INSIDE ON-LINE:

INTERACTION AND COMMUNITY IN GRADUATE STUDENTS' USE OF

COMPUTER-MEDIATED COMMUNICATION

by

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Abstract

A qualitative investigation into language education students' use of computer-mediated communication, this study reveals how the diversity, support and resources constructed through students on-line dialogue served to scaffold students' language and content learning. The study focuses on student interaction on an asynchronous bulletin board used as an adjunct to a graduate seminar. The radicals of persistent conversation (Bregman & Haythornthwaite, 2001) interacted with elements of the seminar design to facilitate non-native speakers' entry into the dialogue, while simultaneously affording all students with opportunities for exercising agency in their own learning. Relationships between native and nonnative speakers of English were altered by nonnative speakers' ability to communicate their competence, and participants developed a strong identity as a community. Diversity and community evolved as valuable contributors to individual learning.

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To Dr. Bonny Norton who set the bar, to Dr. Margaret Early who showed

me how to hit it, to Dr. Stephen Carey who gave me the space to do it, and

especially to my classmates within whom none of the rest would have

mattered.

CHAPTER ONE: INTRODUCTION

1.1. General Introduction

For decades, language educators have been debating whether or not computers can make a useful contribution to language education (Chapelle, 2001). Themes related to the role of technology repeat themselves in current literature (i.e. Cummins, 2000; Murray 2000), and in listserves dedicated to the TESOL profession (i.e. TESLCA-L@CUNYVM.CUNY.EDU; papyrus-news@UCI.EDU; TESL-L@CUNYVM.CUNY.EDU; eflis-l@lyris.tesol.org), existing alongside debates regarding the digital divide, the privileging of native English speakers, and impact of technology on existing genres of English. However, at the same time that these discussions are taking place, the use of computers in second language education has entered the profession's mainstream. More and more language educators have used some form of computer-assisted language learning (CALL) in their classrooms, whether in the form of testing and assessment, lab-based tasks, or projects utilizing the communicative potential of the Internet.

Perhaps because of the rate of change associated with information technology, and particularly the Internet, it is difficult for researchers to keep pace with the possibilities offered by these technologies. Researchers and theorists have consistently referenced the lag between the potential and actual in applications and studies of technology in language learning (see Last, 1992; Cummins, 2000; Chapelle, 2001). One of the areas of emerging interest is in networked-based language teaching (NBLT), a term that Kern and Warschauer use to distinguish a specific branch of technology-mediated instruction from traditional CALL research (Kern & Warschauer, 2000). Network-based language teaching encompasses instruction using any of a wide variety of computer-mediated communication (CMC),

including e-mail, chat, electronic bulletin boards and Internet Relay Chat. The models used for this form of instruction vary widely. Recent research includes examinations of the use of an on-line bulletin board in a post-secondary language education course (Kamhi-Stein, 2000), Hungarian students use of CMC to access native-speakers for discussions of literature (Meskill & Ranglova, 2000), students' construction of web pages (Orsini-Jones, 1999; Warschauer, 2000c), the negotiation of meaning by students using chat (Pellettieri, 2000) and cross-cultural e-mail exchanges (Cummins & Sayers, 1995).

Research into the use of on-line bulletin boards in language education graduate seminars and in language instruction has also been on-going at the University of British Columbia (Carey, 1999; Beckett, Luo & Carey, 2000). Researchers have investigated students' receptivity to CMC classroom adjuncts, as well as attempted to find accurate measurements of language acquisition tied to the bulletin board's use. This research has included discussions as to potential role of technology in teacher development and language education in EFL settings (Carey, 2000; Carey, 1999b; Carey, 1998). Although the research is an extension of these investigations, it examines graduate students' use of the bulletin board through an alternative lens. Working from a sociocultural framework, the focus of this research will be to develop a thick and rich description of the activities of one group of students in an on-line environment. By investigating the complex set of relationships between the students, and the students and the learning environment, the researcher will seek to identify the major and minor themes that may inform future practitioners' use of CMC-mediated learning environments.

1.2. Objective and Research Questions

Wells has stated "Increasingly, efforts are being made to envision alternative forms of education...., in many cases through greater use of the technologies that allow virtual as opposed to face-to-face communication. Valuable though these efforts are, however, they are unlikely to be successful unless they take full account of the history of the societies and institutions they are intended to transform and of the individuals – their identities, dispositions, and aspirations – whose participation will necessarily be involved in bringing about the desired changes." (2000, pg. 60) This study will attempt to examine and provide insights into the complexity of students' on-line interaction that occurred while using a bulletin board adjunct to a graduate research and methodologies seminar. Particular attention is paid to the effect of the on-line environment on student interaction.

The research questions that will guide this investigation are as follows:

1. What is the nature of the relationship between the students, and the students and technology? How does the learning environment shape and become shaped by the students' on-line activity?

2. How does the evolving on-line environment influence students' learning?

3. Specifically, how does the evolving environment assist or detract from non-native speakers' attempts to develop their English language skills?

1.3. Importance of the Study

The continuing development of the Internet provides significant opportunities for the development of on-line environments and communicative learning tasks that transcend time and geography (Warschauer, 2000a; Warschauer & Kern, 2000). Described by some as '"anytime, anywhere, any subject" education (White, 2000), learners may access materials and expertise either for credit or non-credit (Goldberg, 2001; Weiner, 2001; Zajc, 2001), as part of a formal program or through individual effort. However, in the rush by the public and private sector to capitalize on potential opportunities and cost-savings, action has often preceded research.

Technological change has a profound impact on education, just as it does for other sectors of society. Not the least is the impact on what and how teachers are expected to teach. Educators and researchers have called upon post-secondary institutions to recognize the need to prepare teachers to analyze and use technology in their classrooms. These same groups challenge the idea that teachers will automatically transfer their existing skills to computer environments, given the complexity of monitoring learning activities in a student-centered instructional setting (Wetzel & Chisholm, 1998). Technology, they argue, should not be limited to stand-alone courses, but woven into the delivery of post-secondary education instruction, thus modeling for future teachers how technology can support their classroom activities. If teachers demonstrate expertise by acting upon rather than understanding concepts, as argued by Au (1990), then developing teachers' expertise in the classroom use of computer-mediated communication (CMC) requires participation in activities conducted in on-line spaces. Research into the use of CMC in the development of

language educators, often a linguistically and culturally diverse student body, is still limited (for examples, see Boyd & Theide, 2000; Kamhi-Stein, 2000).

However, this is only one of the reasons that students in the field of language education need to understand and be aware of the changing uses of technology. Although the public press has recently emphasized the lack of clear-cut benefits in using computers in elementary and secondary education, the reality is that computers are becoming a part of the mainstream education and training world (see "Alliance," 2000; Dean, 2001; Goldberg, 2001; "Learning"; "Oxford," 2001). "Lifelong learning" is a cross-disciplinary buzzword and teachers and researchers alike will be expected to manage and upgrade their skills and knowledge as they develop their careers. Increasingly, on-line learning plays an important role in the portfolio of organizations' training offerings (i.e. "GM," 2001). As teachers and educational researchers, individuals are expected to use computers not only in their classrooms, but to use technology in their own continuing professional development. Post-secondary institutions can play a valuable role in fostering an individual's on-line learning skills, and in providing students with the background to critically evaluate the quality of on-line program offerings.

If our current age is accurately represented as the knowledge age or economy, than continuing access to education may have a direct impact on an individual's and a community's physical, emotional and economic well-being. The ability to learn effectively in an on-line environment allows individuals access to learning opportunities that would otherwise be unavailable to them for reasons of time and distance. Whether the educational provider is across town or across the ocean, the ability to access education at a place of one's time and choosing opens the world to a quality of education that might otherwise not be

possible. As post-secondary institutions prepare their students to use technology as lifelong learners, they are helping them to effectively access and utilize the best resources available.

However, all of the above issues apply to educators in general. What are the specific issues for those in language education, both as learners and facilitators of others' learning? While distance education is not solely the domain of English-speaking educational institutions (see Kishovsky, 2001), English remains the dominant language of on-line educational providers. Already, graduate business schools are having students interact on-line months before beginning their programs. In addition to the use of CMC as a classroom adjunct, universities are developing joint programs with international partners, and using technology to deliver lectures and materials (Leonhardt, 2000; "Oxford," 2001). English is the dominant language of professional journals (Flowerdew, 2001), and professional conferences, conducted in English, are supported by extensive and sometimes interactive on-line resources. If non-native speakers are to fully take advantage of such programs, we need to understand how these environments facilitate or impede their learning. Educators in the field of language education can play a valuable service to educators and trainers across disciplines by creating understandings as to how non-native speakers are positioned by the factors that shape and influence on-line learning environments.

Some of the existing language education research on on-line learning environments focuses on the performance of non-native speakers in learning environments populated by both non-native and native speakers of English (Kamhi-Stein, 2000; Davis & Thiede, 2000), but most focuses on bi-directional language learners (see Cummins & Sayers, 1995) or on the interactions of groups of non-native speakers seeking to develop their L2 skills (i.e. Pellettieri, 2000; Warschauer, 2000c). However, with the increasing internationalism of

education at all levels of learning, there is a need to deepen our understanding of the interplay between native and non-native speakers in learning environments, to distinguish between the common and dissimilar understandings and reactions of native and non-native speakers in CMC-mediated spaces, and to provide the educational practitioner with understandings that can assist in facilitating the development of healthy on-line learning environments. While researchers have begun to examine the demands placed on post-secondary ESL students in academic environments (see for example Leki, 2001; Morita, 2000; Ferris, 1998; Leki & Carson, 1998; Ferris & Tagg, 1996a; Ferris & Tagg, 1996b; Leki & Carson, 1994), both in the form of large-scale surveys and ethnographic studies, on-line student interaction is a new world for language educators.

1.4. Personal Perspective

It is rather unsettling for me, as someone who has proclaimed herself a Luddite for twenty years, to be viewed as an advocate for anything that plugs in or is powered by a motor, and especially for something as technologically complex as a networked computer. However, "those machines", as I tend to refer to them, are now capable of doing things that cannot be effectively accomplished in any other way. They have a potential for connecting and sharing that is still little understood, and their impact will likely be understood only with the benefit of hindsight. In a world of small, unintended consequences, "those machines" played an important role in my decision to leave business and consulting, and to build a career in language education.

Although I used VAX notes during university summer employment, and later had a terminal at my desk to access employee files and succession plans, I did not send my first e-mail until 1996. It was sent from what was then the only Internet cafe in Seoul, a distance of

one and a half hours from my home, to a friend whom we fondly consider a hack, and whose office at home and work has always been on the vanguard of technology. He is also, however, an absolute failure as a correspondent, and his lack of timely replies led me quickly to drop any notion of using e-mail to stay connected. Almost a year and a half later, the teacher with whom I shared an apartment bought a computer and subscribed to a dial-up Internet connection. I saw no value in attempting to start corresponding again, although I did enjoy reading the "Globe and Mail" on Saturday evenings when she went out clubbing.

Finding English language publications for teaching and/or pleasure was a constant quest in Pundang, South Korea. When I initially arrived in South Korea, Seoul had three bookstores with English language publications and teaching materials. Living in a bedroom community in a neighbouring province, I could only visit these stores on Sunday, and as each had a different and ever-changing schedule for Sunday openings, accessing materials often felt like a game of hide and seek. Finding materials that were appropriate for children and teenagers was particularly challenging. Although there were many textbook offerings for young beginning learners, there were few if any that went beyond the level of simple past tense. Those that did rarely dealt with anything of relevance or interest to someone under the age of eighteen. The few storybooks available were typically either graded readers of classics like "Robin Hood" or collections for native speakers, with vocabulary and cultural content completely unintelligible to a foreign language student, even if their content had been of interest. There were no libraries. The selection improved somewhat over the twenty-six months I was there; however, appropriate print and video materials continued to be in short supply. I did not use the Internet to locate resources. It never occurred to me. No one that I knew had a printer, and neither the school nor my students were connected to the Internet.

My first encounter with technology in an educational setting came when I began work as a management consultant upon returning to Canada. The firm had recently completed a needs analysis related to rural community leadership development for an arms-length government agency. The pilot training program, which received funding approval in December and which had to be largely completed by March, included three delivery models. One model was an Internet-supported program. Whether I knew anything or not, I had responsibility for sourcing a subcontractor for technical support, assisting in the design of the on-line portion of the program, and acting as "coach" for those participants.

The participants in the Internet-supported program came primarily from smaller communities, many under one thousand people. Some participated from their homes, connected to the Internet through phone lines of copper cable. Others drove in to the Village or Rural Municipality offices to use a computer that connected to the Internet through a fiber optic telephone line. Living hundreds of kilometres from Saskatchewan's two university cities or a community college, they participated because there was no other cost-effective means of accessing the same quality of resources. None of them had used the Internet for studying before, and most had no idea what a modem was. At the end of the program, although they clearly stated that face-to-face learning environments were preferable, their response exceeded any of the sponsors' or organizers' expectations. Their discussions on-line were sometimes theoretical, sometimes practical, sometimes reflective. They attempted to find ways to support each other in their individual community projects while at the same time challenging each other's assumptions about the meaning of leadership in a rural community. At the program's completion, they listed concrete examples of actions they had taken as a result of the program, a program that they could not have participated in had it

been delivered any other way. The overwhelming majority talked about their initial skepticism and fear, and the benefits they had drawn from participating.

As I facilitated and worked with these people, I began to think about the possibilities these technologies offered for English language instruction in countries such as South Korea, that have such obvious imbalances in the supply and demand for quality language instruction. As I continued in my work, which included projects such as evaluating a pilot training program utilizing webcasting, investigating the potential for the provision of on-line financial planning tools for future post-secondary students, and the fostering of learning communities within a joint federal-provincial government public information centre, my perceptions of the potential of these media grew. The Internet as content, and the Internet as learning space both seemed suited to address the needs I had experienced as a language educator.

I would be remiss if I did not comment on the emotional impact of watching relationships form on-line. Individuals who met only briefly at the onset of the program patrolled the on-line chats more vigilantly than me, ensuring that the needs and questions of their fellow participants were met with considered responses, revealing potentially risky points-of-view and supporting their exploration, and offering to provide further support off-line. Their sense of responsibility to each other was something we hadn't anticipated. If on-line learning spaces facilitated learners helping learners, there seemed to be additional benefits for non-native speakers beyond the collapsing of time and space.

CHAPTER TWO: CONCEPTUAL FRAMEWORK

One of the great difficulties in any discussion about technology or computer-mediated communication (CMC) is determining exactly what is being talked about. Not only is there a vast array of hardware and software with widely differing capabilities, there are the very real differences in how humans conceive of and use these technologies for their own purposes. Thus, the conceptual framework begins with an exploration with some of the dominant metaphors that cut across disciplines, and locates the position of this researcher's own understanding of technology.

The second section deals more specifically with the research history and traditions that provide the foundation for the current study. It touches upon more general theories of learning and language learning, as well as research specifically related to the use of CMC for learning.

2.1 The Problem of Metaphors

Education has always adapted technology for its own purposes. The pencil and the printing press, the paintbrush and the camera - each are examples of technologies that are integral to our mental models of the modern classroom. They are both how and what we learn. Inside or outside the boundaries of four walls, technology is also playing multiple roles in present day learning.

Our still-developing understandings of technology and human interaction with technology are often expressed using metaphors. Embedded in each metaphor is a complex set of assumptions as to how we shape and are shaped by media, each metaphor positioning the individual and technology in a different manner. Technology becomes something that we use, connect with, or inhabit; given meaning by the user, or sculpting and giving meaning and identity to the user. Rarely does any one metaphor capture all the facets and potential of the

application under discussion. Despite the sometimes mathematical, binary portrayals of machine and man (see Licklider, 1968/1999; Mayer, 1999), the reality is often far more nuanced and co-mingled. The limitations created by inadequate metaphors concern writers who live within the world that creates and shapes systems and interfaces, and who see computer programs and systems as more akin to clay or language than to machines (Finneman, 1997/1999; Kay, 1984/1999). As words shape ideas, metaphors shape the technological alternatives explored by language educators for use with their students and in their classrooms. Tool, transportation, space, community, ecology – each has been explored in writing on communication and learning.

Much of the research on CALL and education technology positions technology as a tool. The predominance of this perspective becomes readily apparent when one examines Carol Chapelle's recent book on computers and second language acquisition (see Chapelle, 2001). Whereas early creators of systems and software envisioned worlds of people and information connected through technology, the historical roots of CALL are firmly in the man-machine dichotomy. Testing, concordancing and computer/on-line exercises, such as those using STORYBOARD© and Hot Potatoes™ software, take advantage of the computational benefits delivered by technology, but remain within the realm of human-machine interaction. Chapelle's chapter on future directions for research into computer-assisted second language acquisition points to linear extensions of historical perspectives. Discussions of interactivity focus on a test-taker's ability to select from a database of appropriate materials (pgs. 164-165), and on the ability to assess and test hypotheses related to learning conditions (pg. 160). Research on the impact of computer-mediated communication on textual forms sometimes explicitly centres on the hypothesis that the machine shapes the message (Murray, 2000; Biesenbach-Lucas & Weasonforth, 2001). One of the limitations of the metaphor "tool" is that it naturally associates

itself with the concept of task, implicitly limiting the focus to a narrow range of possibilities and applications (Nardi and O'Day, 1999).

Researchers and innovators outside the field of education can be seen using the metaphor of "tool" in a way that more closely resembles the "tool" as represented by Vygotsky (Kay, 1984/1999; Kay & Goldberg, 1977/1999). The code, the language of the computer, is discussed as paralleling the development of written language codes from hieroglyphics to contemporary written texts. Their interpretation of technology as a tool characterizes it as a mediational artifact that carries forward sociocultural knowledge and understandings. However, there are frustratingly few articles in second language education that explore technology from this perspective.

Images and analogies of Internet-communication as transportation are common in mainstream media (for example, Bush, 1945/1999). We "surf" the Web. Microsoft asks us "Where do you want to go today?" The popular press is replete with references to the "information highway." A quick search with these keywords using the most basic search engine will yield literally tens of thousands of hits. Here the Internet is roadway and content, information the commodity being shipped down fiber optic cable much as trains, trucks and ships haul goods across countries and continents. The grid of the Internet follows the grid of the roads and telephone lines that have served to link us over the last century (Carey, 1989; Jones, 1997). The user is the purchaser, the consumer, the target market. Information on the information highway is transactional, bought, sold, traded and swapped. This Internet focuses on getting, not sharing.

The metaphor of the Internet as transportation segues neatly into the metaphor of the Internet as a space. Technology has been conceived as offering alternatives to our immediate

physical vicinity prior to the use of the Internet. Railroads, telegraphs, steamers and television,. among others, conceptually changed our ideas of place, distance and time (Carey, 1989; Jones, 1997). Variously in and out of fashion with communication and media theorists, Marshal McLuhan coined the term "global village" in 1964, furthering the discussion of the ability of technologies to collapse time and space (1964). Each successive generation has marveled at the increased immediacy with which they can reach people at a distance, whatever their personal conception of distance might be. Lack of access to communication leaves us feeling "closed in", "isolated", and shut off from the outside world, all ideas associated at least as much with space as with information (Jones, 1997). Although initially interested in the possibilities offered by the "tool" of the Internet in language education, Warschauer now believes "the Internet is an important social environment, rather than a tool or thing" (Warschauer, in press; Warschauer, 1999).

The Internet as space or social environment underlies research on the use of e-mail and the Internet to foster intercultural communication and understanding. The information exchanged within these spaces is not purely transactional. Information is shared rather than traded or bought. The potential of the Internet to facilitate greater cultural understanding is demonstrated by cross-border writing programs between students in Maine and Québec, the impact of postings on the I*EARN learning network from Croatian children inside a refugee camp, and attempts to address interethnic prejudice in major U.S. urban communities (Cummins & Sayers, 1995).

Highways and freeways are often characterized as having a negative impact on physical communities. Witness the general concern of residents and community associations to changes in traffic routing and freeway construction. However, the converse view is frequently asserted

when discussing the information highway (Jones, 1999). Although there is a segment of the intellectual community that worries that these new highways will have a corrosive effect similar to that perceived to result from their historical antecedents, readers are more likely to encounter descriptions of the information highway as a creator of community.

The metaphor of community implies more than sharing or electronic connections. These are communities of common interest (Licklider & Taylor, 1968/1999). The term "hyperworld" (Nelson 1982/1999), a description of a place for a home or coming together of minds, especially minds heretofore limited by the walls of a school, is one terminology coined to describe this richer world of community. These communities are constituted in, not by, electronic networks. They are built using interaction and narrative, which move participants across time and through social space (Jones, 1998b). How each community is used affects how it will be used in the future. Members are constantly co-creating the community in which they exist, their words becoming its artifacts and mediators of future thought.

Implicit in the metaphor of community is a sense of the Internet as a physically located space, in which individuals choose their communities, much as settlers of the Canadian and American west chose where to locate themselves and their families (see Jones, 1999; Stone, 1991/1999). The digital is made material. Researchers of CMC-supported communities note the use of language to create mental images of the physical, both animate and inanimate, and sensations that are sensual as well as psychological (Stone, 1991/1999). They focus on the use of emoticons, the combination of slashes and dashes used to attach emotion to the typed text, which negate the barriers assumed to be created by a lack of visual clues. Since the early 1980's, some discussion groups have used cartoon figures or game simulation software to create a visual dimension to their electronic being (Stone 1991/1999).

Educational researchers have not imposed the concept of community on their observations of formal on-line learning. They have taken care to first confirm that community exists (Haythornthwaite, Kazmer & Robins; 2000; Poole, 2000; Korenman & Wyatt, 1996), and then to identify markers of community within the protocols (Sengupta, 2001, Haythornthwaite, Kazmer & Robins; 2000; Baron, 1998; Korenman & Wyatt, 1996). However, confirmation of its existence does not eliminate the problems that researchers encounter when trying to understand what "community" means.

Baym comments that the use of the community metaphor is often more problematic for researchers and theorists than it is for the general public (1998). Whereas the public implicitly understands the on-line connections to be similar to their experiences with community in other realms, researchers react with longstanding concerns as to the boundaries of community, their ability both to contain and exclude, and the difficulties in defining the span, reach and depth of the community that is being referenced. Fernback speaks of community as "...infinitely complex and amorphous in academic discourse. It has descriptive, normative, and ideological connotations...the term community encompasses both material and symbolic dimensions" (1997). Even within the physical world, there are schisms between those who view community as physically situated, and those who emphasize concepts such as culture, connections, power and control (Jones, 1999; Wellman, 1999). The relationships and social networks available over the Internet closely parallel the community experiences of many individuals in their physical world; that is, relationships are "intermittent, specialized and varying in strength" (Wellman & Gulia, 1999, pg. 16). More complex understandings of community mitigate the surface differences between the physical and the on-line.

One of the questions that continues to intrigue researchers of on-line communities is the degree and nature of the commitment of members to their on-line communities (Jones, 1998b, 1999; Herring, 1996/1999; Wellman, 1999; Wellman & Gulia, 1999). Why do people experience their interactions as community (Baym, 1998)? What happens if one no longer agrees with the "minds" that are cohabitating in the same space? Do individuals exhibit loyalty to their communities and a willingness to work through issues and/or problems within the community structure, or do they exit to find another "community" more to their individual preferences? Jones cautions that interaction is not in itself enough to prove communication, much less community (1999, pg.236; also Wellman, Haase, Witte & Hampton, 2001). Community is evidenced not simply by how it is defined, but by how it is lived. Little research exists in the education field about the choices made by individuals to do more than interact, or about the decisions made to opt in or out of the on-line classroom community. Interpretations substitute for participants' statements of intention or belief (Wellman & Gulia, 1999; Haythornthwaite, 2000).

