in charge will have access to your identity and to information that can be associated with your identity. In the event of publication of this research no personally identifying information will be disclosed.
- C. Your participation is voluntary. You are free to stop participating in the research at any time, or to decline to answer any specific question without penalty.
- D. This study involves minimal risk; that is, there are no risks to your physical or mental health beyond those encountered in the normal course of everyday life.

3. This section indicates that you are giving your informed consent to participate in the research.

Participant

I agree to participate in the study described in section 1 above and I have received answers to any questions I have had about the research program of the Pennsylvania State University.

I understand the information given to me and I have received answers to any questions I may have had about the research procedure. I understand and agree to the conditions of this study as described.

To the best of my knowledge and belief, I have no physical or mental illness or difficulties that would increase the risk to me of participation in the study.

I understand that I will receive no compensation for participation in the study.

I understand that my participation in this research is purely voluntary and that I may withdraw from this study at any time by notifying the person in charge.

I am 18 years of age or older.

I understand that I will receive a signed copy of the consent form.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher

I certify that the informed consent procedure has been followed and that I have answered any questions from the participant above as fully as possible.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

## D Initial Message to Participants

Message no. 153: posted by (name deleted) on Mon Feb 11, 2002 14:01  
Subject: Research Project

Hi folks.

Well here's something a bit different! Bill Anderson is a personal friend but he is not part of the teaching team for this paper. When you read Bill's note (below) you will see that he is interested in the relationship between online discussion and learning for you. As such it has nothing to do with your marks in this paper. Bill and I will not be discussing his work with me during the Semester. I have, however asked Bill to have a session with me (AFTER marks are finalised) addressing the topic "How can I improve my on-line teaching?". So your interactions with Bill will have absolutely no influence on your marks and I would commend his project to you.

regards h

Hi

My name is Bill Anderson. I'm undertaking doctoral studies through The Pennsylvania State University (in the United States), working in the area of distance education. Your lecturer, (lecturer name), has kindly agreed to allow me to use this forum to seek participants in a research project I am undertaking. Let me explain the project briefly first.

My interest lies in the use that people make of online discussion in distance education. In very broad terms I'm interested in both the extent and the nature of online discussion, and the way online discussion can both shape learning and help people to learn. I am especially interested in the way students perceive interaction online, in the meaning that online discussion has for them, and in the factors that have an impact on the opportunity and ability people feel they have to engage in online discussion. The study ultimately aims to provide information that will enable lecturers and students engaged in online courses to obtain greater benefit from the use of online interaction for educational purposes.

If you agree to participate in this study I will ask you to give me permission to access everything that you write in a public forum during this course. I will not be seeking permission to access your private communications with other students or the lecturer. In addition I may you to participate in two interviews with me. The first of these may take up to one hour and the second will be about half that length. The interviews

will all be undertaken by phone and will be tape recorded.

If you wish to participate or if you would like more information would you please contact me. At the moment that most convenient ways you can do this are ...

email

my email address is [w.g.anderson@massey.ac.nz](mailto:w.g.anderson@massey.ac.nz)

or phone

my work phone is 06) 3569099 ext 8871

Regards

Bill Anderson

## E List of Categories Generated During the Research Process

NVivo revision 1.3.146 Licensee: Bill Anderson

Project: Control User: Administrator Date: 2/12/2002 - 2:19:57 p.m.

NODE LISTING

Nodes in Set: All Free Nodes  
 Created: 9/04/2002 - 8:15:22 p.m.  
 Modified: 9/04/2002 - 8:15:22 p.m.  
 Number of Nodes: 89

1 barriers to discussion

Description:

this node will code text where anything that relates to stopping one from going online, or even having second thoughts about it, can be seen in the text. The node difficulties of online discussion tends to code problems specifically related to the online discussion, where this should be wider issues

2 being a distance student

3 being on the right track

Description:

only used with second interviews where I have asked specific questions about it, or where students have used the expression

4 changes in involvement - reasons

Description:

this node will code the reasons that people say their involvement in online discussion has changed since the beginning of the course