However, for researchers of the on-line world, community continues to be a dominant metaphor. Baym, whose work includes ethnographic studies of Usenets such as r.a.t.s., sees on-line communities as "shaped by a range of preexisting structures, including external contexts, temporal structure, system infrastructure, group purposes, and participant characteristics." (1998, pg. 38) It is evidenced by group specific forms of expression, identity, relationships and normative conventions.

Conceptualizations of the on-line world as community are often accompanied by discussions of identity, and how individuals choose to represent themselves within the communities that have developed. If individuals choose to associate with others like themselves

in on-line communities, then how do individuals develop the self-definitions used to select from the range of available communities? (Baym, 1998; Jones, 1999) Research into public Usenet groups and on-line forums has focused on individuals' ability to choose genders, sexual orientations, and ethnicities other than those associated with their physical selves in order to participate in on-line communities whose loci is centered on those aspects of identity (Stone, 1991/1999; Herring, 1999). Participants may assume multiple identities in a single "space," with or without the tacit knowledge of other community members. The Internet gives the ability to transcend time and space, but it also fractures time and space, allowing us outside the limitations of our immediate physical bodies to communicate with others existing in "real" times and spaces very different from our own (Jones, 1997). The ability to select a time and space in which to exist further multiplies the range of identities available to the individual. Worlds converge as selves fracture.

This reality of these divergent identities sits in marked contrast to commentaries about the continuing convergence in our society, whether the discussion is about the on-going convergence of media and communication, or the homogenization of global cultures. At the same time that distance shrinks, and tastes in pop music, heel heights, and fast food align, individuals within cultures may find that ties usually associated with time and place are loosened, and that the individual has more opportunity to assert their individuals tastes and preferences. (Jones, 1997) The ability to choose communities creates the potential to choose identities, and so divergence and convergence operate on parallel if not intersecting tracks within the world of on-line communication. The concept of convergence has itself begun to be problematized, with theorists exploring technological, economic, social, cultural and global dimensions of convergence (Jenkins, 2001).

The final metaphor is of technology as information ecology. Perhaps the least prominent of the metaphors, it has been used by individuals such as Nardi and O'Day both to escape the limitations and problems associated with previous metaphors, and to focus users on worlds centered on information (1999). For these researchers, "ecology" de-emphasizes homogeneity, and emphasizes evolution and systemic interdependence. Although the metaphor fits neatly with current trends towards organic analogies, it is subject to many of the same boundary issues that trouble the metaphor of community. More importantly, it is not how individuals who engage in on-line interaction typically perceive themselves. For these reasons, I will continue to focus on the metaphor of community as representative of the relationships that form within a bulletin board adjunct.

Each of the metaphors has relevance within education, and within language education, but in selecting their metaphor, educators need to be aware that their choice of words may shape their technological choices, and their presentation of the technology to their students. As Kay says "The most treacherous metaphors are the ones that seem to work for a time, because they can keep more powerful insights from bubbling up." (1984/1999, p. 131) Perhaps most important is how conceptions of agency implicitly are communicated by task and discussion.

Technology is often ascribed a meaning and significance far beyond its basic functional capabilities. Researchers of communication and technology such as Steven C. Jones and James Carey point to the tendency of prophecy to accompany new technologies, including prophecy regarding the potential of each new communication medium for educational purposes (Jones, 1999; Nardi & O'Day, 1999; Wellman & Gulia, 1999; Fisher & Wright, 2001). Societal hopes and dreams for what might be are poured into the vessel of technology. Jones quotes Carey and his collaborator John Quirk as arguing "electrical techniques (are hailed) as the motive force of

desired social change, the key to the re-creation of a humane community, the means for returning to a cherished naturalistic bliss" (1998, pg. xii). Societal hopes for a colourless, raceless, egalitarian society that provides equal access to resources for all of society's members, a place for our ageless search for community and belonging, are superimposed onto technology (Baym, 1998; Postmes, Spears & Lea, 1998). Others view on-line communities as evidence of the ominous "atomization" of our modern society. Baym reviews the concerns associated with this perspective related to homogenous affiliations, distancing from others in the immediate physical community, and with different values and beliefs (1998).

The polarized discussions of technology as the creator or destroyer of common good can obscure the existence of human agency. Regardless of the metaphor selected, these discussions imply that technology happens to people, not that people happen to technology. The role of shaper and shaped are transmuted to give the machine the agency, and the individual becomes the artifact to be acted upon. Such discussions can evoke a sense of fatalism and inevitability among a society's members, not just a lack of desire to shape a future but rather an inability to shape a future. However, active resistance to such a positioning of the user began with discussions as to the potential of computer-mediated communication (Englebart 1962/1999; Kay & Goldberg, 1977/1999; Sproull & Kiesler, 1991; Winner, 1996/1999; Nardi & O'Day, 1999). Returning agency to the individual, Jones argues "That (social construction of) reality is not constituted *by* the networks CMC users use; it is constituted *in* the networks" (Jones, 1999, pg. 221, italics in original). Arguments are made that the medium becomes what the user makes it to be, whether it is a child's drawing board, a musical instrument, an audio system or a book. Expressing the frustration of many who see their work used to confine and limit, rather than to scaffold and create, Kay offered the following comments for examining the technology in our

world: "To understand clay is not to understand the pot. What a pot is all about can be appreciated better by understanding the creators and users of the pot and their need both to inform the material with meaning and to extract meaning from the form." (1984/1999 p.129-130) Shape and meaning are created by the agency of the user.

One of the interesting indicators of the conferring of agency to on-line community members is the subtle shifting of being of a community to the community being of its members. On-line community members describe community as being theirs rather than something of which they are a member (Jones, 1997). The very existence of the community, much less its identity, is assumed to be in the control of individual members. As individuals control their own individual scripts, they seem also to perceive that they control of the script of the community. Machines create neither the imperative for community, nor the community itself. It is the users who have sought out or attempted to create these forms of networks on-line (Jones, 1998b).

Yet writing in the field of education fails to emphasize the potential that computers offer for learners to exhibit agency. Indeed, control is often an underlying theme for its uses. This theme of control takes many forms. In organizational contexts, CMC is conceived of as a tool for controlling time and space in a way that allows the individual unlimited access to data and to other individuals (Sproull & Kiesler, 1991). The hypothesized outcome of such access is a profound change in the nature of the relationships within an organization, and a relative empowering of those below the senior levels of the organization. However, control can also be construed as teacher control over the learning environment. In books, listserves and day-to-day conversation, it is not unusual to hear discussions about control over access, content and attention (for examples, see TESLCA-L@CUNYVM.CUNY.EDU archives; Orsini-Jones, 1999; Pellettieri, 2000). Software and equipment vendors boast of their systems' ability to allow

teacher monitoring of student computers and to blackout student screens "to direct student attention," key and prominent selling features of their equipment (see for example http://lanschool.com/). The emphasis of control over other features associated with usability, creativity and knowledge-building says as much about potential purchasers as it does about the equipment supplier.

The focus of this thesis is not control, but the ways in which learners use technology to further their own learning. This examination is not intended to create a template or rigid structure for a process that can be duplicated across classrooms. Rather, it attempts to represent the complexity of students' use of technology and their own agency in using the medium for content and language learning. No metaphor captures every aspect of what it attempts to represent, but the metaphor for technology used in this thesis must allow for this inherent complexity. Jones has argued "CMC...not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space. It is more than the context within which social relations occur (although it is that, too) for it is commented on and imaginatively constructed by symbolic processes initiated and maintained by individuals and groups." (Jones, 1998b, p.12) It is this understanding of computer-mediated communication that guides the work contained in this thesis.

2.2 Learning Spaces

If we believe that we continue to learn throughout our lives, than each space we inhabit, physically, figuratively or mentally, has the potential to be a place of learning. Imagery and metaphors, such as those described in the previous section, are one method of capturing the qualities of when and where we learn. Each of the following notions also centers on a notion of

learning spaces: the mindspace of the zone of proximal development, CMC-mediated spaces, and the social space of community.

2.2.1 Learning Language

The simplest questions are often the most difficult to answer. How do we learn language? What are the stages, processes and dimensions by which we acquire the ability to build and share understanding? For one group of theorists, the beginnings of an answer are found in the works of Vygotsky. In his observations and experiments with children, Vygotsky found much to support the primacy of language in how we understand and develop mastery of our world (Vygotsky, 1978). As he watched children attempt to manipulate simple objects such as a stool and a stick to achieve a desired objective, he recognized that the child was using language to plan, organize, control and manage their own behaviours. Management and mastery of ideas, then, is also gained by mastering the language in which those ideas are expressed.

Language is more than a simple representation of the present. Language is a carrier of ideas and concepts, the cerebral tools or signs that carry within themselves a society's intellectual histories in the same way that physical objects carry the histories of the technologies and ideas that have given them shape (Lee and Smagorinsky, 2000; Wells, 2000; Cole, 1990; Vygotsky, 1978). Language, the vehicle of these common histories, "ensures that linguistically created meanings are shared meanings, social meanings" (Tudge, 1990, pg. 157). Words and discourse are the tools used to share previously held understandings, and are given newly shared meanings through joint activity (Lee & Smagorinsky, 2000; Gallamore & Tharp, 1990). The worlds of language and ideas are inextricably intertwined, and gaining entry to a language gives simultaneous entry to the world of ideas and meaning systems that the language contains.

Language is not only a representation of what is, but also of what might be. It is system we use to explore possibilities, to hypothesize and to create alternatives. "The more complex the action demanded by the situation and the less direct its solution, the greater the importance played by speech in the operation as a whole." (Vygotsky, 1978, pg. 25-26) The process of organizing our thoughts is also the process of choosing how to represent them, and in selecting the language to represent thought, the language itself shapes and forms the idea, affecting both how we understand the idea and how others in the dialogue will come to understand it. In putting words to our thoughts, we discover our understandings and misunderstandings, creating further opportunities for exploration (Au, 1990). The exploration of the possibilities of representation is also the explorations of the possibility of the ideas, the exploration made manifest in the language that is used.

John-Steiner and Souberman, in their "Afterword", point out that these descriptions of learning position the learner as an active participant in learning, with the learner making decisions and choices in response to their situation and the stimulation it offers (1978, pg. 123). The influence of the social situation on the learner's understandings and structuring of knowledge does not prevent the learner from choosing to enter into new environments that cause previously held conceptions and ideas to be restructured and reformulated. The learner can choose to interact with those who represent knowledge differently or those who knowledge is more developed, and then actively participate in the restructuring and expansion of their own understanding (Vygotsky, 1978; Gallimore & Tharp, 1990; John-Steiner & Meehan, 2000).

Vygotsky's research focused on children, and many of his experiments involved observing the behaviours of the young. However, his interest was in learning, and he viewed learning not merely as an activity of the young but rather as "the quintessential sociocultural

activity" and "the capacity to teach and to benefit from instruction a fundamental attribute of human beings." (Moll, 1990, pg. 1) Learning and the restructuring of learning, as expressed in language, are not end-points but a process that is part of living.

But this is the "what" of learning a language, not the process by which entry is gained. For Vygotsky, learning is inherently social (1978). Opportunities for learning are afforded by the opportunity to engage in problem-solving discussions with others, with these external interactions eventually becoming internalized as an individual develops the ability to use language to guide and inform their own intellectual explorations. Learning is dialogic, with the acquisition of language tied to social interactions in which language is used and experienced. Learning is first an activity of the social space, later moving to the interior spaces of the self.

Vygotsky differentiated between an individual's current level of knowledge and abilities, termed their actual developmental level, and what they were able to accomplish with the assistance of others. He defined the difference between the two as "the zone of proximal development...the distance between the actual development level as determined by independent problem-solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." (1978, pg. 86) The space is inherently individual and social; individual in that it recognizes the individual's current state of abilities, not a generalized set of knowledge and abilities for people at a specified level of development, academic/professional achievement, experience or other external marker that may approximate an individual's intellectual and knowledge development. However, it is simultaneously social, as learning and growth take place through collaborative problem-solving, with those who are at a higher level of development providing the assistance that is necessary to reach a solution. The knowledge itself is social in its essence, as it has been carried across time

to its current holders by signs and tools, and is distributed across individuals such that the whole of what is known is contained in the group, but not within a single individual. Extending this idea further, it is possible for group members, each possessing different levels of development in a diverse range of skills and knowledge, to support each other, with an individual supporting another person's learning while simultaneously being supported in their own growth and development. The reconstruction and co-construction of knowledge that takes place through dialogic interaction is not always an internalization of what the participants bring to the conversation, but can sometimes generate new constructions that would not have been possible without the tensions between the selves and the social (John-Steiner & Meehan, 2000).

Another aspect of viewing knowledge as sociohistorical or sociocultural is that previous learning, shaped by the culture in which it has been formed, affects how an individual enters into new learning opportunities. A sociocultural approach focuses on the institutionally, culturally and historically situated aspects of the mind, in contrast to a focus on universals (Wertsch, 1990). An individual's understandings of the world, and the schema that they use to make sense of new experiences, are in themselves shaped by their own experiences within specific sociocultural settings. Thus, an individual will draw on their previous learning experiences when attempting to make sense of a new learning environment. This includes their understandings of what an activity is, and what the expectations are of a student in relation to the activity. "Though...cultural mediation is a universal fact of our species, the development of specific forms of mediation (particular forms of activity employing particular mediational means) clearly is not" (Cole, 1990, pg. 93). Language, a cultural artifact, is a key mediational tool that an individual develops and learns to use to coordinate their relationship with the physical world and with others, including the worlds of formal learning. Language, like other signs and symbols, is

constructed and used socially (John-Steiner & Meehan, 2000). As individuals move across sociocultural communities, their adeptness at using language to mediate their relationship with new learning environments may vary.

The support that a learner seeks and/or needs is itself inherently embedded in complex organizations (Gallimore & Tharp, 1990). If individuals' mastery and control of language impacts on their ability to capitalize on and make sense of the culturally embedded knowledge and development opportunities available to them, it is in part because their understandings of language may or may not give them access to the learning supports provided by the situation. The structures of knowing, built and communicated in language, are the weft and weave of that which the learner wants and can extend. However, as the zone of proximal development implies, not all knowledge is within the learner's reach. Thus, the learner's readiness for further development, that which they can achieve with assistance, may be characterized not only by what they have already achieved, but how the individuals' mastery of structures prepare them for different forms of learning and achievement. Language, and the individual's mastery of particular norms of language use, affects an individual's reach or span, and the length and the direction of the span may differ depending on the interaction between the sociocultural norms that inform the person and the situation. Learning requires a "fit" between what is, what is desired, and the assistance that is provided to achieve the desired. If the "cultural variations in the outcome of logical thinking are primarily the result of differences in the supply of well-formed schemata that are brought to the task" (Cole, 1990, pg. 100), variations in schemata can be an impediment to learning.

Although there is no limitation placed on the ways in which more experienced or knowledgeable individuals can assist the learner, Vygotsky points out that imitation is one means

by which learning can be transferred (1978, pg. 88). Imitation of complex activities, which can only be successful if the activity is within an individual's developmental level, serves a useful role in the apprenticeship of the novice prior to their engagement in their own creative ventures (John-Steiner & Meehan, 2000). Modeling and imitation have long been mainstays in the research and teaching of second languages. Gallamore and Tharp highlight five additional means of assisting performance: contingency management, feeding back, questioning, instructing and cognitive structuring (Gallimore & Tharp, 1990).

In keeping with the notion of the zone of proximal development as a space, inherently three-dimensional, it should be noted that development that results from social interaction can proceed in multiple directions; that is, the participating individuals do not always develop a common understanding around the more advanced or developed learner's ideas (Tudge, 1990). An individual's relative confidence in their personal understanding, as well as their ability to articulate their reasoning for their point-of-view, can influence how common understandings are formed and developed. The zone is an open space of possibilities, but not all possibilities involve the development of more advanced capabilities or understandings.

While not seeking to supplant the work of second language theorists who work within the natural science research traditions, researchers outside of the former Soviet bloc began to explore the potential of sociocultural theory in second language studies in the 1980's (Lantolf & Appel, 1994). The importance of language and speech in Vygotsky's theories and the role they play in mediating the interactions of individuals naturally lend sociocultural theory to the study of second language acquisition, in which the need for interaction and the challenges faced in mastering the pragmatics and societal understandings embedded in language are so apparent. These studies are accompanied by an interest in the individual rather than the generalized learner

and in the specific sociocultural settings in which individuals learn and grow, as well as the

social interaction that is a critical component of all learning. Donato states "(S)tudies of verbal

interactions in which participants are observed in the process of structuring communicative

events jointly, and according to their own self-constructed goals, will provide important insights

into the development of linguistic competence. The focus should be, therefore, on observing the

construction of co-knowledge" (1994, pg. 39). Studies of verbal interaction and self-reflection,

such as those conducted by Donato and others, capture how language students expand both

personal and collective understandings through peer interaction (see also De Guerrero &

Villamil, 1994; Donato & McCormick, 1994; Swain, 2000). Computer-mediated communication

provides researchers with the opportunity to capture alternative forms of communication, in

which the nature of the interaction is influenced by the permanence and interactivity of the text-

based medium.

2.2.2   Learning On-Line

Learning is both a formal and informal activity of organizations, and may be viewed as

the objective or the process by which an objective is achieved. With the perception that societal

change is occurring at an ever-increasing rate, a broad spectrum of society has entered into a

dialogue regarding the need for lifelong learning. As CMC has become integrated into many

people's daily lives, researchers from a number of disciplines have explored its potential and its

impact on learning.

It is important to highlight that the research that follows focuses on communication, not

technology. Learning objects, interactive websites, self-paced study modules and on-line task

design, among others, are worthy areas of research in their own right. However, an acceptance

of Vygotskian perspectives on learning implicitly acknowledges a corresponding acceptance of

the social construction of knowledge and the importance of language, and therefore

communication, in learning. Effective designs for CMC-mediated learning are therefore

enhanced by an understanding of on-line interaction. Research into on-line communicative

spaces comes in many forms.

2.2.2.1 *Impact of Computer-Mediation on Communication*

The importance of speech and language in Vygotskian notions of learning has already

been highlighted. But how is on-line speech or communication different than that of face-to-face

interaction? It has been argued that the two key structural properties of CMC that affect the

development of community are the temporal structure of the selected medium, and the existence

of limited or partial communication cues (Baym, 1998). Typically, CMC is divided into two

temporal structures – synchronous and asynchronous. Synchronous refers to interactions taking

place during real time through the use of technology such as chat rooms or Internet Relay Chat.

Asynchronous, then, refers to communication that is initiated or responded to at different times,

and may take the form of e-mail or bulletin board postings. Temporal structure affects the

availability of immediate feedback, the time available to compose and rewrite communications,

the number of people who can or may be available to interact with, and the meanings or

interpretations of some verbal/non-verbal cues such as pauses, word stress and intonation (Baym,

1998; Herring, 1999).

Asynchronous communication increases the uncertainty as to the reception or

interpretation given to one's one communicative efforts, and leads to issues related to turn-taking

and topic maintenance that are not typical of face-to-face communication (Jones, 1998b; Herring,

1999). Studies examining an IRC channel and asynchronous listserves found that between 18%

and 34% of attempts to initiate an exchange fail to generate a response, with low levels of

previous participation by the initiator correlating with a failure to generate a response (Herring, 1999). Overlapping responses are the norm in both asynchronous and synchronous communication, including threaded discussions. The benefits or problems created by these features of CMC are not well-understood. Hypotheses regarding problems with CMC and its potential incoherence, initially developed from our understandings of face-to-face human conversation, have often not been supported by observed behaviour. Instead, humans have been found to adapt themselves remarkably well to the new communicative environment (Herring, 1999). Examples of adaptation include:

- Issuing multiple messages in order to obtain a response.

- In two-way systems, typing simultaneously rather than using available turn-taking information, and pausing to read only when it is perceived as useful.

- Creating messages that contain several conversational moves, allowing for increased efficiency and a reduction in the number of messages required to complete a task/exchange.

- Developing a system of cues to acknowledge listening or reception, or to signal a desire to maintain the floor.

- Using quotes to maintain the coherence of the exchange.

- Referring explicitly to content in the previous message (termed 'linking').

- Violating idealized turn-taking norms of face-to-face conversation (alternating turns with minimal gaps or overlap) to allow delayed responses or interjections into a conversation at any point in time, sometimes days or weeks after the post that generated the response.

Another area that is little understood is the impact of tie strength on language change. Although it has been speculated that individuals that interact with each other more frequently will share more non-standard or vernacular linguistic features, at least some research indicates that this is not necessarily true (Paolillo, 1999). In a study of an IRC used exclusively by expatriates of Indian descent, one vernacular marker (Hindi) correlated with membership in the

group's core. However, other examples of idiosyncratic language use did not directly map onto the strength of the interactional ties. Rather, attempts to demonstrate power, a lack of proficiency in the language from which the vernacular developed, and the degree to which a vernacular cut across multiple on-line communities also appeared to correspond with patterns of non-standard language use.

Research in organizational behaviour and education has attempted to understand the forces that shape the form and use of CMC, and to identify where possible the unique characteristics of these forms of communication. One line of research is investigating the implications of what has come to be known as "persistent conversation" (Erickson, 1999; Bregman & Haythornthwaite, 2001). Briefly, persistent communication refers to CMC, either synchronous or asynchronous, which persists or to which an individual may refer back to at a later time or date. It is the on-line conversations that, due to the nature of the medium, are captured in much the way that a tape recorder can capture an oral conversation. However, in the case of CMC, all conversations are potentially permanent, and the technological medium selected may be chosen with the express intent of allowing for future searching and referencing of past conversations. Persistent conversation may, depending on the tool with which it is created, be "searched, browsed, replayed, annotated, visualized, restructured, and recontextualized." (Erickson, 1999, pg. 2) Persistent conversation is a theoretical model of the structural properties of CMC, and it should be noted that persistence is another feature of CMC that helps users overcome its apparent incoherence (Herring, 1999).

In attempting to find a framework for discussing the commonalities among the forms of persistent conversation, researchers have drawn upon the work of Northrop Frye and his concept of radicals of presentation (Bregman & Haythornthwaite, 2001). Radical relationships are

defined as "those which are at the root or basis of origin – presupposed between creator and audience for any such text(s)", and which may exist at the level of super-genre, at which level no particular lexical content is required (ibid, pg. 3). The radicals of persistent conversation are related to issues of presentation and the relation between speaker and audience, and are understood by students prior to their engagement with the genres of their CMC-mediated classwork. Bregman and Haythornthwaite propose three radicals of presentation in persistent conversation:

1. Visibility

   In CMC, visibility relates to the speaker's concern with their presentation of him/herself, and takes into account the means, methods and opportunities for presentation. In persistent communication, there is no visibility without posted text. Listening, other than in active forms, does not create visibility. Becoming visible requires choosing how to represent one's self, including choices related to the means of communication selected, the timing of the entry, the content, form, tenor and tone of the representation. The specific situation may determine the number and range of choices available to an individual. For example, an instructor may choose one or more CMC means of communication for students to use in their classwork, and CMC may be used for some or all of course delivery. Lack of experience with CMC is associated with high levels of anxiety related to how to make oneself present.

2. Relation

   Includes the nature of the tie between speaker and audience, and the ties among audience co-participants, including the interpersonal relationships, the number and identity of the audience, and audience members' concerns about relationships with one another. Tie strength may be influenced by the frequency and duration of the relationship, the personal closeness of the individuals involved, and the number and type of exchanges.

3. Co-presence

   The temporal, virtual and/or physical co-presence of speaking and listening participants, including concerns to being with others in the same time and place, and the immediacy of feedback.

It should be emphasized again that radicals do not determine what is and isn't acceptable behaviour on-line; that is, radicals do not determine the norms and genres that develop among CMC users. Instead, radicals are the factors that are commonly understood by CMC users, both novices and experienced users, and new and old members of the conversational group, which influence the norms and genres that have or will develop.

2.2.2.2   Vygotskian Perspectives of Learning On-Line

Vygotskian notions of learning weave easily with many of the discussions of on-line learning. The concept of the zone of proximal development generates images of an almost aura-like space surrounding an individual, a space in which ideas, concepts and knowledge are literally within physical and intellectual reach, immediate and accessible. It is interesting to find parallels to this notion of space in the works of early innovators in the computer field, such as Douglas C. Englebart (1962/1999). Englebart, whose Augmentation Research Center developed various user interfaces, including the mouse and some of the first multi-user computer applications, attempted to develop a conceptual basis for future research and development that addressed the factors that limit individual's information-handling capabilities. The model he created described knowledge as societal and cultural, developed through interaction and mediated through augmentation means. The four augmentation means, artifacts, language, methodology and training, in many ways mirror Vygotskian-based concepts of tool, language and scaffolding (pg.93). Human intellect is theorized as being advanced by the cooperative activity of men, mechanisms and automata. Those who envisioned and created the prototype "construction kits" for today's on-line spaces conceptualized learning in much the same way as Vygotsky, even though they are unlikely to have been aware of his work.

Vygotskian perspectives on learning have previously served as the theoretical underpinnings for examinations of the use of CMC in graduate and doctoral studies (Angeli, Bonk & Hara, 1998; Bonk & King, 1998; Duffy, Dueber & Hawley, 1998; Kang, 1998; Zhu, 1998). These studies share a concern with the social nature of learning, and the need for interactions that focus on joint problem-solving. Bonk et al use activity theory to examine student meaning-making as it is developed and displayed in electronic collaborative writing (1998). A taxonomy for on-line collaborative tools was developed that reflects the degree to which two or more people can interact to share ideas and develop a common text. Initial research suggests that greater depth of discussion is achieved in formal learning environments using asynchronous rather than synchronous tools. Identified key benefits of on-line collaboration include positive changes in the nature of the interaction between students and teachers, the shift of writing and literacy events from solo to collaborative activities, and the evolution of collaborative learning that builds on intersubjective experiences.

Conversation is considered the foundation of collaborative work, and the process through which issues are identified and brought forth for focused exploration and evaluation (Duffy, Dueber & Hawley, 1998). Their model of effective on-line learning environments states that environments that foster critical thinking must focus the user on problem-solving, promote attention to and reflection on the argument and the goals, provide appropriate structures for each communication need, and provide support coaching by a facilitator. Linear and topical threadings of postings are viewed as two alternatives that deliver different benefits. As learners cycle between conversation and issue-based discussions, each considered equally important and interactive stages of learning, different CMC tools are needed to support the differences in the desired activity and interaction. Postings sequenced by time are considered inappropriate for

issue-based discussions, and hierarchical structures inappropriate for exploratory conversations (pg. 68). In line with models such as CoVis and CSILE, importance is placed on having students categorize and label their contributions using parameters such as the type of message (i.e. hypothesis, important point, evidence), content source (i.e. summary, personal opinion, expert opinion) and the perceived importance (i.e. data, interesting tangent, critical point). Arguments are made for flexible systems that adapt and/or can be adapted to the learners' needs, while still providing the necessary focus for learning.

An investigation into the use of a listserve developed to extend classroom discussions found that the collaborative atmosphere established in face-to-face classroom discussions extended into the e-mail interactions (Kirkley, Savery & Grabner-Hagen, 1998). Both classes involved in this study contained approximately an equal number of native and non-native speakers of English; however, one class was project-based and the other was theoretically oriented. Significantly more e-mail was generated by the students in project-based than in the theoretical class. American students sent four times as many e-mail as their Asian counterparts in the project class, and approximately twice as many in the theoretical class. However, in both situations, researchers found that fewer e-mail focused on providing assistance to others than the researchers had anticipated, even though their calculations include support provided by the professor. Many of the topics explored did not relate directly to a class discussion, but rather grew out of one student's thoughts or response to a subject touched upon in class. One of the interesting insights of the study was the inappropriateness of using the vocative as an indicator of the writer's intended audience. In the majority of situations, e-mail addressed to a specific person generated comments directed to the class. Thus, the author's understanding of the audience and the actual audience were not necessarily communicated by the vocative.

Research within a Vygotskian frame on the use of CMC as an adjunct to face-to-face interaction is not limited to North American contexts. In a 1995 case study of Korean graduate students participating in an educational technology course (Kang, 1998), students used a variety of CMC for reporting, discussing and reflecting upon class content and projects. Despite initial reservations, and to the surprise of some participants, students found the discussion helped them to understand diverse perspectives. Students sought additional learning resources, consulted with peers and evaluated each other's projects, spending two to four times more time on-line than they spent in the face-to-face classroom. Although the students experienced both technical and organizational problems during the first two weeks of the course, most were resolved through consultation with each other rather than through intervention by the instructor. This was particularly noteworthy given the traditional hierarchical organization that is still predominant in Korean classrooms.

Participants in a course on educational technology at two mid-western universities interacted through instructional video-conferencing, e-mail and bulletin boards, discussing lecture materials and readings (Zhu, 1998). During the course, each student was required to act as starter and wrapper of a topic discussion. As well, at various points in time, students were assigned specific roles to play during the discussion. However, roles did not always contain a student's behaviour. "...(H)orizontal interaction appeared much more often than vertical interaction. The role each participant assumed in the discussion was not fixed or permanent, but could be easily switched and interchanged" (pg. 250). There was also significant diversity and divergence in the conversations that students initiated following the videoconferences, with students moving the instructional conversation towards and away from the posed question such that the discussion addressed their own learning needs and issues. Thus, students were able to

play multiple roles, including peer, expert and novice, altering the conversation to scaffold and support each other's learning. As expressed by one student in the study "Surely, using VAX Notes or news groups or even e-mail has a big advantage, that is, for shy and for the students whose first language is not English, this is a very good place to express their opinions" (pp. 254-255).

Although much of the published work on CMC and language acquisition has focused on the use of e-mail, studies in a graduate level TESOL program showed that native and non-native speakers contributed an equal number of turns to a class bulletin board adjunct. The study did not take an explicit sociocultural stance. However, small groups of students were required to formulate "questions of the week" to which their classmates were expected to respond, in line with the design used by Zhu. Instructor initiations and responses were markedly reduced when compared to face-to-face discussion, and the overall number of evaluative comments dropped dramatically (Kamhi-Stein, 2000). Thus, unlike some of the earlier studies, interaction did not follow an IRE pattern, despite a class format for bulletin board that required posting formal questions for discussion. However, most of the posts appear to be in direct response to the weekly questions, although no apparent attempt was made by the instructor or the question initiators to guide or shape the subsequent discussion.

Subsequent work by Angeli, Bonk and Hara would suggest the importance of understanding both the nature of the instructor's role and the directions provided to students before assuming that the conversational structure or task necessarily predetermines the pattern and shape of the interaction (1998). In a graduate educational psychology course, instructors followed Zhu's design of having each student act as starter and wrapper in the class' adjunct bulletin board discussions, but achieved apparently different outcomes in interaction patterns.

Almost without exception, students responded to the starter's questions, the minimum course requirement, but added no additional posts. A network analysis was conducted on four weeks of interaction, that is, the responses generated by four different questions. Almost all postings in Week 2 referred to the starter. Week 4 had no starter, and interaction patterns and topic discussions were scattered, with slightly fewer students referring directly to another's postings. Weeks 8 and 10, which again involved a starter, showed an increase in the number of references to a poster other than the starter. The authors also note that some postings referred to in-class discussions or questions from the reading material. The number of social messages was highest at the onset of the course, but more than half of the postings continued to contain embedded social cues at the end of the course. No information is provided as to whether early posters went back to read the postings of those who posted later in the week, however, use of the bulletin board did not result in the desired joint problem-solving and knowledge construction.

Angeli et al. surmise that focus increases interaction. A key aspect of their investigation was the level of cognitive complexity or deep thinking displayed by the students in their responses. Angeli et al. link structuring on-line interaction to increased time for reflection and a depth of response not possible in classroom discussion, but also with the limited number of student responses and the apparent lack of negotiation of meaning. The researchers express concern over the students' continuing use of on-line tools "to complete a particular task, rather than as an opportunity to engage in rich discussions and debate with their peers and instructors." (1998, pg. 30)

2.2.2.3   Other Education Investigations Into CMC

The current of concern related to student interaction is evident in other writings on the use of CMC in post-secondary education. In their survey of the literature, Tolmie and Boyle

highlight both the promise "that CMC promotes engagement and productive discussion" and its failure to meet expectations, and note that assessing CMC's value in education is further complicated by the piecemeal and anecdotal nature of much of the associated research (2000, pg. 120). Like the classes detailed in the work Agneli et al and Kamhi-Sethi, CMC use can evolve into a pattern of questions and responses between students and tutors/instructors/discussion leaders, the classic IRE pattern of classroom conversation. Factors associated with successful CMC use include small group size (although "small" is still open to interpretation), some level of familiarity among participants, previous experience in expressing personal viewpoints, clarity as to how to proceed with the task, ownership of the task, and an inability to perform the task without CMC (Tolmie & Boyle, 2000). In their own study involving a group report and presentation on a case study, they emphasize the need for implementation to facilitate the development common purpose, and to recognize that CMC use will reflect the students' perception of the purpose of both the task and the technology. The type of discussions that instructors often hope will develop will only occur if students perceive them as serving the purpose of their activity. Students who are more familiar with communication related to concrete tasks are less likely to find a purpose for using CMC for discussion and dialogue. The authors suggest that this does not negate the value of CMC in the learning task, but it does bring to light the need for methodologies that are sufficiently flexible to capture the different contributions that CMC may make to the students' learning.

Accompanying concerns regarding "rich discussions" is a focus on the instructional or facilitation techniques that aid in the their creation and evolution, some of which have already been noted (see for example MacKinnon, 2000; Poole, 2000; Angeli, Bonk & Hara, 1998; Bonk & King, 1998; Duffy, Dueber & Hawley, 1998). Most of these studies take the form of case

studies or use a mix of quantitative and qualitative measures to describe a single class. However, there are exceptions. In an experiment designed to investigate optimal coaching behaviours for eliciting argumentation and knowledge construction through the use of IRC, researchers were surprised that more constructive interactions occurred between control group participants that were not supported by trained peer coaches (Veerman, Andriessen & Kanselaar, 2000). Using a cognitive coding system to analyze transcripts for 1) argumentation related to the meaning and use of previously studied concepts, 2) argumentation related to task strategy, and 3) the shifting focus between these focuses of argumentation, researchers analyzed the results of pair discussions between members of a control group, and between members of groups receiving two different treatments. Discussions between pairs in one treatment group were facilitated by a peer coach who provided support for the structuring of arguments and counterarguments, and who assisted with multiple perspective taking. Discussions between pairs within the second group were facilitated by a peer coach who provided reflection on the strength and relevance of offered arguments, and support for linking claims to evidence. Although the pairs within the control group posted significantly less messages, they engaged in more meaningful interaction at a conceptual level. They also engaged in more information checking than the two treatment groups, and engaged in less moves that were categorized as challenges or counters. Although the researchers' discussion focuses on how to more effectively support CMC-mediated discussions, they do not examine the implications of less intervention producing more constructive or meaning-making moves.

Several studies in business education have focused on achievement in task performance using CMC. In a study of students solving a case study, groups that worked on-line using only asynchronous CMC produced better and longer reports than individuals or groups of students

who worked face-to-face (Benbunan-Fich & Hiltz, 1999). However, students using CMC were also the most dissatisfied with their group process. A study of students from twenty-eight universities, each located in a different country, looked at the development of trust among multinational student teams who had no opportunity for face-to-face communication (Jarvenpaa & Leidner, 1998). Levels of trust were measured before and after three team assignments, and no differences were found related to perceived cultural variability in individual or collective orientation. Teams that began and ended with low trust exhibited unequal levels of communication among team members, shallow ideas, a lack of task focus and little feedback. Higher levels of trust were associated with a team's ability to overcome uncertainty and differing expectations among team members. A successful transition from procedural to task focus was found to correspond with the creation or maintenance of high levels of trust. Teams that began and finished with high trust demonstrated initial enthusiasm and the ability to cope with technical difficulties, dynamically addressed organizational and logistical tasks, and provided detailed descriptions of their content contributions. Behaviours associated with initial levels of high trust included social communication, communication of enthusiasm, individual initiative and the ability to cope with technical difficulties. Behaviours associated with end levels of high trust were predictable communication, substantial and timely responses, a transition from social to procedural to task focus, a level response to crises, and positive leadership. Evidence supported theories related to the formation of swift trust, trust that exists among temporary teams focused on a specific task, and teams that demonstrated initial high trust seemed to proceed with positive assumptions about their team members, assumptions evidenced in the tone of initial e-mails. The need for social as well as task-oriented interaction was also a finding of a study of educational professionals using an on-line forum (Anderson & Kanuka, 1997).

2.2.2.4   Interacting On-Line

Much of the work on the impact of computer-mediated communication (CMC) on group interaction and processes has taken place in the field of organizational behaviour. Perhaps because large organizations were among the first to adapt technology for communicative purposes on a significant scale, companies and organizations have also been the first sites for genre and ethnographic studies of the introduction and use of CMC. Unlike the theoretical constructions that predominate in the field of new media studies, research in these settings has focused on finite groups of people using CMC for a defined purpose. In this sense, these users resemble students using CMC for their course studies, and so are a relevant source of information and reflection for those interested in technology for educational purposes.

Research into persistent conversation is grounded in earlier organizational studies related to on-line genres, in which issues of visibility and relation are manifest. Research into organizational CMC has looked at genres as "socially recognized types of communication action....that are habitually enacted by members of a community to realize particular social purposes", where the purpose is constructed and accepted by community members (Yates & Orlikowski, 1992 cited in Yates, Orlikowski & Okamura, 1999, pg. 84). The genre acts as an organizing structure for the community's social interactions; however, genres are not viewed as fixed and stable and may evolve as a result of either conscious or unconscious changes in usage by group members (Orlikowski & Yates, 1994). Genres are constantly open for revision and are affected by the existing genres that members bring into the communication, the alterations that members make to existing genres, and the creation of new genres. Genres have been found to be simultaneously shaped by explicit directions, training, endorsement and admonishment by formal group leaders, the technological features of the CMC used, and implicit shaping of on-line

communication through members' migratory and variable practices (Yates, Orlikowski &

Okamura, 1999). Just as non-CMC academic genres shift and evolve over time (Ramanathan &

Kaplan, 2000), so are CMC genres altered by member interaction. However, the descriptions of

academic genres generally represent genres to be more stable than do researchers in

organizational science.

Boland and Tenkasi argue that transformation within a community is dependent on

"perspective making and perspective taking", and that designers of electronic systems for CMC

must be cognizant of the medium's mediational effect on these critical knowledge-building,

communicative tasks (1995, pg. 352). Community members must simultaneously be able to

develop their own perspective while developing understandings of the perspectives of others. If

systems lack the flexibility to allow for multiple communication purposes and forms, the

knowledge building activities of the community are impaired. They further argue that good

arguments and good stories, as understood by Bruner, are essential elements in these processes,

and that those who manage users of CMC must allow for both elements to evolve. Much like

Duffy, Dueber and Hawley, who used the terms conversation and issue-based discussions, they

are concerned with the need for dual processes that allow for divergence and exploration, and

convergence and resolution. Thus, the health of the on-line community is at least partially

dependent on the evolution of appropriate genres.

Genres are, in essence, evidence of the existence of community, if community is defined

by the commonly understood communicative and language practices that underpin the network

of relationships, and the nature of the community is reflected in the tone and nature of the genres

that do and do not develop. Genres are also one of the criteria for the existence of a discourse

community (Swales, 1990). Yet even within disciplines, the issue as to what constitutes a genre

is disputed. In their study of the use of e-mail by systems designers seeking to develop cross-platform applications, Orlikowski and Yates did not define medium as genre, but instead found that participants employed multiple genres using the same medium while working on a single task (1994). A debate is currently underway as to whether conversation is or can be a genre, a debate of particular interest to researchers of CMC because CMC can contain elements of both speech and writing (Murray, 2000; Bregman & Haythornthwaite, 2001). To some extent, the debate is rooted in differing definitions of genre. Whereas Orlikowski and Yates consider genre as a communicative practice in an organization and therefore consider on-line dialogue to be a genre, Swales and others place a greater emphasis on the communicative purpose of the interaction (Orlikowski & Yates, 1994; Orlikowski, Yates, Okamura &Fujimoro 1995; Yates, Orlikowski & Okamura, 1999; Swales, 1990; Berquist and Ljungberg, 1999; Bregman & Haythornthwaite, 2001). Conversation does not always have a clear purpose and, as Berquist and Ljungberg point out, "If genre is to be defined as conversations with a goal, the goal could not be the conversation itself." (1999, pp.9) What is not debated is the conversational nature of some CMC.

Further discussions of CMC deal specifically with the relationship of the human and the machine. Structure and usage may be viewed as being co-constructed; that is, "the process of constructing technology *and its users* is a reflexive one in which both technology and social groups mutually elaborate each other", and the boundaries between the two constituents, and between the constituents and additional stakeholders are continually blurred and shifting (Lea, O'Shea & Fung, 1995, pg. 464, italics in original). Use is not dictated by the type of CMC used, or the task being performed. Pre-existing groups using the same functional structure and technology and performing the same task, vary their usage depending on the social context such

that the usage reinforces existing social structures (Zack & McKenney, 1995). These structures are represented in patterns of interaction, which tend to persist over time, regardless of the communication medium. A group's willingness to restructure their relationships is dependent on factors such as preexisting patterns of authority, obligation, and cooperation, and an organization's openness to change. These findings are further reinforced by recent studies of the e-mail usage of major Hong Kong companies, where e-mail use was found to reflect and reinforce traditional power relationships between employer and employee. The egalitarianizing effects associated with the increased information-sharing through CMC use observed in American-based corporations were largely absent (Martinsons, 2001).

Nor is normative behaviour limited to pre-existing groups. University students participating in a non-compulsory, supplemental statistics course used the e-mail feature of their courseware to develop contacts with their peers (Postmes, Spears & Lea, 2000). Examining the various sub-groups that emerged, researchers discovered that different communicative norms developed in each group, and that the norms became stronger over time. However, these norms did not extend to interactions outside of the individual emergent group.

An area in which there is little agreement is the degree to which the filtering of non-verbal cues affects communication and interaction, a discussion that fits neatly within Bregman and Haythornthwaite's radical of relation. Defining social presence as "the feeling that other actors are jointly involved in communicative interaction" (Short, Williams and Christie, cited in Schweizer, Paechter & Weidenmann, 2001, pg. 2), researchers have speculated that the lack of information regarding speaker and the social context affects an individual's perception of the social presence of others. Early work of Spears and Lea postulated that despite the lack of social and non-verbal cues, participants may be conscious of the social context (1992). Thus, at any

given time, an individual may act in awareness of context, resulting in behaviour governed by the group identity, or may act without consciousness of the context, resulting in highly individual behaviour that results in greater task-orientation, informality and potentially asocial behaviour. Further studies reinforce that individuals respond to the anonymity offered by CMC with a range of responses, and that higher levels of anonymity may in fact lead to greater attention to situational group norms (Postmes, Spears & Lea, 1998). In a series of experiments involving low cue on-line environments, the authors found individuals who had engaged in activities designed to foster a group social identity demonstrated greater conformity to established situational group norms in subsequent CMC-mediated tasks. Adherence to established situational norms was not as evident in environments richer in social cues. They hypothesize that if individuals identify with a social group, individuals in low cue environments may demonstrate greater attention, commitment and adherence to local group norms. Other studies cited by Postmes, Spears and Lea have examined positive bias towards group members in low and high cue environments, and in environments in which group and/or individual identities are stressed (Postmes, Spears & Lea, 1998). Low cue environments, and those in which group identity is stressed, result in positive in-group identities and strong in-group favoritism and judgments. Low cue environments were also associated with more informal interactions with an assigned tutor in research conducted with distance-education students in a German university (Schweizer, Paechter & Weidenmann, 2001). This, in CMC classroom adjuncts, students may demonstrate greater sensitivity to cues that are available on and off-line, and educators need to be aware of the potential positive and negative impact of forces shaping on-line group identity.

Although the reduction in non-verbal cues was often conjectured to be a limitation in early theories of on-line communication, this position is now being rethought by researchers

across a wide spectrum of research domains. Reduced visual clues have in some cases been identified as increasing the willingness of participants to ask "stupid" questions (Haythornthwaite, Kazmer & Robins, 2000). Like CMC in other contexts, CMC in learning environments has also been described as containing characteristics of both speech and literary practices (Bregman & Haythornthwaite, 2001; Baron, 1998). Among the influences affecting CMC in educational contexts are speech genres related to classroom interaction, professor/student interaction and peer discussions, as well as literary practices associated with term papers, homework assignments and written arguments.

Again, these studies are highly relevant to second language acquisition, as NNS speakers must acquire not only grammatical competence, but competency in the discourse of their chosen area of study, and of academia in general. Discourse is realized in vocabulary, morphology and syntax, but also in ways that have little to do with language as it is represented in a dictionary or stylebook. NNS students need to understand the social and intellectual structures represented in the language, either to appropriate them, or to effectively engage in their change. Therefore, these studies, which include NS and potentially NNS, are useful in that they highlight how users adapt and conform to the language norms within on-line communicative contexts.

In formal educational contexts, it is unclear whether groups develop their own on-line conventions for classwork, or are socialized into previously established discourses. The ways in which instructors shape the on-line the discourse, the forms of scaffolding provided, and the situational impact of explicit directions in facilitating and/or impeding the development of effective learning communities are not fully explored. Variations in the stages of development that on-line learning communities pass through, and whether it is possible to facilitate the development so as to spend more time at the productive stages of knowledge development would

also be of interest. Similarities and differences in the nature of the ties, including tie strength, between face-to-face class participants, face-to-face participants using a CMC adjunct, and class participants communicating only through CMC are another potential area of investigation, as is the impact of tie strength on on-line behaviours.

2.2.3 · Communities of Learning

Across disciplines, community is being explored as both a site and metaphor for the process of learning. The concept of community as it has emerged in these contexts changes the nature of the relationships between individuals involved in learning, the understanding of the contexts of learning, including but not limited to the nature of the role of context, and understandings related to the importance of the interplay between people and the contexts in which learning takes place. However, there are differences in the shadings of meaning and points of emphasis in the different explorations of community.

For Lave and Wenger, community is an entity in which one moves towards full participation from an initial point on the periphery (1991). The community, which is generally represented as having a prior existence, is viewed as possessing knowledge, skills and resources that the learner attempts to gain access to through participation in the community. However, community is not necessarily defined by boundaries or external identification, but rather by "participation in an activity system about which the participants share understandings concerning what they are doing and what that means for their lives and for their communities" (1991, pg. 98).

Learning itself is understood to be "an integral and inseparable aspect of social practice," and as a social practice is not a destination or end result but an on-going activity of all community members" (Lave & Wenger, 1991, pg. 31). Framing learning in this way allows for

knowledge to exist not as a single, common, unified object held by each person, but an as everchanging construction open to the differing interpretations by community members, with any one community member potentially learning at any given moment. Members are viewed as "hav(ing) different interests, mak(ing) diverse contributions to activity, and hold(ing) varied viewpoints" (1991, pg. 98).

Other similar models view learning as a capability that is continuously being developed within an organization (Senge, 1994). However, the emphasis on community or organization does not take away from the importance of individual control or agency. Referencing Janet Murray's work "Hamlet on the Holodeck", Kramsch et al define agency as "the power to take meaningful action and to see the results of our decisions and choices" (Kramsch, A'Ness & Lam, 2000, pg. 97). Communities differ in the degree to which they afford participants the opportunity to create meaningful roles for themselves (van Lier, 2000; Norton & Toohey, 2001). By creating spaces in which the learner is able to make real contributions to the community and in which those contributions are valued, the community also allows the learner to gain access to the conversations that are critical for learning. Work by the Center for Organizational Learning at MIT has found that lack of power to act in relation to what is being learned is one of three factors that leads to failure in attempts to establish learning organizations and new learning capabilities (Senge, 1994).