5 choosing to post

Description:

this node codes text that explains why students decide to post

6 choosing to read

Description:

this node codes text that tells why people choose to read some messages and not others

7 comparative contributions

Description:

this node will code text that attempts to explain the different levels of contributions people make and the reasons for those differences

## 8 control online

## Description:

this node will code text that shows how some people's messages have more status/dominate/control ... or that shows the interviewee has a perception of equivalence between postings

## 9 control\_indep

## Description:

this node will code text that alludes to control aspects in the Garrison and Baynton sense of control

## 10 course choice reasons

## Description:

this node will from 20/9 code the reasons people give for taking a teacher education degree and the reasons they give for deciding to do it at a distance

## 11 creating personalities

## Description:

this node will code text saying that personalities are created, produced and interpreted online and describing how that occurs

## 12 defining online interaction

## Description:

this node will code text that shows how the student defines online interaction

## 13 developing friendships-social relati

## Description:

this node will code text that discusses how/why participants have developed social relationships and friendships through online discussion

## 14 developing social distance online

## Description:

this node codes text that shows how barriers between people develop and/or exist online

## 15 difficulties of online disc

## Description:

these are specific reasons that online discussion is difficult in itself c.f. with barriers to discussion which deals with the wider issues - eg institutional or social barriers or family life or things like that.

## 16 difficulty with course material

## 17 discipline

## Description:

used to mark passages related to discipline as a learner characteristic

18 discn example - not learning related

Description:

this node codes any text that gives examples or instances of things happening online which are not related to learning

19 distance ed experience

Description:

this node codes text that shows the experience the participant has as a distance ed student

20 education history

21 effect of involvement in online disc

Description:

this node will code text that highlights the effects of being involved or not involved in online discussion

22 effect of previous tech experience

Description:

this node codes text that describes the effect or lack of effect of previous experience with technology on a participant's initial ability/confidence in the online course.

23 engaging online -personal

Description:

this node codes text that shows how there is a personal dimension to engaging online; a personal motivation

24 engaging online - requirement

Description:

this node will code text that provides commentary on the requirement to go online and post

25 example of discussion helping learni

Description:

this node will code text that shows an example of the effect on learning of discussion, where a particular course or particular discussion is mentioned

26 example of lecturer posting

Description:

this node codes text that gives an example of the way lecturers construct their postings

27 expectations of the course

Description:

this node codes text that tells about the expectations students had of the course at the beginning

- 28 extramural
- 29 f2f possibilities

Description:

this node codes text that discusses the ways the online students get together for f2f meetings

- 30 first ten - how I learn

Description:

Node lookup: text coded by the node 'how i learn'

Document finds are spread to enclosing paragraphs. Node finds are spread to enclosing paragraphs.

- 31 first ten - learning

Description:

Result is a node coding all the finds: first ten - learning (n)

Document finds are spread to enclosing paragraphs. Node finds are spread to enclosing paragraphs.

- 32 focus

Description:

used in the section on participants in ch4 related to the type of approach they had to have in the programme i.e. focussed - node arises from a text search for the word 'focus'

- 33 form conveys messages

Description:

this node codes text that tells how messages are not just words on a screen

- 34 furthering learning through discussi

Description:

this node will code text that tells in general terms how it is that online discussion can help students to learn

- 35 going online initially

Description:

this node will code text that tells how people felt about going online in the early stages of their programme

- 36 group\_class interaction diffs

- 37 how groups work

Description:

this node codes text that describes the mechanisms/routines/practices that groups have or use to get work done.