Learning is more than acquiring "what." Learning is also acquiring "how." In this sense, Lave and Wenger talk of the novice "learn(ing) to organize his own behavior such that it produces a competent performance" (1991, pg. 74). Organizational studies of knowledge construction are also concerned with how representatives of diverse communities share and build on each other's knowledge to innovate, create and solve tasks. Diversity is not limited to ethnic

or linguistic diversity, but includes also the diversity of knowledge nets to which community members are already linked (Boland & Tenkasi, 1995). Different communities, or representatives of communities, bring not only different knowledge but also different ways of knowing, represented in the use of language and symbols. New knowledge, new meanings and new linguistic routines result from the interaction of communities "as they question and revise routines and create new processes and relationships among themselves" (1995; pg. 352).

Community participation is central to Lave and Wenger's conception of how learning takes place, and the social engagements or ties that are allowed or facilitated are critical components of the context of learning. One's initial position within a community is described through the concept of legitimate peripheral participation, the creation of a space within the community for an individual to gain access to the conversations and activities which contain the community's ever-changing knowledge and competencies. The skilled use of appropriate language is of itself one of the competencies necessary for full participation, and evidence of the learner's progress towards a central position in the community. In fact, language acquisition potentially becomes the legitimate peripheral participation of a learner with more masterful users of the language (Lave & Wenger, p. 19). This conception of community also highlights that learning is always situated; that is, learning and the interactions that form the basis of learning occur within a context, and that within this context individuals will develop an identity related to their relationships to others within the community and their place and practice within the community itself.

As a social practice, it follows that learning must be situated, that it take place in a space that allows for social interaction. This conception of learning fits neatly with both Lave and Wenger's model of communities of practice, and Senge's writings on learning communities

(Senge, 1994). Senge applies the term learning organization to large, recognized entities, such as corporations, but also to smaller units and groups, both established and formed for the purpose of executing an assigned task. In either case, learning takes place within a larger context, and is an activity that is shared rather than pursued by an individual. Rather than focusing on the process by which an individual moves from the periphery to full participation, the works of these who have collaborated in the "Fifth Discipline" series of publications and products have focused on the five traits or disciplines that they believe characterize successful learning organizations: systems thinking, mental models, personal mastery, team learning and shared vision. With the exception of personal mastery, each of these disciplines emphasizes the connectedness both of the individuals within the community and the community to the larger context.

Language plays a role, directly or indirectly, in most discussions of community, although Swales' six criteria for the existence of a discourse community probably give language the greatest prominence (1990). Swales' requirements, that discourse communities possess a specific lexis and a membership defined in part by a shared expertise, exclude many temporary on-line learning communities from his definition of community; however, the emphasis on genre, lexis and expertise are useful notions when considering the larger context within which student learning communities exist, and how they influence the interactions that take place.

Storytelling plays an integral role in communities of learning, which should surprise no one as stories have played a role in passing on knowledge and wisdom within geographic and ethnic communities across time and across cultures. Stories are resources that community members can draw upon when later faced with challenges, or when opportunities for providing guidance to newer members of the community arise (Brown & Duguid, 1991; Lave & Wenger, 1991; Senge, 1994). Stories are also a means of integrating and synthesizing the past

experiences of self and others into a coherent whole. Kramsch et al, in their study of computer-mediated language acquisition, go so far as to state that learning a language is "a matter of assembling a patchwork of discourses taken from various contexts and resignifying them within the local situation of the exchange", in essence acquiring prefabricated parts with which to author one's own situational text (2000, pg. 98).

As discussed earlier, the issue of boundaries is a recurring and troublesome theme for researchers of physical and metaphorical communities, and so it is not surprising to find the same concerns in explorations of communities of learning. This has led some researchers to alter their model of community as group to a model of community as network, with nodes and connections representing individuals and their interactions with each other (see Wellman, 1999). Such models allow for communities that are tightly or loosely bound, that interconnect and allow for multiple memberships, and that can be characterized by high or low levels of interaction. The individual is neither defined nor contained by a single community identity. There are no edges to these communities, only overlaps that represent the multiple community memberships held by an individual.

Research that reinforces the notion of community as network dovetails neatly with discussions that emphasize the importance of interaction in learning. It allows for different forms and types of sharing, which flow around and across hierarchies and communities, and it does not limit the flow of information and feedback to a single direction. It also allows for multiple opportunities for interaction. Learning as a social practice in work environments, whether the midwives or tailors profiled by Lave and Wenger or the technicians that were observed by Orr, focus on these networks of interaction and support (Lave & Wenger, 1991; Brown and Duguid, 1991).

For the purpose of discussing classroom learning communities, it is interesting that Wellman's research has led him to conclude that most communities are personal communities "with active personal community members usually supplying only a few dimensions of social support" (1999). An individual's life is not dominated by the formal physical communities of home, work and school, but by the highly personal communities that one joins and forms within these larger societal institutions. By defining community as network, these previously obscured communities become visible, and the social and intellectual support they provide emerge. These non-canonical communities may provide greater opportunities for growth and development than the formal organizational supports that were designed for this purpose (Brown and Duguid, 1991). The other point of emphasis is that a community need not provide all dimensions of social support (Wellman & Gulia, 1999). This does not diminish the strength of the connection, nor the willingness of community members to work to maintain supportive ties; however, it highlights that a connection does not provide unlimited support. The obvious example is that one can be willing to provide intellectual and/or emotional support but not financial. Such support may be provided even though the links between individuals are weak and infrequent, and may serve to supply resources that are not available in communities within which the individual maintains stronger ties (Constant, Sproull & Kiesler, 1999).

In their review of the literature related to on-line communities, Wellman and Gulia cite several studies that show how members of on-line communities within organizations are willing to provide emotional and intellectual support to other community members, even if the ties between community members are weak (1999). Here again, issues of identity arise. They hypothesize that such support is tied to an individual's conception of their identity, "particularly if technical expertise or supportive behavior is perceived as an integral part of one's self-

identity" (1999, pg. 9). They identify specific benefits that may accrue to an individual as a result of providing help in a public forum, including increased self-esteem, respect from others and status attainment. There is also evidence that at least some communities develop norms of generalized reciprocity and organizational citizenship, often evidenced in densely knit communities, but also found among frequent contributors to open listserves and newsgroups (Constant, Sproull & Kiesler, 1999; Haythornthwaite, Kazmer & Robins, 2000). Wellman et al. cite numerous studies in which members of work task or professional groups found social support in networks designed for more prosaic information exchange (1996). In language education, students completing on-line task-based activities use "reactions to responses", that is, concretely acknowledged other students' responses, in the vast majority of their negotiation sequences (Pellettieri, 2000). This continuing formal acknowledgement of the contributions of others may also act as a reward or reinforcement of supportive behaviours. Acknowledgement or support may take many forms. Researchers in educational environments have noted multiple forms of resources exchanged by students, including those characterized as intellectual, social, and emotional (Haythornthwaite, Kazmer & Robins, 2000). These contributions could be banked and were not necessarily exchanged in-kind. Thus, students allow for differentiated contributions to the community by members, implicitly and explicitly valuing the diversity of the contributions.

The phrase "learning community" is also seen in research and books discussing schools, with a learning community positioned as the objective rather than a pre-existing entity. Like the theorists discussed earlier, these discussions focus on the context and social aspects of learning, and often imply if not state directly that community is a desired state (for examples, see Nieto, 1999; Shapiro & Levine, 1999; Caine & Caine, 1997; Pierce & Gilles, 1993). Community is the

culmination of a process, and often appears as the subject for discussion in the final section that deals with solutions and recommendations related to current educational issues.

Sonja Nieto, in her book on multicultural learning communities, focuses on five principles of learning: the active construction of knowledge, learning emerging and building on experience, the influence of culture on learning, the role of context, and learning as a socially-mediated activity occurring within a culture and community (1999). Culture is a key concern of her book. The role of culture in learning is seen as a thorny issue that flies in the face of conversational norms of student equality. She hypothesizes that culture is an uncomfortable topic, perhaps because of fears that cultural differences will be construed solely as a negative marker or that culture will be viewed as a static, fixed entity that has a single, equal effect on all of a community's members. However, Nieto emphasizes that effective learning builds on students' strengths. Culture, inherently multi-faceted and ever-changing, and experiences that have shaped and defined that culture are contributors to the assets that students bring to the learning context and community.

It is not only theorists who view learners as a community. As discussed earlier, community is used by participants in on-line forums and listserves to describe the nature of their relationship to other participants. Students in more formal learning settings, including participants in distance education programs mediated by technology, also use this term to describe to describe their relationship to their classmates, regardless of whether or not they maintain a strong involvement (Haythornthwaite, Kazmer & Robins, 2000). Thus, regardless of the strength of their ties to other community members, the community is understood to play a role in their learning. Those who maintain weaker ties experience more stress than other class participants, which may be a result of a lack of social support, or concern over the academic

implications of lower participation levels (Haythornthwaite, Kazmer & Robins, 2000; Sengupta 2001). Distance learners experience their community and community members as having a common history, create points-of-difference between themselves and those they view as outside the community, and develop their own rules of social interaction as the class progresses (Haythornthwaite, Kazmer & Robins, 2000). Student responses to forming and entering these new communities are characterized by significant apprehension by many of the participants, and students describe the pressure to have "perfect" postings (ibid; Sengupta, 2001). A chicken and egg relationship appears to exist between levels of stress and levels of participation as "individuals who feel less comfortable, less safe in the community, are those who feel they contribute less to the community, those who do not engage in the reciprocal exchange of resources" (pg. 11).

Thus, on-line distance learners experience community in their learning space, although the impact of community on their learning and processes of learning has not yet been explicitly explored. This leaves open how conceptions of communities of learning/communities of practice fit with on-line adjuncts, and particularly how students' perceptions of their relationships with their classmates coincide with their descriptions of learning.

2.2.4 End Notes

The previous discussions have incorporated research and theory from a broad range of disciplines, including studies in communication, organizational behaviour, new media, educational psychology and, of course, second language education. There are, however, a central group of themes that continually weave in and out of the discussion.

1. Learning is social.
2. Learning is situational.

3. Learners shape and are shaped by their immediate and historical learning contexts.

4. Learning is an integral part of being human.

Wells states that learning no longer seems mysterious "when people's participation in a society's on-going activity systems is seen to be the basis of the mutually constitutive relationship between individuals and society...It is simply a way of referring to the transformation that continuously takes place in an individual's identity and ways of participating through his or her engagement in particular instances of social activities with others." (2000, pg. 56) Language, one of the tools that humans have developed for mediating their relationships with others and with their environment, has a privileged role in learning, for it is the vehicle through which much of learning takes place and the tool with which learners structure their new understandings. For the second language learners to enter into new understandings, they must first gain access through the door of language. Investigations into the learning spaces of native and non-native speakers are opportunities to examine how these spaces assist or prevent non-native speakers from accessing and developing the tools required to develop new understandings, and to enter into dialogues that create new constructions of knowledge for all involved. They are studies of growth in the ways of knowing, and this research is a study of how one on-line learning environment shaped and was shaped to contribute to such growth.

CHAPTER 3: METHODOLOGY

There are four data sources for the study that follows:

1. The bulletin board protocols themselves.

2. The author's think-aloud of her own usage of the bulletin board, which was conducted for nine of the thirteen weeks of the course.

3. A written survey that was used to gather the participant's demographic information, as well as the participants' perceptions of the factors that influenced their bulletin board use.

4. In-person individual interviews conducted with all but one of the participating students in June of 2001.

When examining specific learning environments "...the way in which an activity is played out on a particular occasion depends on the affordances of the situation, including the cultural tools available, the way in which the participants construe it, and the resources of knowledge and skills they can bring to solving the problems they encounter. However, both the way in which they construe the situation and the resources that they bring to bear depend, in turn, on the manner and extent to which, from their past experiences of participation in similar situations with others, they have appropriated the practices, tools, motives and values in terms of which the activity is organized within the larger society" (Wells, 2000, pg. 55). While I argue that the bulletin board is a space, and a potential site for multiple activities, the interplay of elements described by Wells is at the heart of this study. This is a study of context and interaction, and whether or not the on-line space created through use of the bulletin board afforded opportunities for content and language learning. Therefore, an attempt is made to develop a rich and thick description (Geertz, 1973) of the complexity of this specific learning space and the activities that took place within it. As well, an attempt is made to characterize the bulletin board's impact on student learning, particularly for the non-native speakers in the class.

This includes a description of the factors that shaped the bulletin board discussion, and the participants' own description of its impact on their learning.

Although the study investigates how the bulletin board assisted non-native speakers in the continuing development of their English language skills, no attempts were made to measure any aspect of language acquisition. Measuring language acquisition by non-native graduate students is problematic at best, and ascertaining the relative contribution made by individual activities or interactions is almost impossible. Students entering graduate programs are already assessed as having relatively strong English language skills. They may or may not be taking other graduate courses concurrently, and/or potentially engaging in language studies, self-directed or otherwise, while taking a course with a bulletin board adjunct. Students use English to varying degrees in both their personal and professional life. For some, the majority of their life continues to be conducted in their first language. Their L1 is used almost exclusively at home, and their primary friendships are with individuals from their native country. For others, residing in Canada is an opportunity to improve their language skills, and extra effort is made to engage socially and professionally in English. Each student brings with them a different basket of competencies when they enter a classroom, a different set of strengths and weaknesses related to their language and communicative competencies, and a different set of language learning skills and strategies which may or may not match with the language learning opportunities provided within the learning space. To attribute gains in English language proficiency to any one of the activities in which a non-native speaker engages would therefore be highly dubious science. Therefore, no attempt is made to triangulate students' descriptions of their personal language gains.

3.1 Participants

Nine of the ten Masters and Doctoral students who participated in a language education graduate seminar conducted during the Fall Semester of 2000 are the focus of this study. Four of the participants were non-native speakers of English who had either recently immigrated to Canada, or who were residing in Canada for the purpose of pursuing a graduate degree. These students had studied English for an average of twenty-one (21) years. Two of the participants had immigrated to Canada as children. Although they spoke English as a second language, they were perceived as native speakers by their classmates and will be classified as native speakers for the purpose of this study. The remaining students were born in Canada and were native speakers of English. One of the native speakers is the author of this study.

Six of the students in the course were at the beginning of their studies; the remainder were at least one year into their program of study at UBC. Two of the participants are pursuing a doctorate. The class included native speakers of Mandarin, Russian, Korean, Greek, Romanian and French.

Three of the nine students had taken previous classes with the same professor, all of which involved the use of an on-line bulletin board. I had shadowed an earlier bulletin board from Saskatoon. All of the students had previous exposure to some form of computer-mediated communication, although the degree and extent of their experience varied, and all had experience teaching a foreign or second language, often in a variety of settings. Additional information about the study participants can be found in Appendix IV.

Only one male participated in the graduate seminar being studied. In an ethnographic study of public postings to nine Usenet discussion groups, most of which were predominantly male or female, Herring found significant gender differences in the distribution of adversarial

and attenuated/supportive postings, the guidelines for posting which governed the list, and the

values enunciated by the discussion group participants (Herring 1996/1999). These differences

existed regardless of the nature of the discussion group. Each style carries its own risk for

negatively impacting a group's effectiveness. The more adversarial style may silence those who

are uncomfortable with direct competition and personal denunciations. However, an

overconciliatory style may prevent discussion and exploration of existing differences and prevent

participants from further developing an understanding of beliefs and opinions that are different

from their own. Thus, the gender imbalance in the graduate seminar may have affected the

dynamic that developed in this specific on-line space.

3.2 The Author

The graduate seminar that is the focus of this thesis was the first class I entered as part of

my Masters studies. It was not my intention to make the course the subject of my thesis, and

although I had specific personal objectives related to the use of the bulletin board, I did not view

myself as a researcher in a formal sense. Instead, I was reveling in the unaccustomed role of

being responsible primarily for my own rather than other people's learning. My status in the

classroom was no different from that of the other students in the class. This is the perspective

that I brought to the think-aloud that I completed as part of my term paper, and this is also the

perspective that is included as part of the data for the study. Subsequent to completing the

personal interviews, I completed another course with a bulletin board adjunct, but this study is

not intended to deal with the activities of that class. To the best of my knowledge, the reflective

comments that appear in the "Results" are my own reflections made while I was participating in

the course.

3.3 Procedure

Several of the individuals who are participants in the study actively encouraged the author to use the class for her Masters thesis, thus making the initial approach from the participant to the researcher, the reverse of what would typically take place. As a result of this rather unusual situation, the initial contact with some of the participants took place prior to the study's design or to the Ethics Application being approved. Those potential participants who had not already discussed the project with the author were initially contacted by e-mail. All students who agreed to participate were provided with a consent form, signalling their willingness to participate, their right to confidentiality, and their right to withdraw from the study at any time. Students were interviewed individually on campus, at a time and location convenient to the subject. The written survey was completed at the beginning of the meeting, and the interview that followed was taped and transcribed.

A sample of an interview transcript is included in Appendix VII, and the tapes as well as completed surveys will be stored in a locked cabinet for a period of five years. The bulletin board protocols, however, present a unique problem. In addition to the lack of university procedures for storing and archiving bulletin board transactions or for maintaining their confidentiality, the bulletin board protocols cannot be altered to hide the identity of the participants, nor to remove the postings of the student who chose not to participate in the study. These issues are not unique to UBC, and remain to be addressed at the university level.

3.4 Equipment

The graduate seminar utilized the courseware WebCT, originally developed at the University of British Columbia and now commercially available to both the public and private sector. The software has a number of different components, including support for self- or

teacher-marked quizzes, chat and a bulletin board. Each course has its own unique website, homepage and course materials, all of which are created using WebCT. Students were assessed on their use of the bulletin board, although other features were available for the students' use at their own discretion. The course website also included extensive links to on-line materials related to the course content. The site could be accessed from any computer with an Internet connection and students accessed it from their home computers and/or from computers available within the department and college. All use of the bulletin board took place outside of class time.

The course website was built using the first version of WebCT. There are several potentially significant features of the courseware:

- WebCT allows students to view student entries or "postings" two different ways, chronologically or by thread. "Threaded" postings are organized by topic. A student can alternate between settings at will.

- Students can choose to view all postings, or only those that are unread. In version one, a single click can mark a previously read posting as "unread", causing it to show again in the listing of new postings.

- Students can search postings by the article number that is automatically assigned to each posting, the poster's name, the date the article was posted, the subject line, or by keyword.

- WebCT has a quote function, allowing students to incorporate text from the previous posting in their reply. The text from the previous posting is italicized, and the responding student can include any or all of the previous posting, and incorporate new text before, in the middle or after the previously existing text.

- Students can initiate messages from two locations on the bulletin board. They can create new threads by using the "Compose" button on the main bulletin board interface, or they can add an additional posting to a thread by using the "Reply" button at the top of each message.

All messages were stored and could be retrieved by the students at any point in the course; however, no changes could be made to a text once it had been posted. The

version of WebCT used for this course did not allow for the introduction of graphics but

students could attach documents to a posting.

The following visual shows what a student would see upon opening the bulletin board:

Figure 1

Bulletin Board Interface
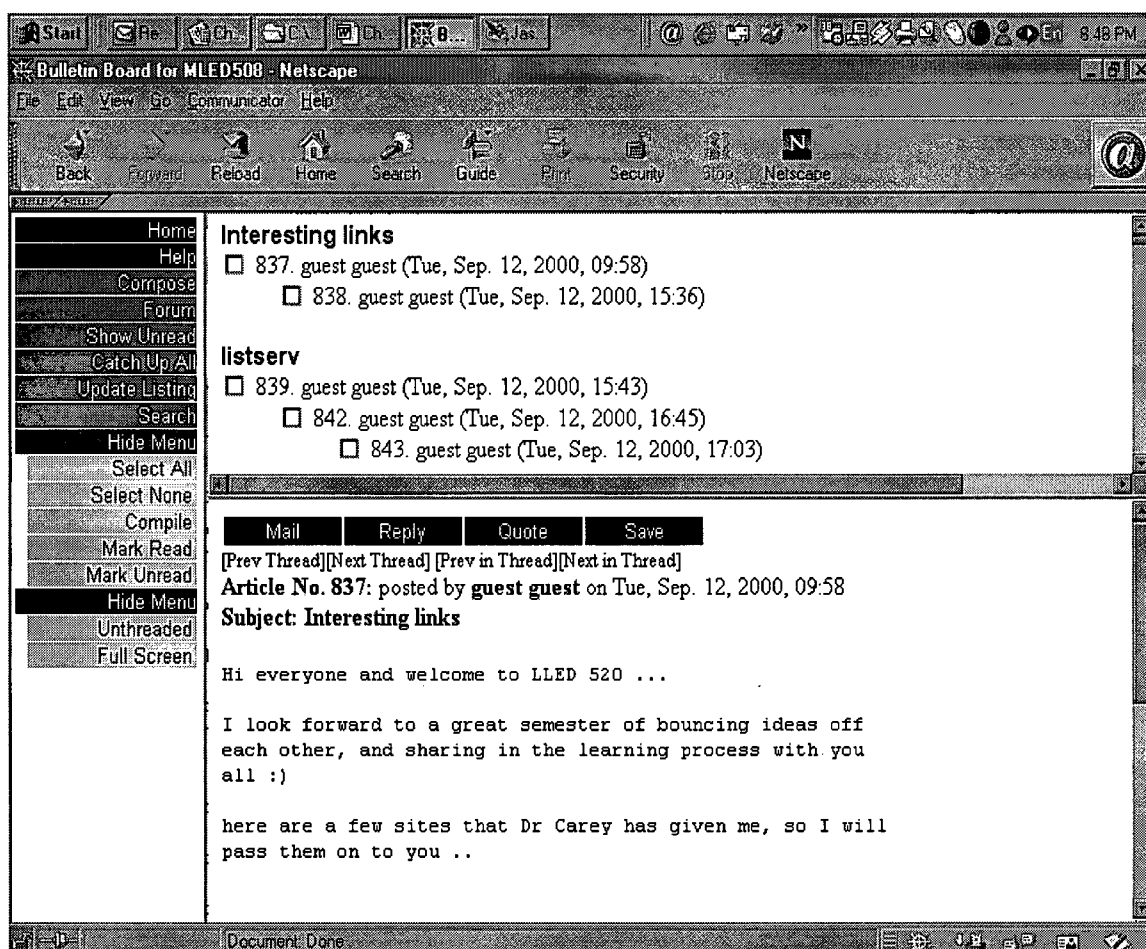
Half of the study participants had a high-speed Internet connection and accessed the

bulletin board from home. Only two of the students used university computers. Students did not

receive any formal instruction related to using the bulletin board, however, they were offered unlimited one-on-one help by the professor's assistant.

Figure 2

Students' Computer Ownership

Although students accessed the bulletin board from a variety of locations, using different types of Internet connections, it did not seem to affect student participation levels.
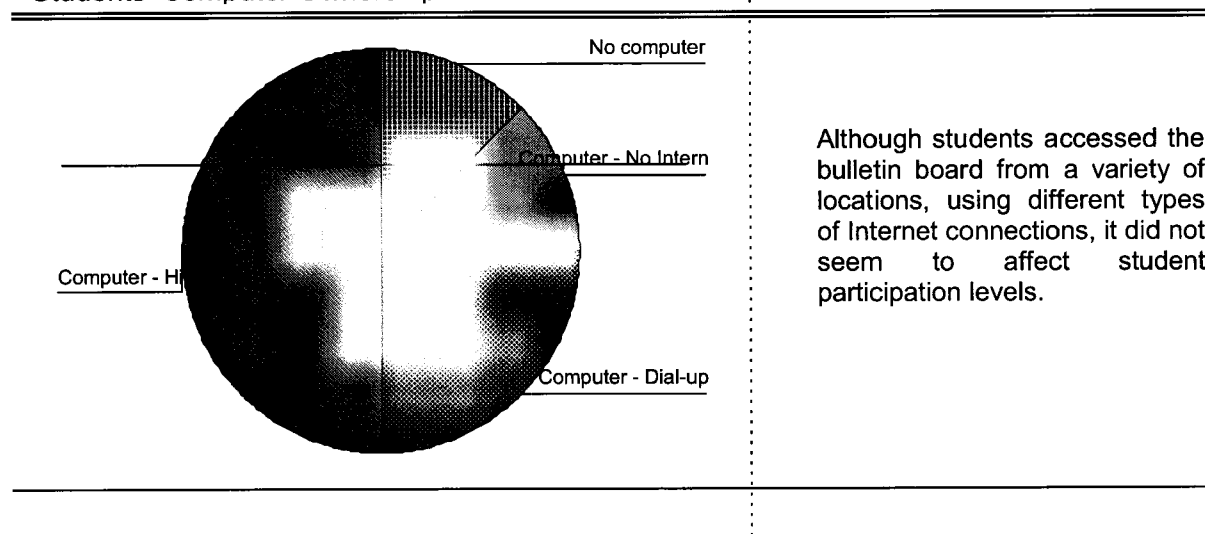
3.5 Setting

The study was conducted at large western Canadian university. The graduate level course was conducted as a seminar, and covered theory and research in Modern Language education. The course was the fifth graduate seminar that the professor had taught using a bulletin board adjunct and he was known to be interested in using technology in the classroom and in language instruction.

Students met on a weekly basis for two and a half hours on ten different occasions. During the face-to-face sessions, students were consistently given general encouragement to use the bulletin board to expand their learning. A total of 30% of the course grade was assigned to bulletin board interaction. Students were told that both the quantity and quality of their interaction would be used to determine their grade.

One individual enrolled in the class as a distance learner. Aura was located on the island of Grenada in the Caribbean for the duration of the course and did not participate in classroom discussions.

A selection of readings was assigned and students were expected to present and facilitate a discussion centered on one of the readings at some point during the course. Students were also encouraged to present additional articles of personal interest that related to the course content.

3.6 Data Collection

Data for this study was gathered through personal interviews, questionnaires, the author's think-aloud, and from the bulletin board protocol itself.

3.6.1 Bulletin Board Protocols

Bulletin board protocols, created and archived as part of the on-going administration and operation of the graduate seminar, form the core data on which this study is based. Researchers have examined bulletin board protocols from a number of different theoretical perspectives. Electronic conferences conducted by linguistic students at the University of North Carolina's Charlotte and Greensboro campuses have been the subject of an extensive linguistic analysis (Davis & Brewer, 1997; Davis & Thiede, 2000). Other analysis tools have included network analyses (Angeli, Bonk & Hara, 1998), calculations of lexical density (Beckett, Luo & Carey, 2000), and reflective interviews, as well as the quantitative analyses of postings (Kamhi-Stein, 2000; Zhu, 1998; Kang, 1998). However, researchers in both education and communication fields have noted the lack of generally accepted on-line discussion methodologies (Agneli, Bonk & Hara, 1998).

Before a coding protocol was established, the postings of two non-native speakers were examined to attempt to determine whether changes in language use had occurred, regardless of the cause of the change. Each individual's postings were printed separately, in chronological order and out-of-context, and examined for changes in the student's English language usage. This review was admittedly ad hoc, used solely to determine if coding the protocol for language use would provide useful data or insights. The postings were examined for errors per line of text over time and changes in the nature of errors made. One student's protocol showed no noticeable change over the length of the course. The other showed a marked reduction in a wide range of grammatical errors. The student had noted in class that upon seeing the errors in her initial postings, she had made an effort to check her work for grammatical accuracy. Recognizing that the classroom comment had provided more insight than the protocol into the changes in the student's writing, I decided to not to attempt a global analysis of changes in NNS language use.

The protocols were also examined for evidence to support the language gains that students had described in class. For example, students had described how they borrowed vocabulary or chunks of text from earlier postings and incorporated it into their own postings. The postings of the two non-native speakers were examined and the language compared to the language in the two postings that immediately preceded them. There existed only the most cursory evidence of any language borrowing, and the phrases or words that did repeat were commonplace enough that one would hesitate to claim that they were borrowed or acquired because of their previous use on the bulletin board. Therefore, any attempts to develop a coding protocol that measured students' change in language use were abandoned.

Bulletin boards and other forms of CMC may initially seem to overcome problems associated with capturing the nature of the communicative act. In reality, many of the same limitations continue to exist, and the frozen moment fails to capture the dynamic nature of the sender's internal thoughts or the interpersonal interaction (Jones, 1998b; Jones, 1999). The communicative act of posting to a bulletin board is situated in a particular time and place, an "interpretive moment", during which a range of factors may influence the individual's response to previous messages, their decision whether or not to respond, and their choice of how to respond. Attempting to ascribe intent by scrutinizing the messages alone carries a significant risk of error. Individual reflections on the objectives, nature, and content of a posting can be used to triangulate such an analysis. However, since this study was carried out several months after the course's completion, it was not possible to capture student's immediate reflections on their postings. Therefore, the choice was made not to use a cognitive model for coding discourse.

Instead, the protocol was coded and analyzed using a modification of a scheme developed by Rafaeli and Sudweeks that focuses on the interactivity evidenced in the bulletin board's use (1998). The use of the term "interactivity" is most prevalent within the field of informatic and media studies, and may be used to characterize the relationship between person and machine, person-to-person communications through an electronic/telecommunications channel, or interactions between an individual and the central content of an organization. (Jensen, 1999) Rafaeli and Sudweeks consider an on-line message that refers to at least two previous postings as an indicator of interactivity. For the purpose of this study, a posting's distance from the thread's original message will be considered an indicator of the overall interactivity of a bulletin board, and messages that neither initiate a thread or respond to a thread's initiation will be coded as

interactive. Because the coding scheme was developed for analyzing public bulletin boards, the coding items were adjusted to reflect the educational nature of the bulletin board under examination. The adjustments were derived from the coding scheme used by Zhu in his analysis of bulletin board usage. Coded data was analyzed using SPSS.

The unit of analysis in the coding scheme is the message, each of which are assigned a unique identification number by WebCT. A message may consist of a single sentence, or may contain a combination of questions or statements. An individual message may contain a number of conversational moves, and serve a variety of conversational tasks. Thus, each message may be coded for multiple variables. The terms message and posting are used interchangeably throughout the thesis.

The protocol was also reviewed for major and minor patterns of use that emerged over the length of the course, and for examples of the types of interactions or behaviours that students described as useful.

3.6.2   Written Survey

The written survey was administered at the beginning of the interview, and was used to gather demographic and historical data about the participant, as well as to identify factors that shaped the individual's use of the bulletin board. I did not complete a survey.

Participants were required to complete the questions in order, and were not allowed to change their responses. A combination of open and close-ended questions was used. Using Baym's framework for factors that influence the shape CMC, a total of forty-six possible influences on bulletin board use were identified, and students were asked to weight their

importance on an 8-point Likert scale. This data was entered into a separate SPSS database. All factors with an absolute Z value of more than "1" are addressed in the "Results" section.

3.6.3   *Interviews*

The interview provided an opportunity to gain a detailed and personal understanding of participant's perceptions and use of the bulletin board. An interview guide was used to provide the conversation a general direction, however, the questions were used to guide not to limit the discussion. All the interviews were conducted by myself and I attempted to explore specific issues and perceptions that surfaced in the course of the dialogue. The interviews ranged in length from approximately fifty minutes to slightly less than two hours.

I was a class participant, and chose to investigate this class partly because of fellow participants' encouragement. This presents a real possibility that the subjects' answers were shaped by their understandings of my attitudes and opinions. To attempt to mitigate this problem, though recognizing that it could not be completely eliminated, participants were told that I was interested in their honest opinions and that they should not consider the opinions of the either the professor or me when responding to questions. They were asked to respond as if they were being interviewed by a stranger, which one subject did so well that she referred to me in the third person throughout the interview.

Although the author was interested in the importance that students placed on peer collaboration in their on-line work, language related to concepts such as community and cooperation was avoided. Zack and McKenney quote Kling as follows "Many CSCW (computer-supported cooperative work) articles impede our understanding of the likely use and impact of CSCW since they rely on concepts with strong positive connotations such as "cooperation", "collaboration" and images of convivial possibilities to characterize workplace

relationships while understating the levels of conflict, control, and coercion – also common in professional workplaces." (1995, pg. 400) These problems are equally apparent in studies of cooperative learning, and CMC use in the language classroom. The majority of the questions in the interview guide were open-ended, and an attempt was made to explore a lack of impact as well as both the positive and negative aspects of bulletin board use.

One student who participated in the study was not interviewed, due to her residence in Grenada and the difficulty of scheduling an interview time while she was in Vancouver for summer courses. Tanya was interviewed twice. During the first interview, the microphone failed. Tanya was kind enough to consent to being interviewed a second time, however, readers will notice some carryover from the first interview in the transcripts.

3.7 Data Analysis

The bulletin board was only one of the requirements of students who participated in the graduate seminar, but it is the bulletin board, not the class itself, which is the focus of this study. Other aspects of the class' interaction enter into the discussion only as they relate to the bulletin board. Information from the bulletin board, interviews and think-aloud are examined for emergent major and minor themes (Strauss & Corbin, 1994), with an emphasis placed on developing a thick and rich description of the complex set of variables that interacted in this specific environment (Geertz, 1973). Descriptive statistics are used to represent the survey and discourse analysis findings.

In summarizing the data, the sections were initially written without reference to my think-aloud. Only after this had been completed did I refer back to my personal tapes and add

comments from my perspective of the class. This was done in attempt to filter my own set of

bias and priorities from the representation of the class discussion.

3.8 Limitations

Several limitations to the study must be highlighted at the onset of the research:

- The researcher for this study was a student in the class. Although no interviews are free from bias, the researcher's interpretations of the protocols and interviews cannot help but be influenced by the personal lens through which she views the class. The researcher had facilitated in on-line learning environments unrelated to language education prior to participating in the course, and those preconceptions about the potential of on-line environments for second language acquisition were carried with her into the program.

- All of the participants in the program had experience in the area of language education, and brought with them a set of skills and knowledge related to second language acquisition and instruction. The participants' previous professional knowledge related to language learning may have affected how the participants used the bulletin board to facilitate the development of their language skills, and how they viewed bulletin board activities.

- Qualitative studies such as this are intended to provide detailed descriptions of one set of participants in one setting, existing within a fixed period in time. Although such studies may usefully inform other educators and instructors as to the range and types of issues that may be pertinent to their own settings, the results cannot be extended and directly applied to other learning situations.

Chapter 4: Results

If computer-mediated communication creates spaces, then the potential uses of a bulletin board are as wide-ranging as those of a classroom or any other physical learning space. The latitude provided to students in the class under discussion provided few, if any, limits on the students' use of the space. Although it is impossible to fully address all of the influences that shaped the on-line discussion, I will attempt to examine the students' description of their bulletin board usage as well as the actual bulletin board protocol to gain understandings of the "what" and "how" of the students' interactions.

4.1 The On-line Discussion

4.1.1 The Postings

A total of seven hundred and fifty (754) messages* were posted on the bulletin board during the course, all but fourteen between September 12 and December 7. Of these, one hundred and twenty-three (123) were posted by the professor. Thus, on average, students posted just under five entries to the bulletin board each week. However, the students' postings were not distributed equally over the length of the course, as indicated by the following graphs. These variations in weekly posting activity existed for both native and non-native speakers.

Figure 3

Postings by Week
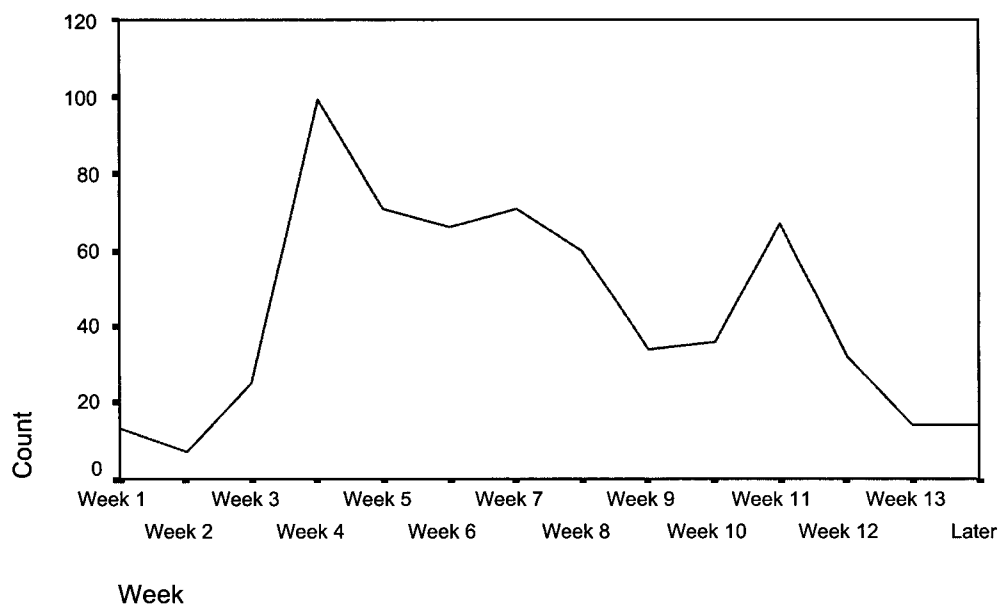
• In addition to the professor's postings, the activity of the student who chose not to participate in the study are included in the total number of postings, total number of threads, and in the average number of messages posted and read by native and non -native speakers. All other results, including those represented in the graph above, represent only the activity of the eight students who participated in the study and the author.

Figure 4

Number of Postings per Week

Native versus Non-native Speaker
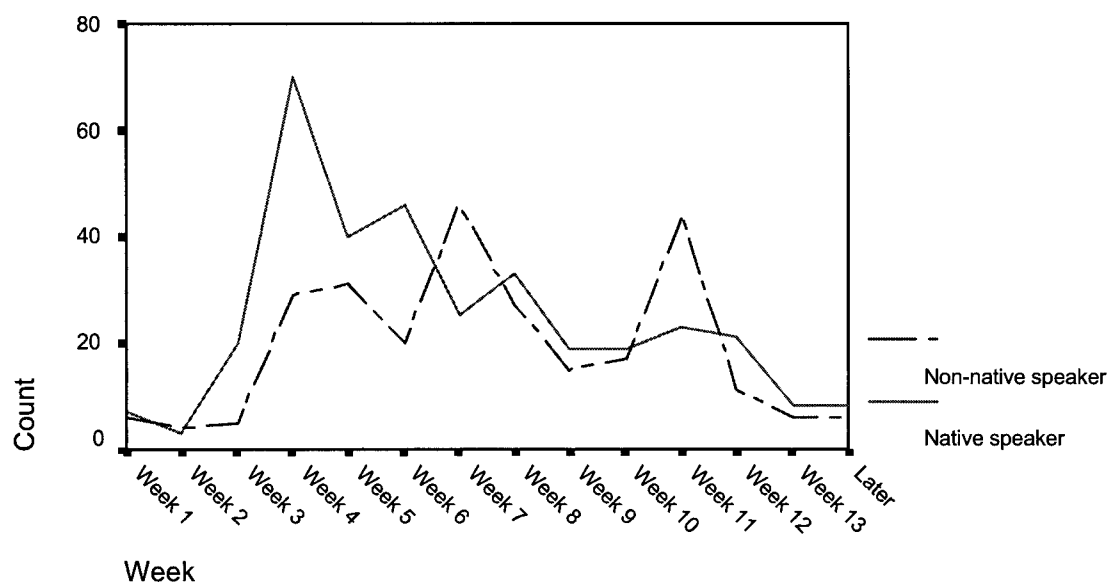
A comparison of the means for "Number of Messages Posted" and "Number of Messages Read" using a two tailed t-test shows no statistically significant difference between the levels of posting and reading activity for native and non-native speakers, although the large standard deviations and small sample size may obscure real differences in the posting behaviours.

Table 1

<u>**Posting Activity - Class Averages**</u>

	Non-Native Speakers		Native Speakers		Total	
	<u>**M**</u>	<u>**SD**</u>	<u>**M**</u>	<u>**SD**</u>	<u>**M**</u>	<u>**SD**</u>
Number of Messages Posted	66.25	19.38	60.33	45.54	62.7	35.87
Number of Messages Read*	642.5	137.51	753.83	73.41	709.30	112.26

* Students experiencing technical difficulties will sometimes log onto the bulletin board using a "Guest" password rather than their own. When doing so, students sign their names at the end of the post. Thus, statistics for "Number of Messages Posted" calculated by WebCT can be adjusted to include those created using the "Guest" password. "Number of Messages Read" cannot be similarly adjusted, and so the number is somewhat understated.

There were one hundred and nineteen (119) threads initiated during this graduate seminar, of which sixteen (16) were initiated by the professor. The professor's initiations of threads can be characterized as follows:

- Two (2) that welcomed students to the class and pointed out the on-line links to resources.

- Five (5) that informed students of upcoming lecture series.

- Three (3) comments/questions to which no one responded.

- Six (6) comments/questions that evoked some form of response. Two of these informed students about changes in the class schedule, one received

three responses from native speakers, and three resulted in a thread that received at least several posts.

Of the one hundred and four threads (104) threads initiated by students, sixteen (16) received no response.

Twenty of the threads initiated by students have a subject line directly related to an article that was discussed in the classroom. However, the threads' subject headings often have little to do with the thread's content, as indicated in the following example. The professor was out of the country for a conference, and had suggested that the students hold the class as a synchronous "chat" on the bulletin board. He initiated a thread to follow-up on this suggestion. As the thread developed, Aura shifted the conversation and tried to find a time when people were available to use the website's chat feature.

Article No. 1183: [Branch from no. 1181] posted by Diane on Sat, Oct. 21, 2000, 16:03
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Hi Aura,

I'll check everyone's availability for 1:00 pm, Wednesday, October 25 and let you know.

Have you noticed that our postings are beginning to take the form of an e-mail? You signed off with a "Thanks, Aura". I checked some of your earlier postings. Sometimes you signed off with your name, but my quick sample indicates usually you didn't. When I replied to your earlier posting regarding chat times, I started to sign-off with "Take Care" which is my usual e-mail closing. Then I caught myself, and wondered about whether or not this was "correct form" on a bulletin board.

Aura, and everyone else, any thoughts?

And by the way, Aura - take care.

Article No. 1186: [Branch from no. 1183] posted by Julia on Sat, Oct. 21, 2000, 19:50
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Dear Diane,

Diane, you raised very interesting point. I noticed very similar case while I was involving in the conversation on the bulletin board last year. I used to sign -off with "take care", "cheers", "thanks", and so on. I felt I didn't complete my message without the fo rmal expressions. I presupposed those markers meant my attitude expressing politeness in formal writing. The writing style on the bulletin board is in between informal and formal. On the other hand, some of classmates used more casual and colloquial expressions like "seeya" in their writing. Their postings without sign -on and sign -off seemed to be more direct and concise to me. However, I felt I had the different attitudes when having those markers and not having them.

What do you think? Have you ev er noticed your changes when you started to sign -off?

Article No. 1188: [Branch from no. 1187] posted by Julia on Sat, Oct. 21, 2000, 23:39
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS [Excerpt]

Hi Diane,

Sometimes, when I see the thread, I wo uld think about why he/she wrote this message like is it for the sake of writing, is it just for the response because of being addressed to him/her, is it for adding the commentary to the thread, or etc. When I read your writing, I feel how my analyzing sy stem is too simple and boring.

According to my experience regarding your concern in expressing the solutation, I have never felt left out of acting conversation even if my name was not there because I believed we were already invited. I was very excited at meeting the different way of saying disagree. Also I could generate a better idea even through the one -to-one debate where I was away. I think everybody is ready to jump into the thread if he has interest in the discussion.

I need to say like this "Cheers".

Julia

Article No. 1207: [Branch from no. 1189] posted by Meg on Mon, Oct. 23, 2000, 15:01
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Hi Diane, Julia, Aura... and ALL :)

Some good points brought up about salutations, closing remark s (:o)) and how conscious we are of including/excluding class members ..

Diane, you forgot one possibility in your quest to pinpoint the reasons someone might not join in a particular thread .. some of us (yes, i am talking about me!) have been negligent i n any participation on the bulletin board, so although you do not hear from us, it is for no other reason than that we have not yet read and contemplated all the great ideas that come up in these conversations/discussions/debates !!!

i hope to butt in a little more often from now on :)

keep typin'

Meg

Article No. 1214: [Branch from no. 1207] posted by Julia on Mon, Oct. 23, 2000, 23:10
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Dear Meg,

Yes, I agree with you. We may get a belated response, since the bulletin board has no time limit. When I open the screen, my eyes are widely open with big smile (but sometimes with being nervous about the argument) if I see the response to my posting. I can't take my eyes off the message until I finish reading. The more I have response, the more my motivation to post message goes up. I sometimes feel that I start selling my products when I click to post. Then, I try to see how many buyers are interested in my products. I think my customers aren't happy with my items as I can't get any response from them. However, my pleasure will be double when unexpected (late) customers visit my store to order or request old fa shion which I already forgot I had made it. And I think my business is not a failure.

Julia

Article No. 1219: [Branch from no. 1183] posted by Aura on Tue, Oct. 24, 2000, 14:44
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Hello Diane and all yo u readers out there,

I think we are touching here on the "pragmatics" of on -line interactions (if such a term exists). I was only semi-aware of the fact that I had incorporated a closing into my message. I think its existence (for me at least) is a reflec tion of the fact that I feel there is a relationship of sorts developing among us as collaborative partners on this bulletin board. Initially, some of my messages (both on this BB and another graduate seminar) were posted without a greeting and without a n ame at the end, I suppose because I felt no connection to the BB members and did not feel socially responsible for greeting or signing off. As our BB relationship has developed, I feel a sense of obligation to greet and sign my name -- I feel I'm being rude if I don't. If any recent messages go with out a greeting, it's because they are a direct and quick response to someone, an aside, rather than a message I feel I've invested a great deal of time in. I think after our chat room adventure, I felt a greater sense of obligation to you and that's probably why I included the "thanks".

By the way, any news on chat room participation for Wednesday?

Regards, Aura

Article No. 1244: [Branch from no. 1230] posted by Tanya on Wed, Oct. 25, 2000, 14:57
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Dear all,

I am sorry I could not participate in the chat, but I hope, we'll do it again. I read all exhange postings under this subject and was surprised how many people contributed to this thread. Daine, it shows that we are all tuned!

Article No. 1246: [Branch from no. 1244] posted by Aura on Wed, Oct. 25, 2000, 15:20
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Hi Tanya, Sorry you couldn't join us -- it was a nice chat. It's so funny, but everytime I read one of your postings, I hear your voice inside my head, and see your smiling face!

Aura

Article No. 1259: [Branch from no. 1246] posted by Tanya on Thu, Oct. 26, 2000, 16:25
Subject: re: NO CLASS ON MONDAY FOR VIRTUAL CLASS

Dear Aura,

It is so amazing - how could you know that my smile and voice are the most peculiar things about me (at least this what I was told by some of my friends). Is it something about your telepathic skills, my writing style which reflects my personality or possibilities of CMC to facilitate our imagination?

Thus formal markers of thread content did not accurately represent the developing conversation.

The excerpts from the bulletin board protocol also illustrate how topics and conversational objectives shifted over the length of a thread. A thread that was begun to deal with a practical organizational task eventually included group reflections and social interaction. The entirety of this particular thread included discussions on several course-related topics, as well as a class summary for a student who had been absent the previous week. It is typical of how the longer threads circled and wove.