- 38 how i learn
- 39 important learner characteristics
- 40 independence
- 41 initial EDO experience
- 42 interaction - extent

Description:

codes text that indicates the extent (in group or class) of what the student thinks is good interaction

- 43 interaction - subj matter diffs

Description:

this node will code text that discusses the way subject matter has an impact on the extent and/or type of interaction that occurs

and i am now widening this on 20 sep to be a node that codes anything to do with subject matter since i have no other node that seems to relate to subject matter

- 44 interaction - vicarious

Description:

this node codes text that is about vicarious interaction - the readers of messages; why people might only read;

- 45 interaction diffs on-off campus

Description:

this node codes text that describes how interaction differs between on-campus situations and off campus situations

and getting near the end of the first interviews i find that i want to code it for differences that occur between online and f2f interaction when people meet for their little social/study groups

- 46 interaction features

Description:

created this node to account for statements about the nature of interaction ... expect that it will eventually be merged with others (?poss engaging online - requirement), but it seems to stand on its own

- 47 interaction online - not forums
- 48 interaction other than online

Description:

this node codes text that describes or gives reasons for interaction with other students beyond the online environment

- 49 interaction with course material

Description:

this node will code text that relates to the way students use or interact with course material

50 internet use

Description:

describes the benefits and limitations of using the internet, with a focus on the technology as opposed to the social or cognitive aspects

51 interview questions\_new

52 involvement in online discussion

Description:

this node will code text that indicates the extent to which people are involved in online discussion and the reasons they give for that involvement

53 isolation

Description:

this node codes text that illustrates the physical and or mental isolation of being a distance student

54 language styles online

Description:

this node codes text that discusses the nature of language use online, and the choices people make about how to write online (later: and about the way that language use can be seen and has effects) (later still: and where they write it)

55 learning environment

Description:

this node codes text where students talk about the physical environment in which they study

56 learning to talk online

Description:

this node codes text that discusses how people learn to use "appropriate" language online

57 lecturer

Description:

this node codes any text that says anything about the role of the lecturer ... or anything else about lecturers IN GENERAL

58 lecturers role - support

Description:

this node codes text that describes how lecturers can support students online - either with their learning directly or in other ways

59 motivation

## 60 need for interaction

## Description:

this node codes text that shows how the participants feel about their personal need for interaction

and from 20/9 it codes anything else that indicates that participants feel the need to interact ... it might be related to the node 'online addiction' ???

## 61 online - not interaction

## Description:

this node will code text that describes how some online communication need not be interaction

## 62 online addiction

## Description:

this node codes text where participants talk about the pull of the computer and the positive or negative effects this has

## 63 online community differentiation

## Description:

this node codes text that shows how the larger online group is differentiated into small groups

## 64 online disc-difficulties, disputes

## Description:

this node codes text that points out how online discussion is not always agreeable - how disputes can occur and the consequences of them

## 65 online identity

## Description:

this node codes text that describes what is created in the way of an online identity rather than "how". How is coded by "creating personalities"

## 66 online messages - confusing

## Description:

this node codes text that shows how online messages can be confusing at times

## 67 on-off campus differences

## Description:

this node codes text that talks about the difference in personal characteristics between on and off campus students ... and I'm using it to code some general differences as well ... and they might also be coded in the interaction diffs on-off campus node

## 68 outside reactions to distance teache

## Description:

this node codes text where students report on outside reactions or where they mention how they feel people might be thinking

69 pass\_fail

Description:

this node will code text that relates to the discussion of ways to pass (or fail) the course and associated matters

also use this node as a holder for stuff about getting jobs - success with the degree

70 philosophy\_approach to de

71 problems of being a distance student

Description:

this node codes text that tells how distance students face problems that they attribute to distance, or problems that are related to reasons for their choice to become distance students (e.g. d.e. cos of family, but family impose pressures)

72 question for donna

73 same boat

Description:

used to code second interviews

74 sense of community

Description:

21/9 I will put here anything that relates to the way these people view each other, the way they relate to each other, the things they say about each other ... that suggest that they have a bond...