The variety within threads was matched by the variety across threads. In the same manner that a classroom conversation may shift to address the immediate needs or circumstances of the students, parallel bulletin board discussion threads covered topics from problems with passwords, to references for a term paper, to the organization of a end-of-class dinner, all of which occurred simultaneously with academic discussions connected to the course content. The unthreaded listing of postings for October 13 provides a sample of the variety of activities that might be carried out in a single day:

Figure 5

Unthreaded List of Postings – October 13, 2000

1105. re: Working with change *Diane* (Fri, Oct. 13, 2000, 00:35)
1106. web link *Bruce* (Fri, Oct. 13, 2000, 10:35)
1107. re: web link *Diane* (Fri, Oct. 13, 2000, 15:21)
1108. re: Working with change *Julia* (Fri, Oct. 13, 2000, 18:25)
1109. re: web link *Bruce* (Fri, Oct. 13, 2000, 18:26)
1110. re: web link *Julia* (Fri, Oct. 13, 2000, 18:32)
1111. Monday class (10/16) *Julia* (Fri, Oct. 13, 2000, 18:52)
1112. re: web link *Bruce* (Fri, Oct. 13, 2000, 19:46)
1113. re: Cyberspace and Language Classrooms *Dominique* (Fri, Oct. 13, 2000, 22:03)
1114. re: Monday class (10/16) *Stephen Carey* (Fri, Oct. 13, 2000, 22:04)
1115. re: On-Line Language Education *Dominique* (Fri, Oct. 13, 2000, 22:05)

Thus, the bulletin board was used for a variety of tasks and activities including registration procedures, provision of technical support, class discussion and class organizational tasks.

Many of the earlier studies of adjunct bulletin board use have focused on classes in which one or more students were responsible for posting weekly discussion questions. Students in this class had no specific responsibilities for initiating discussion threads. A review of the one hundred thread initiations included in this analysis shows that most threads were not created through the use of questions.

Table 2

Discussion Thread Initiations Containing...

	#	P of Total
Questions	26	26
Statements	63	63
Questions and Statements	11	11
Total	100	100

Seventeen (17) of these threads, five (5) using questions and twelve (12) using statements, concern technical questions related to the bulletin board's use.

Question use was not limited to the initiation of a thread, and .274 of all messages contained a question. A week-by-week calculation of the same statistic shows that the weekly proportion of messages containing a question each week lay within one standard deviation of the overall mean, with the exception of the second week, when .57 of the week's messages contained a question. Questions served a variety of purposes.

Table 3

<u>**Use of Questions**</u>

	Non-native Speakers		Native Speakers		Total	
	#	P^1	#	P^2	#	P^3
Request a fact	28	.105	41	.120	69	.113
Request an opinion	24	.090	61	.178	85	.140
Request feedback (including grammar)	7	.026	11	.032	18	.030
Confirm a fact (echo)	5	.019	2	.006	7	.010
Acknowledge a speaker	0	.000	4	.012	4	.007

[1] Proportion of NNS postings. [2] Proportion of NS postings. [3] Proportion of total postings.

Questions generated answers, but it is interesting to note that more of the facts and opinions posted by students were unsolicited rather than in response to a question.

Table 4

Use of Statements

	Non-native Speakers		Native Speakers		Total	
	#	P[1]	#	P[2]	#	P[3]
Respond to question for fact	35	.131	58	.170	93	.153
Respond to question for opinion	27	.101	60	.175	87	.143
Unsolicited fact	77	.288	88	.257	165	.271
Unsolicited opinion	70	.262	117	.342	187	.307
Present/summarize reference	27	.101	71	.208	98	.161
Acknowledge speaker/emotional needs	31	.116	42	.123	73	.120
Social	105	.393	88	.257	193	.317
Offer feedback	28	.105	22	.064	50	.082

A description of the coding categories is included in Appendix V.

As might be expected in a classroom discussion, postings often included opinions without specific reference to external sources or support for the position being taken. The students' most frequent reference for both comments and questions was their own personal experience.

Table 5

<u>**Posting Content**</u>

	Non-native Speakers		Native Speakers		Total	
	#	P[1]	#	P[2]	#	P[3]
Personal	59	.221	94	.275	153	.251
Professional	6	.022	25	.073	31	.051
Third Person	3	.011	14	.041	17	.028
Course Content/Readings*	8	.030	26	.076	34	.056
Another Course*	4	.015	6	.018	10	.016
Other (includes technical issues)	38	.142	41	.120	79	.130

* Does not include postings where a student mentioned a reading but did not specifically use its content in their discussion.

[1] Percentage of NNS postings. [2] Percentage of NS postings. [3] Percentage of total postings.

Students were neither requested nor required to create on-line summaries of the articles they chose to present in class; however, all of the non-native speakers wrote at least one extensive on-line summary. These summaries typically did not include discussion questions.

The protocols contain evidence of periodic self and group reflection. Statements were coded as reflective if they included some form of analysis or evaluation. A mere description of group or individual behaviour was not coded as reflection. Incidents of reflection on group processes and/or dynamics, an example of which is given in the earlier protocol excerpt, remain relatively constant throughout the length of the course. The first message containing a group reflection occurs in Week Three, and in Weeks Five through

Eleven between four and seven messages contain some form of reflection on the group's interaction. Overall, 6.2% of messages contain a group reflection, compared to 14.6% of messages that contain a personal reflection. However, a significantly higher percentage of messages contained personal reflections early in the course. The percentage of messages containing a self-reflective comment in Weeks One, Three, Six and Seven lie outside the 99-percent confidence interval.
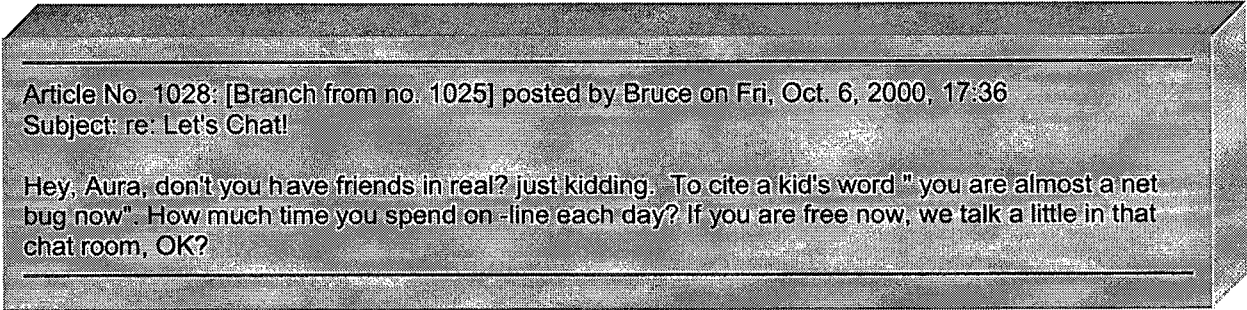
Figure 6

Proportion Containing Self-Reflection

Week
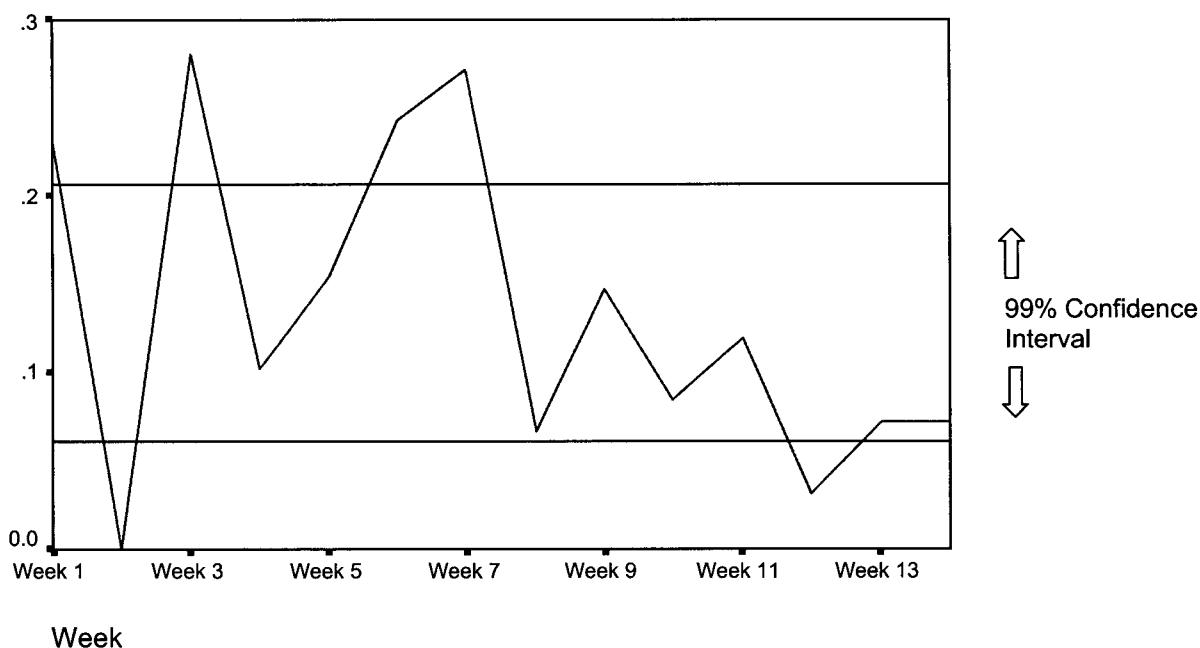
A review of the protocol, as well as the corresponding discourse analysis, provides evidence of the different ways in which students chose to enter into the bulletin board discussion. It is not the intent of this thesis to examine the stylistic differences and similarities of the course participants. However, several global observations can be made. For example, close to half of one student's postings make specific reference to her family, related either to her own or her son's language learning. Another student regularly used

light-hearted or humourous comments to enter into the discussion, posting short comments

such as the one below:

Article No. 1028: [Branch from no. 1025] posted by Bruce on Fri, Oct. 6, 2000, 17:36
Subject: re: Let's Chat!

Hey, Aura, don't you have friends in real? just kidding. To cite a kid's word " you are almost a net
bug now". How much time you spend on -line each day? If you are free now, we talk a little in that
chat room, OK?

phrases such as "I think" or "perhaps," that communicated strong stances on technology,

culture, globalization and the role of English in the modern world. Almost all were general

opinions, not supported by specific examples or references. Her comments made a strong

positive impression on her classmates, and both the protocol and the interviews contain

references to the image that she projected.

My point-of-entry into the discussions is clearly evident in the headings of my first

three postings, each of which initiated a new thread: "The Impact of the Facilitator in On-line

Learning", "Creating an Effective Learning Team," and "Working with Change." I entered

discussions on language learning and language learning with technology from a position and

with language informed by my prior experiences.

Directly or indirectly, studies of CMC in educational settings make reference to the

social content of the postings. A significant number of messages contained content that

could be classified as social, a category that includes expressions of gratitude for responses to

questions, or for the provision of links or other sources of additional information. The

percentage of messages containing social content increased over time.

Figure 7

Proportion with Social Content

99% Confidence
Interval

Week
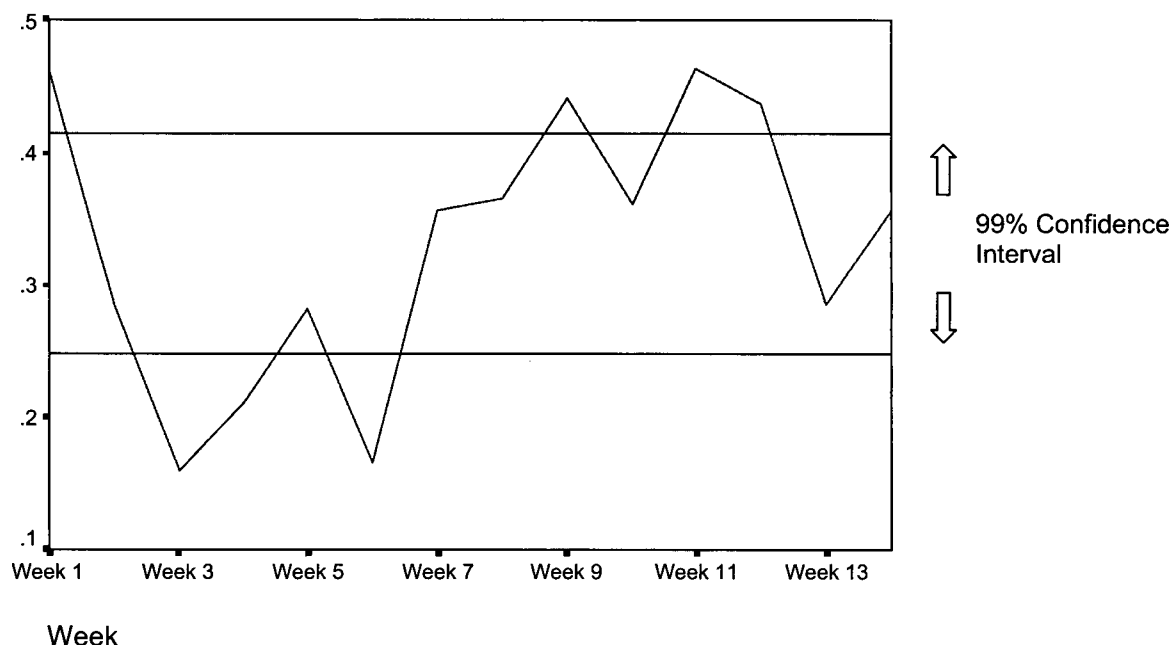
Despite the quantity of social messages posted to the bulletin board, they did not meet the needs of Aura, located in Grenada. On several occasions, she instigated conversations using the chat feature that was included in the website. Although she attempted to find a time when all her classmates could participate, the chats involved her and one or two Vancouver students. There was no formal requirement that students use the chat feature, nor were marks allocated for its use.

Forms of address and closings are two of the features of CMC that are sometimes used as indicators of the development of community, and community-specific genres. Researchers such as Rafaeli and Sudweeks use them to identify the existence of group norms. Theoretically, if community is developing among bulletin board participants, the protocol would show evidence of the evolution of group communication norms. The sensitivity of class participants to conventions of address was evident in the earlier protocol excerpt.

However, as indicated in the following graphs, there is little surface evidence of norming or

changes in how the messages were addressed or in how the students closed their messages.

Figure 8

Forms of Address
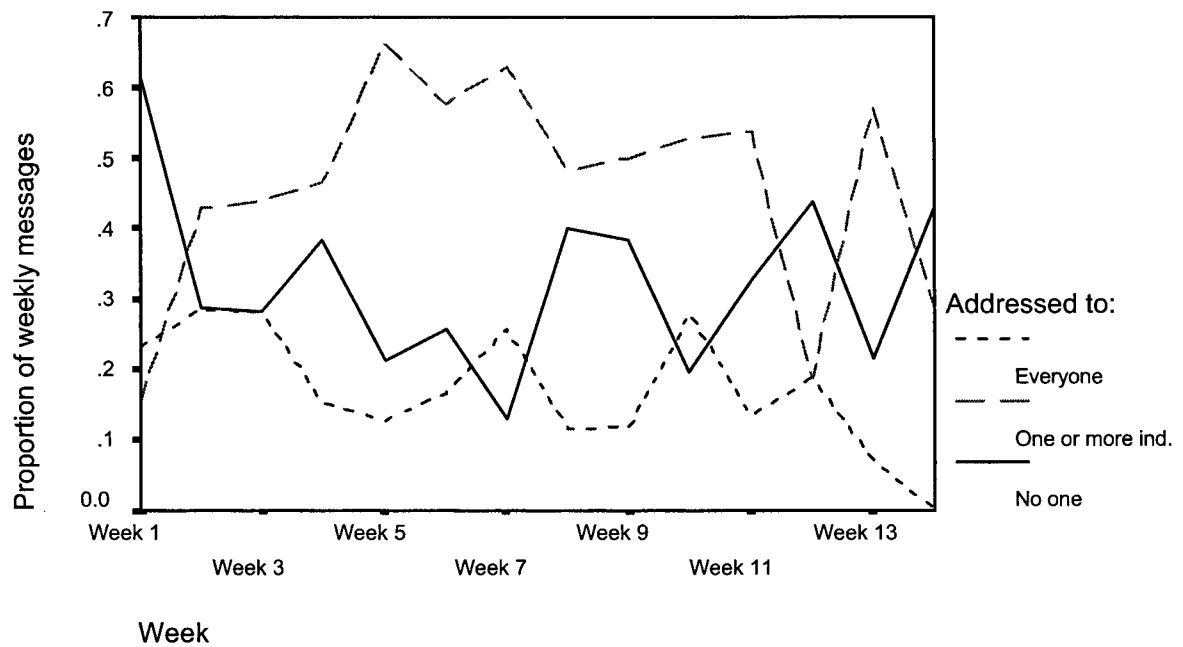
Proportions do not total 100% in the final three weeks, as responses to the on-line course evaluation are not included.

Figure 9

Forms of Closing
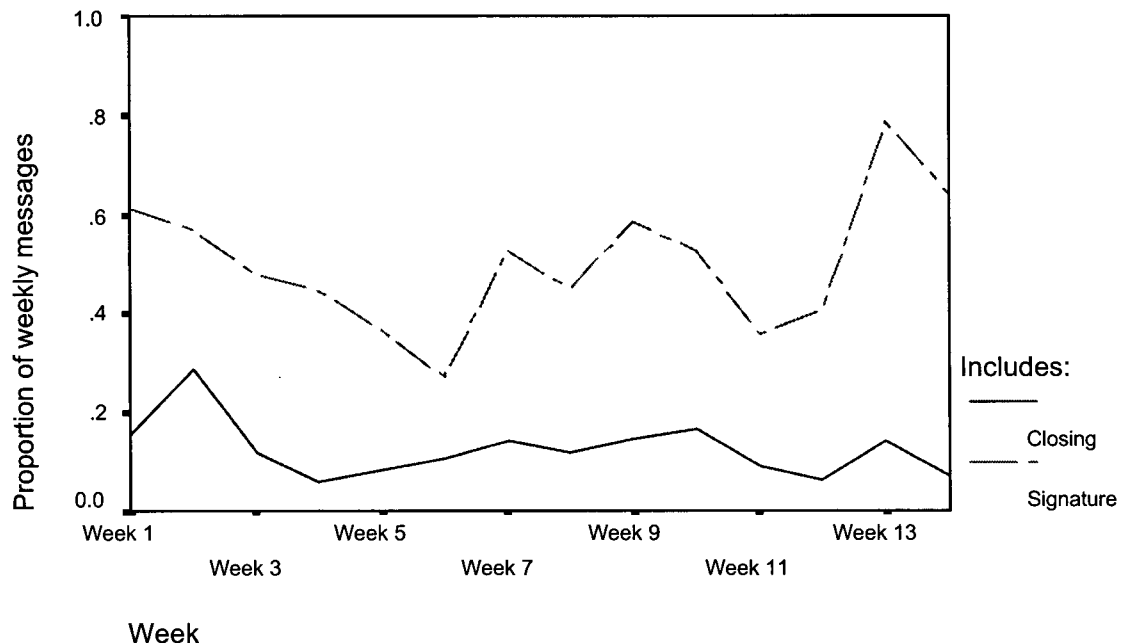
As described in the section on "Methodology", the bulletin board was coded to determine its degree of interactivity. The more messages that are not initiations of threads, or direct replies to the initiations, the greater the degree of interactivity. Of the six hundred and nine (609) messages analyzed, three hundred and seventy-nine (379) or 62.2% met this criteria. An additional one hundred and fifteen (115) or 18.8% were replies to thread initiations. A lengthy thread would look like the following:

Figure 10
Threaded List of Postings

Second Language Retention: xxxxx 2, 3, 5
   854. Bruce (Sun, Sep. 17, 2000, 23:10)
   855. Professor (Mon, Sep. 18, 2000, 15:19)
   864. Julia (Fri, Sep. 22, 2000, 06:39)
      875. Bruce (Fri, Sep. 22, 2000, 23:55)
   934. Meg (Sun, Oct. 1, 2000, 21:28)
      938. Bruce (Mon, Oct. 2, 2000, 08:03)
         955. Meg (Tue, Oct. 3, 2000, 12:46)
      939. Bruce (Mon, Oct. 2, 2000, 08:13)
         956. Meg (Tue, Oct. 3, 2000, 12:47)
            966. Professor (Wed, Oct. 4, 2000, 15:36)
               973. guest guest (Wed, Oct. 4, 2000, 21:16)
                  1121. Julia (Sat, Oct. 14, 2000, 21:42)
           988. Tanya (Thu, Oct. 5, 2000, 15:53)
             1053. Meg (Mon, Oct. 9, 2000, 19:02)
               1055. Bruce (Mon, Oct. 9, 2000, 22:07)
                 1071. Meg (Tue, Oct. 10, 2000, 15:00)
                   1076. Bruce (Tue, Oct. 10, 2000, 22:17)
                     1101. Julia (Thu, Oct. 12, 2000, 21:44)
                       1131. Zara (Mon, Oct. 16, 2000, 00:18)
                   1209. Meg (Mon, Oct. 23, 2000, 15:09)
                     1220. Tanya (Tue, Oct. 24, 2000, 18:46)
                       1235. Julia (Tue, Oct. 24, 2000, 23:08)
                         1236. Tanya (Wed, Oct. 25, 2000, 13:31)
                           1252. Julia (Wed, Oct. 25, 2000, 19:50)
                           1257. Tanya (Thu, Oct. 26, 2000,
16:07)
                              1261. Audrey (Thu, Oct. 26,
2000, 17:00)

Note that the discussion thread continued for over a month, from September 17 until October 26. 2000. The messages analyzed by Rafaeli and Sudweeks, which originated from three networks and 32 threaded discussion groups, contained an average number of interactive messages just under 10%, with the percentage of interactive messages among the groups studied ranging from just under 10% to 40 %.

Thus, the bulletin board was the site of significant activity, and a location in which students completed a variety of tasks. Thread development did not follow an IRE pattern, and the threads show a high degree of interactivity. Personal opinions and experiences

dominated the discussions. Increasingly high levels of social interaction are evidenced over the length of the class, but traditional indicators of the development of on-line community norms do not necessarily support the existence of community.

4.1.2 The Process

The professor said, "Use it." If someone placed a group of people in a room and said, "Use it" where would they begin? At least one student did not place a great deal of importance on getting on-line and interacting, despite thirty percent of the course grade being allocated to bulletin board participation.

Oh, yeah, he, uh, well at the beginning he did not encourage us. Uh, and I thought it's not necessary to go there, it's not a big deal, it's not, uh, important, so I, uh, uh, just took everything down and forgot about it and then people were discussing this in class, if they went there, you know, and, uh, then I thought perhaps I should do that, and, and what, what is it, something, uh, I became curious but I was always thinking why he did not, um, emphasize, you know, importance of going there. I think perhaps because many who took this class already done that, had already done that, maybe half of the class, so then you and he just, you know, thought that, he maybe addressed this, uh, he was too thinking only of these people who already participated, and he did not, uh, somehow he ignored those people who never participated before, maybe, this is one version. Another, another one is, that, uh, it's just his nature, he's not pushy. (Tanya)

Another student's initial response to the bulletin board was shaped by her attitude towards technology, and she approached the bulletin board with some intrepidation.

Well, um, in the beginning I was rather hesitant when it came to using the computer technology because I, first of all I had a negative attitude to computers in the teaching and learning environment because I thought that they represented the, um, non-human or, not inhumane but, you know, sort of the non-human, um, uh, aspect of such a humane activity such as teaching and learning and, uh, so I just didn't see how that technology could fit in and really help us, um, so and also I, I did have some previous experience using computers but those experiences were fraught with frustration and, um, a, a feeling of being overwhelmed and always being behind... (Zara)

However, others perceived the professor as strongly supporting the use of technology in the language classroom, and enthusiastic about the value his students derived from using a bulletin board.

In terms of (the professor's) approach to introducing the online component of the course, he was a pusher from the first phone conversation that we had a month before the course started.   Excerpted from Meg (2000,October 1). Working with change [Msg 935.]