75 signalling interaction needs

Description:

this node codes text that shows how students indicate that they need or expect a response to their messages; how they indicate a need to be involved in interaction

76 speed of responses

Description:

this node will code text that relates to the speed with which responses are made to messages

77 support - not online

Description:

this node codes text that describes and illuminates the other kinds of support - those that are not "online" - for learning or affective purposes

78 support - online

Description:

this node codes text that shows how there is support from students for each other that is manifested through the online discussion/communication

79 t&i

Description:

time and interaction node created just to let me pull together all the refs in the time and interaction memo

80 technology helps learning

81 technology history

Description:

this node will code text that shows/illustrates the history of technology use that a participant has and includes the old node "previous technology experience"

82 technology value

Description:

this node codes text that shows how the technology actually assists or detracts from the learning experience

83 time management

84 typical day

85 value of msgs - learning

Description:

this node codes text that tells about the value that students place on individual messages ... related to the node choosing to read

and later i'm using it to code places where it shows how the online environment helps learning ... although that could relate to "furthering learning through discussion"

86 value of online discussion in de

Description:

this node codes text that are explicit statements about the value of online discussion in distance education contexts; the statements may have qualifiers

the node will also serve to code text that tells about the difference between extramural and edo

87 why reading isn't enough

Description:

this node codes text that specifically explains why students should involve themselves in online discussion and not just be vicarious interactors

88 why you should engage in online\_disc

Description:

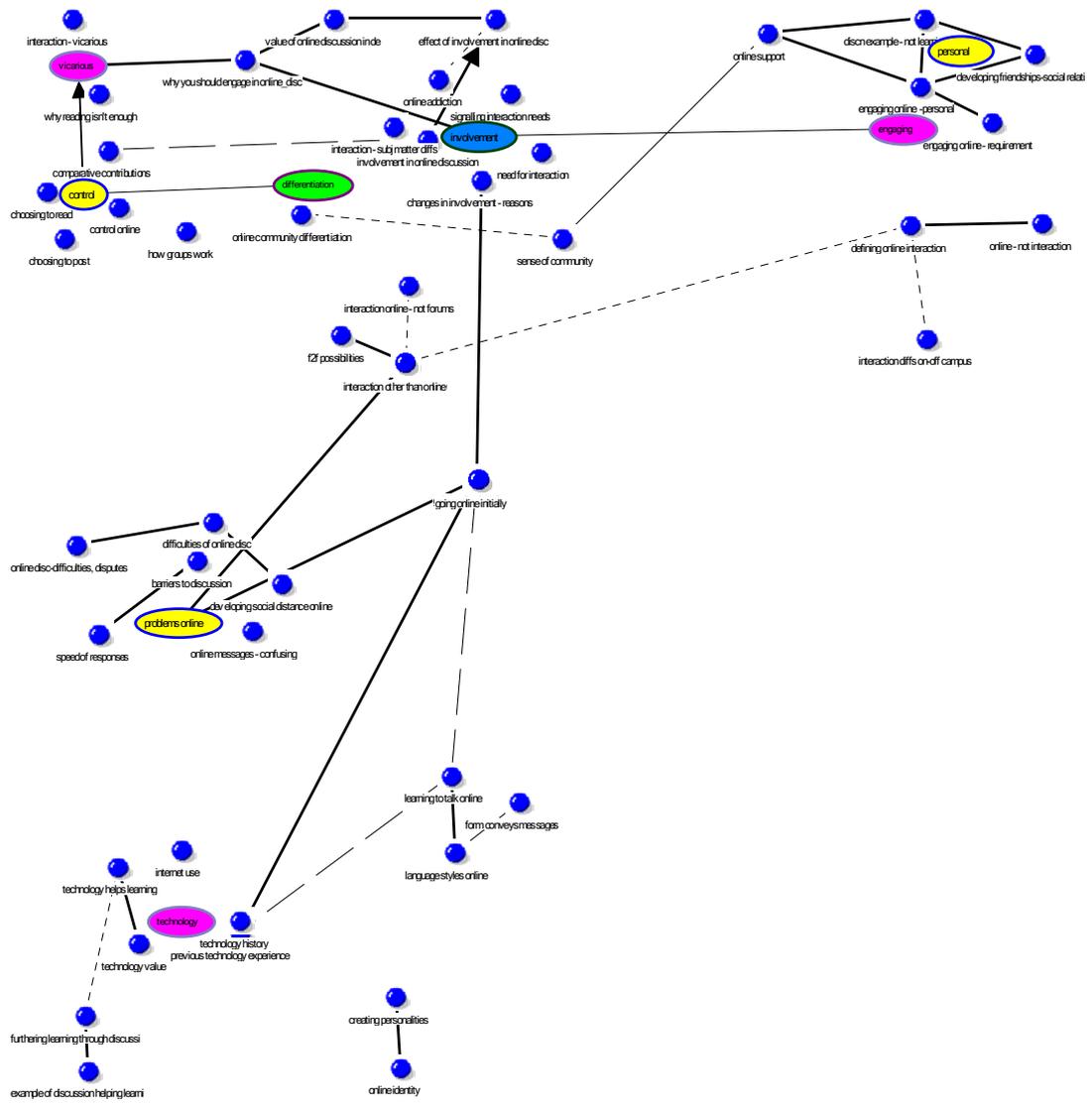
this node codes text where participants describe the "non-coercive" reasons why students should engage in online discussion