Meg, who had used a bulletin board in a previous graduate seminar, was the first person to post on the bulletin board, and she included links and other information that had been supplied by the professor. A total of eight entries were posted on the day after the first class,

including several entries by a student just beginning his Masters program. Tanya added her first posting to the bulletin board three days after Meg posted her first entry. It took slightly more than three weeks before Zara was visible on the bulletin board.

Students had almost unlimited latitude to shape the interaction to their own ends. However, most students in the graduate seminar had neither learning goals nor clear objectives for what they wanted to accomplish using the bulletin board. This was true even for students who had previously taken courses with the same professor, and knew how the bulletin board would be used in the seminar. As the first poster indicated when asked whether she had any personal objectives related to her bulletin board use.

"Um, I really want to give you the right answer but the answer is no, no."
(Meg)

Another student who had previously studied with the professor gave a similar response, as did an experienced user of CMC who was just beginning her Masters program.

I had no idea what I was gonna face, you know. As usual, I go into things blindly. I just, like, okay computers, technology, yeah, it's a, I should know something about this. I'm a teacher, right? Teacher going into things blindly most of life. Oh no, don't (unclear). Um, so, yeah, I really didn't know what to expect so because I didn't know, I didn't really have any specific learning objectives, you know, informally... (Zara)

No, not at all. It was purely just to, it, it was, primarily it was a motivator. It just stimulated me. It was like really, intellectually I found it really stimulating. (Dominique)

Two students who had previous experience with on-line learning and electronic bulletin boards did establish goals and/or objectives for themselves prior to the course commencing; however their interest in the dynamics of on-line interaction took very different forms. For one student, the focus was on observing the interactions of others.

> *Because I already had experience three times previous, previously three times experience using the WebCT bulletin board, so at that time I just wanted to look at the other participants' responses so I was not an active participant, truly. So, however, anyway, I tried to experience different kinds of, ummm, experiences for my classmates from the (graduate seminar), especially I focus on looking at the difference between native speakers' participation and NNS' participation. (Julia)*

For myself, my objectives were more action-oriented. In my previous experience as an on-line facilitator, I had observed the impact of individual participants on the quality of the discussion and on the group's learning. My personal hypothesis was that an individual could have a greater impact on an on-line group from the position of participant than from the position of facilitator. From Saskatoon, I had "sat in" on the bulletin board discussion of one of the professor's previous courses, and had observed both how the professor positioned himself in the discussion and how the conversation unfolded. I enrolled in the graduate seminar because it had a bulletin board adjunct, and because I wanted to see what I could do from the position of participant. In particular, I was interested in finding ways to quickly move the conversation beyond the social level, to maximize the participation of all students, and to create an environment in which students supported and expanded each other's

learning. I had discussed these issues extensively with professional and personal acquaintances prior to relocating to Vancouver, and these interests shaped my first postings.

Despite most students not having objectives for their bulletin board use, the student surveys indicated that personal objectives were one of the most influential factors on students' use of the bulletin board.

Table 6

Factors with a Strong Influence on Students' Bulletin Board Use

Factor	Mean	SD	Z
My personal objectives for the course	6.13	.64	1.27

Note: Factors were rated on a 8 point Likert scale, with "0" representing "No influence" and "7" representing "Strong influence.

There are several possible explanations for the differences reported in the interviews and the survey including:

- students did not translate their global personal course objectives into objectives for their bulletin board use;

- students' objectives for the course evolved over the duration of the thirteen weeks, influencing their day-to-day interaction, but not resulting in specific objectives for their overall bulletin board use; and,

- students' goals for the course exist only in retrospect, and therefore could not be translated into goals and objectives for bulletin board use, which was the question posed to the students in the interview.

None of the data gathered either supports or detracts from any of these or any other possible explanations of the differences in the interview and survey data.

First postings are not easy. As noted by other authors, participants are very conscious

of the permanence of their postings, and there is a sense of being both exposed and judged.

An opportunity to discuss my concerns arose early in the discussion, and I posted my earlier

reactions as a way of signalling to others that their own fears, if they had them, were shared

by their classmates.

Article No. 868: [Branch from no. 863] posted by Diane on Fri, Sep. 22, 2000, 18:43 [Excerpt]

Subject: re: Creating an effective learning team

I put considerable thought into my initial posting on the Asia -Pacific Narratives bulletin board.....I would not be able to access their non -verbal responses, the involuntary blinks of the eye, leaning backwards and forwards, smiles, frowns, nods, etc. As well, I didn't know anything about the people who were participating in the class. I couldn't select my initial words or thoughts based on the audience for my message, nor could I adjust my message based on the response I was eliciting (as we can in face-to-face communication).

I was also very conscious that my ideas, reasoning powers, interpersonal/group skills and writing skills would be on display for everyone to see, including (the professor). This was particularly intimidating because my technical knowledge in the field of language education is not strong. Heck, I had to check with (the professor) to see how you were defining culture.

Whereas I represented my initial posting as a series of stream -of-conscious thoughts, I actually had read the postings of others several times, reflected on both my emotional and intellectual responses to what had been posted, attempted to analyze why the postings provoked those responses in me, and then had discussed the postings, my immediate responses, and how I should introduce myself on the bulletin board with some trusted friends.

None of the participants chose to reflect upon their first postings to the class' bulletin

board, however, another participant did share her first experience with this form of

communication.

Article No. 874: [Branch from no. 863] posted by Dominique on Fri, Sep. 22, 2000, 21:03 [Excerpt]

Subject: re: Creating an effective learning team

My first experience on a listserv bulletin board wa s very scary...I belong to Webgrrls, an list for women involved in Internet technologies, and spent the first 2 months as a voyeur. Finally, there was a topic that came up that I felt I had to respond to and I spent a lot of time composing my message. I was shaking when I posted it, and regretted it later, because I did not know how my 'writing style' (for lack of a better word) would be perceived. None of the people had never met me personally, so they had no idea if I was coming at the topic from a neg ative or positive angle. How do you portray tone of voice, humour, etc. Judging from the responses I got, they perceived my post as being more on the negative side, when that was not my intention. So, obviously I became aware that I needed to learn how to alter my discourse style for the bulletin boards, something I was very conscious of when we started these bulletin boards. The key thing is that I have now met you all personally, and that will help me relax a bit.

Throughout the length of the course, students continued to put time and thought into crafting their postings. For native and non-native speakers alike, the bulletin board was a place to explore ideas and language.

> ....(E)veryone comes with something, and everything that was posted was
>
> not ,uh, superficious. It was on a deeper level. Because usually, uh, by my
>
> own experience, you, you usually before you post, you think, you know,
>
> what to post. You wouldn't post any, anything or something superficial
>
> and perhaps, something not very well checked, you know. You always
>
> make sure it's reliable information and if you quote someone, you always
>
> make sure that you post the name who said this so that you really feel bad
>
> if you don't know exactly, you know, whose quote it is. It's, uh, uh, more,

more responsibility, more check information and, uh, more reliable

information. (Tanya)

Students expected their peers to show the same concerns for quality and accuracy. As described in the "Postings" section, opinions and facts were not always supported by sources. This did not go unnoticed. Concerns with credibility and accuracy influenced both reading and posting.

The one thing that sometimes I would have liked was referencing which

sometimes defeats the purpose of just discussion like that, but there are

some things, it's like when you read, um, when you read an article, if, if

there's a stat or something like that then you have a reference and you

know that at some point you could look into it and find out if it's legitimate

or not. So sometimes you're getting information on there and you're like

"Oh, is that all true?" (Meg)

It was not unusual for students to ask directly or indirectly for the source of a quote, statistic or idea.

Article No. 974: [Branch from no. 943] posted by guest guest on Wed, Oct. 4, 2000, 21:51nm [Excerpt]

Subject: re: Working with change

I also question a statistic I read earlier in another entry about verbal communication comprising only 7% of communication. In what country was this study done? There are still many cultures that follow a very oral tradition; there are still a considerable number of people who are illiterate, and those who can't read, write, or let alone type in English. I agree that text is commonly used, but 7% seems a little too low for me...

Zara

Article No. 1251: [Branch from no. 1215] posted by Audrey on Wed, Oct. 25, 2000, 16:24

Subject: re: What to Read

Hi, Diane,

Thank you for mentioning the original source of that saying. I have no idea who Jim Collins is. Can you give more information about that? But the meaning is the same, when my father guided me to read only good books.

To differing extents, students were aware that their words were going to shape how they were perceived by their classmates, and there was a conscious effort by many students to manage their on-line image. For some, this awareness existed from the moment they began to post, and was tied to their efforts to assert their new role as a graduate student.

> ...(W)hen I was posting my messages, I had this strong identity of graduate
> Ph.D. student who needs to, who must post something, you know, yeah,
> something mature, something, uh, profound, you know, deep and, uh, uh,
> yeah I think this is like, this is my, my attitude from the beginning   (Tanya)

For others, this awareness developed over the length of the course.

> I think we all had the opportunity to give a perception of ourselves that we
> wanted to give via this bulletin board although the first time you use it, you
> don't really realize that that's what you're doing blah, blah, blah but, um,
> you are, you know. It does come out. (Dominique)

...I had to know what I was talking about and save face, you know, to get the respect that I needed from my peers, 'cause you can basically go through an entire course in grad school, show up, say nothing, do nothing, you know, buy a paper one of those businesses, you know, for your mid-term and your final paper, and that's it, you know. No one knows about you and no one cares, so but you can't get away with that in, in the WebCT course. (Zara)

Students were also concerned as to how behaviours and identities associated with their life outside the graduate seminar would influence peers' perceptions. Having read students' comments about the WTO talks in Seattle while shadowing the summer's bulletin board discussions, I was concerned that my business background could cast an unfavourable light on my class interactions. Certainly students assumed, sometimes incorrectly, that my business background had been critical in forming behaviours that they observed, and one student suggested on the bulletin board that there was a cause/effect linkage between my previous work experience and my questioning style. I wasn't alone in my concerns about the influence of "previous lives".

...(L)ike my last academic experience was in Quebec and that's the way people are, in their classroom interactions and it's, this is the way it is (very direct), and no one ever, ever takes offense, because that's just how they interact and, and I was so used to that, and then I realized in the course of the semester that, you know, not just on the bulletin board but at UBC in general, there's a certain way, you know you have to be so much

more gentle here, about what you want to say. You know you can't be that

direct, and you can't be that, like, convinced about what you're saying, you

know you have to be so much more gentle and I'm still struggling with

that, so, yeah, so I mean I was aware that maybe that style was

intimidating other people and I was really concerned about that because

I'm a very sensitive person and I wouldn't want to be in that position either

but at the same time I was like, well, I'm here to do my, my job, you know,

like my job is to, you know, to, to get something out of this and to, to think

so, yeah, but I, I still didn't really know how to deal with that, to be honest,

you know, it's, it's really, it's really difficult. (Dominique)

These concerns are no different from those that may be experienced by students in a face-to-face classroom; however the permanency of the postings seemed to sensitize students to the scrutiny that their contributions faced, and to the multiple interpretations that could be placed on their words.

As the NNSs would freely acknowledge, studying at an English-speaking institution involves the pursuit of both language and content and the issue of language was never far from the mind of NNSs. Most expressed opinions similar to the following, although the relative importance of personal language goals varied.

It's a, it's a really hard question to answer (reflecting on learning course

content) 'cause even if I have thought of the, uh, thing, the relationship

between language and content, uh, actually both should be focused on,

focus should be focused, umm, however to me I think bulletin board was

mainly focused on language, umm, rather than contents. Of course, I have learned course contents from the discussion of the bulletin board, umm, through the negotiate, negotiation with classmates or sometimes I can get a lot of knowledge from the discussion, however, mainly to me, I think, it was for sure language purpose, pure language purpose. (Julia)

NNSs were highly individual in their approaches to managing their language use, a subject each of them raised although it was not specifically explored during the interviews. In each case, the students compared the opportunities available to them using a bulletin board to other classroom situations/tasks.

In comparison to writing a term paper:

"...I did not address through the dictionary all the time. When I didn't know a word, but I tried to, I tried and I don't know the word and for me it was faster to just paraphrase..." (Tanya)

In comparison to classroom interaction:

"However, bulletin board, I could read, I could look up the dictionary, and then, oh, oh, I got it wrong a spelling, okay, I need to correct, right?" (Julia)

"...(U)nless that, that will be a short message, I'll do it right on the bulletin board, otherwise I'll do it on MS Word and check my spell, because I don't have to do it because there is automatic spellchecking..." (Bruce)

Native speakers were also conscious of their language use, in part because they were aware that they were being used as models by NNSs.

...(B)ecause I sort of knew that my language ability was better than some of the other students, uh, I realized that, um, I had to be a good role model or model for those other students if they were to, 'cause that was one of their goals, you know, they wanted to learn and to, so I didn't feel comfortable correcting them but I thought maybe the best I could do was at least be a good model if they're trying to emulate and learn English from me or from their peers... (Zara)

If NS didn't initially realize that their postings were being scrutinized by NNS for language use, it wouldn't have taken long to learn. NNS discussed the grammatical errors made by NS during class, and my think-aloud includes a reference to an error that Julia raised in class. I noted that I was proofreading my postings much more carefully than I would any correspondence to a friend, in part because I knew I would feel linguistically inadequate (and just plain stupid) if it was my errors that were the subject of informal class discussion. I equated my writing practices to those that I would engage in if I were preparing a piece of professional correspondence.

Despite the differences in the students' foci, all developed a remarkably similar method of managing their bulletin board workload. Quite simply, it involved accessing the bulletin board everyday, or for those using campus computers, everyday that they were on-campus. Students describe this as a pre-condition to effective bulletin board use, and

maintained that it was impossible to keep up with the volume of discussion without daily or near daily interaction.

> *I mean, I wouldn't call it a strategy but how I go about, using a bulletin board is that I read everyday, cause if you don't read everyday, especially in a course where everybody is so keen, if you don't read everyday, there's no catching up. (Meg)*

Once I decided to do a think-aloud on the course as part of the content for my term paper, I stopped accessing the bulletin board for two or three days until I had a tape recorder. My reaction upon logging on again was:

> *There's just a ton of things here! Um, it's just much more difficult to think about responding intelligently when there's a whole lot of things posted that you haven't responded to.*

As both the statistics and the comments of the NNSs show, however, regular access still did not provide sufficient time to read all of the postings. Again, students consciously developed ways of managing the reading load.

> *I just, uh, check if there is anything, new message I haven't read yet. So, usually I respond to, to eh, to each person who posted to me in, individually. If, uh, and, uh, and, uh if I, I don't have time to, to answer to this, to reply back, I will, I will, I will, I will keep in mind, do it later, is one way, to person-to-person. And another way is if I, I feel I have respond to some messages, not to me particularly, and I will do that. And I will read*

all the, I will try to read as much, mm, postings as possible, yeah,

especially (student name). (Audrey)

Students also "edited" which postings they read based on their evaluation of the merit and/or focus of the individual's previous postings.

...(S)ome postings I read thoroughly and read two or three times because

they were really interesting and I felt that the person had a lot to

contribute, even though they may not have contributed a lot of times, but

when they did, it was quality material, you know, whereas others I would

just skip over, because I knew I wasn't going to respond and I knew that it

was way off-topic... (Zara)

This "all-the-time" classroom was one of the strengths and the stresses of using the bulletin board. As I described to people while taking the course, it was if it was with me seven days a week. I would be working thoughts and ideas from the class as I walked to and from the university, and entering my additions to the conversation when I arrived home. Personally, I found the bulletin board created an opportunity to fully explore a topic of discussion, without the time limits imposed by the class schedule, the one-week disruptions in a conversation's flow, or even the forced pace of a summer course. These sentiments were shared by other classmates.

You discuss things on-line rather than having only traditional part,

coming, uh, particular time to the particular setting and having, taking

this, having this class and then going back home and forgetting about it.

There is this asynchronous thing that you can, and you should actually log

in and start communicating with your fellow students, uh, during the off-class time. Uh, and it's a presence in the classroom all the time, there is such feeling, like class is always with you in your life in your head, all the time. (Tanya)

However, the course's omnipresence in a student's life was not without its downsides, as expressed by the same individual:

Sometimes it is overwhelming, I would say, it is overwhelming. I remember, well, when I took this two courses, I, at the beginning it was very interesting because it was something new to me, but later on, I felt, oh my God, I can't do it, it's too much, and I want to forget about it. I wonder, why is it always with me, you know, whenever I go, I always, I need to check, I need to go, I need to chat and it, and I thought, so I, it's too much, you know sometimes I would prefer to not have it, you know. I could appreciate the, the, the traditional classroom is separate. You know, it's not always with you, and you know I had this crisis, so I did not post for several days, maybe for three or four days and I felt so bad about it. I thought that I lagged behind and I'm missing something interesting that is going on there. So I went back and I posted again and, and this crisis somehow passed, you know. I overcame this, the crisis and again got involved and it wasn't such a big problem for me to go and post. It didn't overwhelm, it didn't overwhelm me after I, you know, felt this thing, after I

had this crisis. Interestingly. So, I and by the end of the course, it was

okay. It didn't bother me. (Tanya)

Experience using an electronic bulletin board as an adjunct to a graduate seminar did

nothing to alleviate the pressure felt by another student:

It's another anxiety, and then as you know, posting many times, constantly,

makes me pretty nervous, every single hour, actually, every single day

'cause I have to post, I have to make my story again and I have to respond.

It's quite makes me nervous....Even if while, while, um, posting message I

could be relaxed, comparing to interaction, face-to-face interaction,

however, I have to, I have to post writing English is still pain to me. That's

why. That's why constant posting make me nervous and makes me

knocked out. (Julia)

A significant proportion of the course grade was allocated to bulletin board

interaction. Most students indicated some level of awareness of the importance of their

bulletin board interaction to their grade. Thus, the allocation affected individual's bulletin

board use, but perhaps not always in the way that was anticipated:

And you know what, to be honest, even in (the graduate seminar) I wasn't

really thinking a lot about the mark for participation, like, that, like I

realize it's important, but it wasn't really a big thing on my mind. The

reason I think that it worked the way it was set-up that way was because,

not so much because oh I cared I gotta get my 30% grade. I wasn't even

thinking about it, but the fact that there was less other tasks that you had to

tend to. You know we didn't have to write three papers in three months and participate on the bulletin board. There was one paper and participating on the bulletin board so you kind of directed your time accordingly, and I found, I think that that was a key thing too. You weren't so exhausted with doing these other tasks, you know, this busy work...
(Dominique)

.... (T)he first course that I took on WebCT, I participated a lot, and I found out long after the course that I participated the most. Now, that was probably sixty to seventy-five, depending on the day, percent interest, and the remainder was feeling like this is such a big deal, I have to do this in order to pass the course, I have to do this, you know, so that I need to show that I'm participating. And, um, that's not necessarily a bad thing, because I think that that is a good motivator... (Meg)

The influence of cue reduction, an inherent feature of text-based bulletin boards, affected native and non-native speakers differently. Several native speakers commented on the impact of the lack of non-verbal cues on their communicative effectiveness and on the pleasure they derived from interacting. However, the same feature of CMC served as an enabler for the non-native students. Regardless of the good intentions of classmates and professors, and their desire to give non-native students time to formulate and communicate their thoughts, the bright-eyed/patient/encouraging demeanors adopted by native speakers fail to dissipate the anxiety experienced by NNSs in a classroom. NNSs remain acutely aware that they are failing/have failed to communicate their thoughts.

I think I participated more often on the bulletin board (than in classroom discussions), uh, because, uh, it's a, it's, it was not, I do not have anxi, anxiety because sometimes in some classrooms I feel anxiety. I'm afraid of speaking out. I'm not sure if I, uh, will, uh, express everything I wanted because of the language limit, limitation and quite often I just, everyone stares at you and you just get lost, it's happened quite often, uh, whereas on the bulletin board there is no such thing as anxiety. Well, because, uh, you are focused, like nobody is around you, there is no, this in-class power situation, uh, it's just you and the comp..., well, and, and, and, uh, you post and then you check, you know, you have this opportunity, and then you correct sentence, you know, so that is why there is no anxiety, it's comfortable atmosphere. (Tanya)

For at least one NNS, the bulletin board allowed her to avoid dealing with the pragmatics of face-to-face classroom discussion.

However, to me speaking English as an ESL student, on-line is much better to prepare what I am going to talk about. That's why, I think so. But, sometimes, if I see your face like this, I have a different culture. Native speakers want to speak directly by looking in your eyes but to me it is really hard to focus on your eyes while talking. I try to avoid your eyes but ESL or native speakers think I'm telling a lie, right? It might be another culture influence, I think so it's really hard to say something directly. But on-line, actually, there's no one look at me, so I can say what I want to

say, right? Yeah, it might be the reason or factor I like bulletin board.

(Julia)

"How-to" manuals related to developing on-line communities stress the importance of members holding common objectives for their community and their participation. No attempt was made to develop or formally state a common objective or mission for the bulletin board's use, but informally and perhaps unknown to the class members at the time, there was a strong interest in creating and maintaining an academic tone to the discussion. I have already stated that one of my objectives for the course was to see how quickly discussions could be moved from social to more substantive issues. What I didn't know was that my classmates had the same concern. This is not to say that there wasn't a significant level of social interaction, as was evidenced in the earlier section "The Postings". However, students indicated that they came to the bulletin board primarily to think. This influenced how they developed their postings, and this issue arose in the interviews again and again.

I've never tried it before, uh, and, uh, when you communicate with people,

you always learn something and this type of communication was, uh, um,

not like on a chat level. It was more of a constructivist, knowledge-

construction discussion generating, uh, type so we were interested in, um,

involving the conversa, conversation partners in a meaningful dialogue,

meaningful conversation so, and this made it like that, and not, not a cheap

chat thing. And personally I was focused on the content, not on personal

things so I wanted to learn more and better understand the content of the

course. (Tanya)

Um, let's see, um, I think just like, you know you can't just like go, I mean you could, but it's not as interesting when you're just kinda going on and you're just going blah, blah, blah and you're just touching the surface so I think it kinda makes you go deeper, or that the postings that were interesting were when people had kinda dug a bit deeper, it wasn't just stating the obvious or typing on the bulletin board for the sake of typing. Um, so, and I think I found myself, you know, not really wanting to post anything until, unless I thought that it was actually worth posting so that kinda makes you more careful and so, about, you know? I don't know, I think it might. (Dominique)

Sometimes I felt that, you know, the, the postings were way off-topic and, yes, he (the professor) encouraged us to write whatever we want but, you know, not everyone has the time for that, not all the others, usually, were, you know, were older students. We may be mothers or teachers or we have a life outside and we don't necessarily want to hear about, you know, everything else, as SUV's or, you know, I really thought, I was frustrated with the fact that often enough it was way off-topic, like it didn't even have to do with language learning and I understand the rational for, you know, having the, you know, knowing that on this bulletin board you have the freedom to do that, but, hey, within certain limitations. It still has to be about education and language learning, I feel, because as much as it is an effective and an efficient use of time... (Zara)

Not all attempts to direct the bulletin board interaction were successful, but their failure is not necessarily discernible to a reader. In my flurry of initial postings, I had attempted to start a thread titled "The Impact of the Facilitator in On-Line Learning." The posting received a limited number of responses, all of which focused on on-line tasks rather than the facilitator's interaction. Later in the course, another opportunity arose to evolve the conversation in that direction. In a thread that began with a reference to an article by Gordon Wells, I wrote:

Article No. 1416: [Branch from no. 1415] posted by Diane on Sat, Nov. 18, 2000, 19:48 [Excerpt]

Subject: re: Gordon Wells article

I agree with you that the environment shapes the interaction. The interesting question for me then becomes what do we do, as facilitators of learning, to create an environment that fosters interaction and the development of community? Considering learning styles, preferences and learned beha viour (not to mention a whole host of other factors), how do we adjust our individual behaviour to meet the needs of others? What factors faciliate and/or inhibit engagement? How do we facilitate the development of an understanding among community member s of their obligations to individuals and the collective health of the community? Or do we assume that the necessary understanding will evolve naturally, without any damage to the potential participation of one or more community members during the time pe riod that this understanding evolves?