89 workload

Description:

this node will code text that describes the workload people say they have, or which alludes to the extent of that workload

### F Initial Node Diagram



## Vita – William G. Anderson

### Current position:

Senior Lecturer, Department of Learning and Teaching, Massey University, New Zealand.

### Awards:

1997 Distance Education Association of New Zealand (DEANZ) Award

2000-2001 Massey University College of Education Pro Vice-Chancellor's International Doctoral Fellowship.

### Recent Publications:

Moore, M. G. & **Anderson, W. G.** (2003). *Handbook of distance education*. Mahwah, NJ: Lawrence Erlbaum Associates.

**Anderson, B.** & Simpson, M.G. (2002). Distance education in New Zealand: A case study from Massey University. In V. V. Reddy & M. Srivastava (Eds.), *Globalisation of open and distance learning: Challenges in the new millenium*. New Delhi: Kogan Page.

**Anderson B.** & Simpson, M. (1998). Interaction at a distance in teacher education: A social affair. *Computers in New Zealand Schools*, 10(1), 17 – 23

### Recent Conference Papers/Presentations

**Anderson, B.** & Simpson, M. (2002, August). Five years on: Institutional lessons learnt in the distance delivery of a primary pre-service teacher education programme. Paper presented at the Commonwealth of Learning Forum on Open and Distance Learning, Durban, South Africa.

Simpson, M., & **Anderson, B.** (2002, June). Distance education and teacher education: Principles for implementation and assurance. Invited presentation to the New Zealand Teachers Council Forum on Flexible Learning and Teacher Education, Wellington.

**Anderson, B.** (2002, April). Interaction in distance education. Paper presented at the Annual Conference of the Distance Education Association of New Zealand, Wellington,

**Anderson, B.** & Simpson, M. G. (2001, November). Distance delivered teacher education in New Zealand Paper presented at the 9<sup>th</sup> Annual National Conference of the American Association for Collegiate Independent Study, Athens, OH.

**Anderson, B.** & Simpson, M.G. (2000, May). A case study in online teacher education. Peer-reviewed case-study presented at the International E-Workshop. Herriott-Watt University, Scotland.

Simpson, M. & **Anderson, B.** (2000, April). Online interaction in a distance teacher education programme. Paper presented at the Eighth Annual Teaching and Learning with Technology Symposium. Pennsylvania State University, State College, PA.

Simpson, M. & **Anderson, B.** (2000, March) Questions from practice, questions for practice. Paper presented at the Eastern Regional Adult Education Research Conference. Pennsylvania State University, State College, PA.

**Anderson B.** (1998, October). Development of a learning resource in New Zealand. Paper presented at the UNESCO Asia and the Pacific Seminar on Educational Technology. Tokyo, Japan. October, 1998

**Anderson, B.** (1998, June). Developing interaction online. Paper presented at the Annual Conference of the Distance Education Association of New Zealand, Rotorua.

**Anderson B.** & Simpson, M. (1998, June). Challenges and issues in developing online courses. Workshop presented at the Annual Conference of the Distance Education Association of New Zealand, Rotorua.