In response, another student posted a couple of websites with the "answers", and that was the end of that thread. I swallowed my frustration, posted a thank you, and left the subject alone.

Students not only attempted to shape the content of the bulletin board interaction to suit their personal learning interests, they also attempted to influence the style and tone.

I probably, I think I really enjoyed, like, coming up with, you know, like,

debates, like I enjoy the on-line debating, like I think at one point we had a

thing going there and, it was like, you know, it was really stimulating too

because it made you think so much more sharply, right? (Dominique)

Freedom mattered, but not consistently. The ability to choose both the topics of discussion and the threads to which to respond played a strong role in all of the students' bulletin board usage. In comparing the value of the bulletin board adjunct in the graduate seminar under study to her on-line interaction in a distance education program, Dominique stated:

For some reason, I wasn't really interested in that level of formality (on-line presentations). I was much more interested in just discussing, you know. Um, but I think for that it is quite useful as long as it's, I mean I have to compare with this other course that I did, the Distance Ed one where you had a lot of that but it was extremely structured, you know, it was like okay, get in your groups and then on this day your gonna present your article and blah, blah, blah and that was, it was like being in a traditional classroom again, only you didn't have the face-to-face, I mean it was, it was kind of, it was that same feeling. It was kind of weird. So, I would say that's, for my own learning style, that's probably less successful for me. (Dominique)

The freedom to initiate threads on topics of their choosing also allowed students to explore course-related areas of interest when they were not satisfied with the classroom discussion. Sometimes the dissatisfaction arose because students perceived the classroom dialogue as inaccessible, and sometimes because the specific examples discussed in class were perceived as of little relevance to their interests. Comparing two concurrent classes

with bulletin board adjuncts in which she participated, Tanya made the following observations:

> *Same professor, many people, uh, but different because, uh, so in, in class with you it's (Graduate Seminar 1), right, we had more face-to-face interaction and we had, I think, less postings on that one. And whenever I went to the bulletin board, I, I think I first went to (Graduate Seminar 2), no, I think that (Graduate Seminar 2) was more popular but we had less interaction and, uh, it's probably, no, it's balancing, you know, in (Graduate Seminar 1) we discuss a lot in face-to-face and then, in (Graduate Seminar 2) less. In (Graduate Seminar 2), we talked a lot about Quebec, all the time about Quebec, you know two-thirds of the classroom time was Quebec issue and many people were not interested in it, knew little about it, so they couldn't, yeah, you know, uh, contribute, so that is why, probably they posted more messages. Okay, forget about Quebec, let's talk about other things, yeah, this could be another, yeah, yeah, I think, yeah. (Tanya)*

Students' assessment of the influence of topic-related factors in the written survey appears to support but also qualify these comments.

Table 7

Topic Factors and Students' Bulletin Board Use

Factor	NS Mean	NNS Mean	Group Mean	SD	Z
Topics introduced by classmates	6.00	6.75	6.38	1.06	1.50
Topics introduced by professor	4.75	6.75	5.75	2.05	.92
Ability to select topics for discussion	4.50	6.00	5.25	2.25	.49
Ability to select threads to which to respond	6.50	5.75	6.13	1.46	1.27
Ability to initiate threads	4.25	5.00	4.63	2.26	-0.13

"Topics introduced by classmates" was the single highest rated factor, and it is directly linked to the freedom the students had to shape their use of the bulletin board. However, "Ability to initiate threads" and "Ability to select topics for discussion" received mid-range ratings. Perhaps this is because not all students chose to initiate discussion threads, either preferring to respond to a topic already under discussion or to shift a discussion that was already underway towards a topic of their interest. Therefore, students' freedom to choose appears to have exerted a greater influence on bulletin board use as it related to some factors or areas of control; specifically, the freedom to choose when to respond rather than the freedom to initiate.

The process of deciding what to post was complex. To fully understand how students make these decisions, it would be necessary to have students reflect upon their decisions within a short time of composing a posting. However, I will share here some of the

comments that were made during the interviews, and my own reflections from the think-aloud I conducted for the latter two-thirds of the course.

...(O)n bulletin board it was a dialogue. It was not a monologue and you respond to someone, you have a person who address to your writing. You build on, on someone's, you know, uh, someone builds one and, statement and you build on, on that, on top of if, so you already stimulated by this dialogue that, that took place before you read it, um, the thread, the opinions of many people and then, okay, this is the opinion of Diane, this is the opinion of Bruce, this is what Julia thinks about it, how about my opinion, you know, and you build on this. It's not on the empty space but another thing, one usually raise your own topic, uh, and this case, you build on empty space but you are extremely motivated to speak it out because you're concerned about it. So you feel like you need to share. But again, I think, this, this is also motivated by another thread or by your background knowledge or by the news you heard or the new book you read or article you read, you know, you feel like you need to share, and, uh, listen to others' opinions, so, for instance, you're not sure in what you read or, want someone to explain you or want some, someone to elaborate, you know, the discussion question, so then you post. (Tanya)

I think what it does is it creates an environment where you can basically take a concept, take a paper, take an article, take whatever it is that you're, um, um, that you're going to be discussing and basically write

down all your thoughts about it or write down anything that comes at you,

and then you have the option of editing or not, you have the option of, um,

being specific or not.....you have the opportunity to lay them out and, um,

visually see what it is that you're, your different concepts, your different

ideas, and, and then present them....it's a really good forum to be able to,

um, present coherent ideas and have discussion... there's a certain

pressure for it to be perfect, excuse the use of that word, but I, I mean, you

know, I mean you feel so much has to go into it and this is, um, basically a

place where you can, a sounding board for your ideas, but that also gives

you the opportunity to be coherent, and, um, be concise in what your

thoughts are, whereas that doesn't really exist in the same way in a face to

face environment. (Meg)

Throughout the protocol, one can find examples of students sharing their own personal experiences or the experiences of people who are close to them. In comparing the bulletin board to face-to-face interaction, some students observed a greater openness and willingness to share on-line both in themselves and in others. When Audrey was asked to reflect on her description of her own openness, she said:

"Um, it's in the environment. Just like you are in the water, you, you

cannot stop, you, you have to swim. And like you are, you are on the road.

Everybody's walking, you cannot stop, standing there." (Audrey)

Students find themselves reviewing their own reactions to postings, the reasons for their responses, the value of making their responses public in the form of a posting, and their

classmates' potential responses to their hypothetical posting. Then comes the process of

putting their post into type:

> *However, participation on the bulletin board, in (the graduate seminar) or*
>
> *my previous courses, I try to explain why I'm thinking of, why I should*
>
> *think of such and such, that's critical thinking, right? So if not, I cannot*
>
> *develop my academic skill so I try to learn how native speaker or non-*
>
> *native, regardless of native or NNS, because how other participants post*
>
> *their message, and then I try to cite their postings into my posting, not*
>
> *exactly the expression, I try to imitate their style, their writing style and*
>
> *then I try to imply the way of writing into my posting... (Julia)*

After investing so much in their postings, students must find ways to accept that their

classmates may not share their interests. As Herring indicated, one of the methods that

public discussion board participants use is to post on several different topics, hoping that one

of them will generate interest and responses from community members. This was the

approach that I used several times throughout the course, including at the onset of the class,

to attempt to generate discussion. Having participated in multiple chats with a variety of

resource people and participants, I had observed the difficulties experienced by the resource

people when their questions failed to generate discussion. More so than a classroom, the

silence of non-response in CMC is deafening, and the "teacher talk" used to fill the gaps

appears much more desperate. Therefore, I had developed coping strategies for dealing with

both the lack of ensuing dialogue to a posted thread, and the twinge of inadequacy that comes

with creating an unanswered post. Other students began to develop their own responses over the course of the seminar:

> ...*(O)n the bulletin board, you do not, you can't receive immediate (feedback), you don't see the faces. You just send and then hope that this would, uh, uh, these postings receive a feedback, people would like and start to discuss things that you want to and, but if it is ignored then, well, disappointment, yes, disappointment and, uh, yes, not very good feeling. (And) then I, I think maybe should post something different, maybe something different will receive feedback next time. Well, you know, you think this, uh, thing is not successful. Yeah, I should post something better, something that will hook people. (Tanya)*

Through personal experience, students come to understand the stress of unattended messages, and for some this creates a sense of personal responsibility to mitigate the potential distress of other posters.

> ...*(S)omebody, a student post a message which didn't draw a lot of attention from the students, okay, only one posting and there's no comments under the topic, I thought, oh, I should post something, even if it was not my interest. I think that might be my personal characteristics, I think, right? (Julia)*

All of these factors interacted to influence how students engaged in the topics under discussion, with the asynchronous nature of the bulletin board coming to the fore again and

again. Sometimes students highlighted how additional time gave them more time to truly think through their ideas and responses.

> *Um, so, interaction on the bulletin board was on a deeper level, a deeper level. Uh, we had time to think over, to digest all the information we had and then read others' opinions and base on things, and basically it is just opportunity to think and run and speak whereas the, the classroom....Yes, you think about, uh, what you say is not as, uh, elaborate, as polished, as nicely put and so as on the bulletin board, definitely.... When you really want to, uh, reach the people's mind and tell something important, it should be thought over before, you know.....Of course there are very talented people who do result, you know, putting down something and very elocative (Nt. perhaps eloquent?) but for, ESL students, it's impossible. ESL speakers are learners, need time to think over and write, deal with really, uh, double the load. So basically, it's, it's more time to think.. (Tanya)*

Other students emphasized not only the time to think, but the ability to enter the conversation at all.

> *That is also another merit of you participating in the bulletin board setting learning, like, uh, uh, it, it will give you give you the time es, especially for us, we are, we are, we are the non-native English speakers so even classroom sometimes I find I don't have time to think like you, everybody's talking at the same time. (U)sually the native speakers will do most of the*

talking there, so even I want to say something, I, my mouth is always slower than my mind so on the bulletin board I think everybody is the same.... it's worth it because I can use the time to think about it and, uh, especially the professor and the classmates give a topic which will force you or make you to think then you have to do it, um, in your own way, from your own perspective. (Bruce)

The process of interacting on the bulletin board was seen both as an extension of the classroom interaction, and as a separate activity unto itself. Students' perceptions of the interrelationship between the two in this particular graduate seminar varied widely. Some emphasized the continuity between the two:

...(B)ecause for every class I find just like we, we can never finish our topics in the classroom because that means the topics always great. We never finish. So sometimes I, I want to get back home and get on the bulletin board to finish what we have learned... (Bruce)

I think almost everybody was really participating and because they were participating on-line you, you really felt, you felt the group on-line and you realized there wasn't any difference, well I mean, there wasn't like this gap between what was on-line and what was in the classroom, 'cause the same, it transferred very well, it was the same sort of thing, whereas, in other classes, you'd have, you know, the classroom was so different than what was actually happening on-line that it kinda felt like two totally different things that were just not really meshing. (Dominique)

Others perceived the classroom and on-line discussions as largely unrelated.

I found in that course and in the other WebCT courses that I've taken that

the, um, the classroom content and the bulletin board content are quite

divergent, they, in a lot of cases, you know, it's like two courses going on,

right? So you have, um, the readings that we're doing for class, and then

discussing those in class sometimes, and, um, and then you have the

bulletin board where sometimes it's, it's, the topics come from the course

but often times they're just about language learning in general or people's

personal experience (Meg)

Students were aware that content as well as relationships flowed between the on-line and the classroom worlds, but that they could not assume that others would manage the flow effectively for them, and that some degree of personal initiative was required.

It's really, um, funny to know the different, the relationship between

bulletin board and classroom interaction. Sometimes, as I mention earlier,

it is quite related, correlated each other. Sometimes it is quite totally

different, uh, depending on participants' attitude, I think. Some student try

to bring the topic from the bulletin board into the classroom, and then we

can, we could talk about it in detail, sometimes, some of the participants

didn't want to bring the topic we talk about on the bulletin board into the

classroom. At that time, we don't know what's going on on the bulletin

board, if I am not ac, not I'm not on, active participant on the bulletin

board. (Julia)

.It would be great to have, um, even just a portion of the bulletin board, okay, this is what we discussed in class, very specifically, this is what we discussed in class today. ......(Y)ou know, sometimes it was discussed on the bulletin board and sometimes it wasn't. Now had I participated more probably I would have been able to bring those things up, but...can't do it all. (Meg)

For some students, and for all of the NNSs, the bulletin board was perceived as a highly competitive environment. It is possible that NNSs saw the bulletin board as a level playing field, one that did not present the same barriers to interaction as a classroom. What was perceived as a real possibility to interact as an equal resulted in a great deal of internal pressure to maintain a visible presence on the bulletin board.

"I went on the bulletin board very often and also my strategy was to post even, even if, uh, just not simply read but post something at least one sentence to show that I was there." (Tanya)

...(S)ometimes I think it's really time-consuming but it force me to reply to those postings. I have to. Uh, otherwise, you know, you feel like, lag behind something, then you have to answer those postings and you, you, you, your, that is your, you're very tired and after all day work and you go back home and turn on your computer and find 20 postings there or so, you have to say something. (Bruce)

I don't think it's really competitive between different people, but in some way it feels competitive. For example, if you are participating on the

bulletin board and you have sixty messages and everybody has near, you

know, sixty to eighty messages, say, and then there are three people who

have one hundred and fifty messages, at some point it's like, you always

feel the need to, like, I have to do more because, and it, so at some point it

just feels like it's never enough. I don't think that that's necessarily, um,

about competitiveness between students. I think that's more just about our

need as students to be the best or, um, strive to be the best... (Meg)

Others expected more of themselves than simply visibility.

I had to have something to say and I didn't want to be one of those students

who would talk about whatever and be off-topic, and just, so that I could

show that, oh look I participated, look at how many times I, you know. I, I

wanted to save face in that way and really feel that whatever I had to

contribute was worthy and that I was on top of things, that I knew what I

was talking about. (Zara)

There was also a sense of competitive pressure related to individuals' content competence.

It's like a competition. I got, I felt, yeah, competition among participants.

If a guy post a, actually, it's really to measure the quality of the postings,

however, uh, a person, actually, post very interesting topic, issue, focused

on academic purpose, oh, my eyes opened, once I look at the message, and

then, hmmm, I have to look at the article and then I have to comment on

that so like, even though it was collaborative sense, however, sometimes

we think it's more competition, compete each other 'cause in regular class,

just two hours long or two and a half hours long, it was short, right? It's like flash and instructor talk about chhh, chhh, chhh, chhh, chhh, so sometimes it's really hard to compete each other, right? However, on the bulletin board that's another competition to me, to me actually, ESL student, not only focus on language, even though my focus was in language improvement, but it's like a competition. Hmmm, you post this message, I have to look at it because I didn't know the issue, right? Then, oh, I have to read it, and then I try to find books and then I want to comment, right? As you know, once we read the postings, sometimes, oh, we have the previous knowledge of that, but sometimes we don't, usually actually. In that case, oh, this is a Bonny Norton's article or idea, I have to look at it. It's like another competition, it's a pressure, right? It's, that's why this is really good to improve our academic knowledge and improve my idea, myself. (Julia)

The issue of audience on a bulletin board is complicated. As already noted, there was no consistency in the forms of address used by the students. Whereas face-to-face discussion allows a speaker to use non-verbal communication to signal inclusiveness in a discussion, there are no such devices available on a bulletin board. Initially, I attempted to draft my postings such that every classmate felt included in the discussion. However, a series of interactions over the course of one evening showed that I had limited control over others' perceptions, regardless of my carefully chosen salutaries and language. A sequence of back and forth exchanges between myself and another individual were perceived by most

classmates as a conversation between two people, not as a class discussion. Students who were not part of the exchange commented on the postings prior to the beginning of our next class. I was horrified, and asked how I could have changed my messages so that they would have felt they were part of the conversation. Their response was different than I expected. They didn't feel excluded, and said that they might have joined in if they had something to contribute to the topic under discussion. However, the patterning of the interaction seemed to lead to an impression of a private conversation, albeit one publicly displayed. At that point, I began to spend less time on the task of addressing my postings to an open audience. Patterns of interaction rather than language seemed to determine how individuals were interpreting a message.

At least some students will address NS and NNS differently. The division between native and non-native speakers, and Asians and Westerners, which runs through many of the readings on second and foreign languages, is imposed on students in graduate seminars. Even an on-line course evaluation posted by Julia, the professor's assistant, emphasized these distinctions by posing questions such as:

Article No. 1539: posted by Julia on Wed, Nov. 29, 2000, 11:54
Subject: Julia's Questionnaire [Excerpt]

5. Do you process or interpret the question differently according to who wrote the message (e.g. native speaker, ESL student, or professor)?

6. Have you experienced any tolerance aobut the typographic errors or any errors or mistakes in grammar? Do you consider the errors occurring in Native speaker's message as a just typo or a lack of grammar knowledge and vice versa, how about ESL student's errors?

7. Do you answer or comment on the question equally regardless of whether he or she is a native speaker or ESL student or take into account their English level or different cultural background?

Yet even if there are differences, discussing them is difficult. In a profession that debates the superiority of native versus non-native speaking teachers, the idealization of the native speaker, the appropriateness of arbitrary standards of language competence, and the validity and reliability of the assessment instruments used to measure language competence, categorizing and labelling people according to their linguistic competence, much less using those categories to define differences in one's personal behaviour, is fraught with risk. To behave in such a manner is in many cases incongruent with a student's conception of themselves as a language educator.

And so only one student described differences in their posting behaviour towards native and Non-native speakers of English.

That's one thing I discover and, actually, when I, when I respond to messages, um, posted by native speakers or non-native speakers, I have totally different way of writing depending on who wrote the message. Um, posting message to ESL student, I try to make sympathy, I try to start based on the similar, um, context we have the same background, we have the same culture, right? And then I try to focus on, on identity, similarity while talking, talking, even talking about the academic interest. I assume we got the similar conditions, atmosphere, right, but when I talk to the native speakers, I try to explain background, more detail, this is Korean situation, this is Asian culture, right? So I try to embed more culture issue,

when I respond to native speakers and also, I was very worry about my,

um, accuracy in writing to respond to native speakers... (Julia)

Native speakers had difficulty expressing their discomfort with being positioned as anything but a peer, at least in part because of a concern as to how their comments would be construed. During October, the topic of error correction arose in a classroom discussion. In response to an open-ended question regarding errors on the blackboard, the NNSs unanimously invited feedback and correction from the native speakers. At least two native speakers, including me, expressed concern about how that could alter the relationships among classmates, but the NNSs did not appear to feel that this would be a problem. Following this discussion, there were no observable changes in how the native speakers reacted to errors made by the NNSs. I raised the subject on the bulletin board.

Article No. 1119: posted by Diane on Sat, Oct. 14, 2000, 16:27
Subject: Grammar Thread

Hi Everyone,

In our last class, our classmates who speak English as a second language asked the native speakers to please correct any grammatical errors that the second language speakers might make on the bulletin board. We seemed to agree that we would make these corrections under a separate grammar thread. However, none of us have done so.

I know I am uncomfortable correcting my peers, even though they have asked me to. I have been hoping that someone else would start the thread. Has anyone else made a similar observation?

I received the following response.

Article No. 1242. [Branch from no. 1119] posted by Tanya on Wed, Oct. 25, 2000, 14:39
Subject: re: Grammar Thread

Hi Daine, Feel free to correct my mistakes - Tanya

And then the thread died.

The issue was never really resolved, and I share the opinion of Zara, who said:

I always felt that the NNSs looked up to me, you know, like, like I was perfect, you know, and I am so far from perfect. You know, not only could I speak English but, you know, I felt positively judged, you know, for the way that I looked and, you know, they just made me feel that I had everything going for me, you know. Um, so I, it's just because I had mastered English, I just inst, I felt that I instantaneously felt looked up to, you know, and, and I didn't see the real reason why, I, I felt very respected and, and, um, I didn't really think it was merited. I didn't like feeling, I, I, you know. Um, and I think that because maybe they viewed me in such a way, because it wasn't equal, they couldn't really get too close to me, like I was too good in English and maybe everything else, you know, that they couldn't get too close. I don't know if I'm making this up in my mind but this is how I perceived it and, um, and yeah and I didn't really like it because I would have liked it to be more, you know, equal and yeah, I have certain things, you know, but, you know, look at your culture and your experiences and your country, you know, and maybe not monetarily but

that's not the only thing that counts, you know. Um, so, and, and that's

why I didn't want to edit, you know, and I, and, uh, um, 'cause it would

only be reinforcing that unequal nature of the relationship, you know, and,

and I wanted to stay away from that. I wanted to create the balance. I

didn't want to in any way, shape or form, appear that I am inferior

(superior) even it was, you know, only in language skills but it seemed like,

you know, the superiority and the language skills kind of, also it, other

things also seemed to make you superior because, I, and there's no, no

correlation or cause/effect relationship whatsoever. (Zara)

Julia was also the only student who described her message's intended audience as the person to whom she addressed the posting. As a class participant, it had never occurred to me that the audience for my messages was anyone other than the entire class. As already noted, forms of address did not seem to affect the students' sense of audience. I might acknowledge the person who asked the question, or use an opening address to highlight who I thought might be most interested in the information I was posting, but the forum was public and I viewed the postings as public statements. Julia was the third individual that I interviewed, and after learning of the difference in our understandings of audience, I made sure to ask all subsequent interviewees about this topic. Their responses, as well as statements made by the students during the first two interviews, lead me to believe that she was the only student in the class who had this understanding of audience. Julia clarified the interaction between her focus on the individual, and her focus on the individual's native/non-native speaker status:

(I am posting to an) Individual, not, even though I said, I separated into two groups, native and non-native speakers, but however, I think I try to focus on in, actually individually, not the group. However, I think, beyond my brain, or beyond my thinking, I assumed she's native speakers, she's NNS. Right? It's a, this is not simple layer, I think, this might be three or two layers, I think. So, first time, thinking about native speakers and non-native speakers, for the non-native speakers I don't need to elaborate the background, just focus on content, and then, looking at language accuracy and posting, right? This is process, and this is for native speakers' posting, right? So, okay, oh she's native speaker, so I try to elaborate the background, not to leave misunderstanding, right? And then, try to focus on language, writing, and thinking about the content, what I want to say, so it's really funny, 'cause originally, the reason I want to post message is to deliver what I'm thinking about. So, but, for the native speakers, I have more complex procedure, to speak, to deliver, right? But actually, to me, I had different sense of communications, of sense, for example, as I mention, there are totally three different groups, right? And then I try to proceed, complete process into my brain, and then I try to divide into two groups, native and non-native, when I respond. (Julia)

Most students, when reflecting on their bulletin board use, focus on postings or written output. Few consider the role that reading plays in bulletin board interaction. I spent far more time reading and reflecting on the bulletin board than I did writing. My think-aloud

includes references to my attempts to contextualize posts within the frame of classroom discussions, previous postings, and my understanding of the author as I read. I mention reading postings three times if I am unsure of what the author is trying to communicate. Later in the course, I began to mark more complex postings as "Unread" if I thought I might respond to them, so that I could easily go back and reread them before drafting a response. Other students' indicate similar concerns with understanding not only what was said, but also why the student would choose to post those comments.

Though the text of the bulletin board would prove a valuable resource for many if not all of the students in the class, students did not consider reading to be an indicator of activity on the bulletin board. Meg, a native speaker of English, had taken three previous courses with a bulletin board adjunct and had consistently been one of the most active participants. However, during this particular grad seminar, a series of outside events limited the time she had available for the course, and her number of postings fell. Despite the fact that she read all of the postings, she was extremely self-conscious about her performance. In talking about her classroom versus her bulletin board interaction, she made the following observation:

> *Well, you know in that sense it was easier to show up for that (the class),*
> *because it was a scheduled, allotted amount of time and, you know, that*
> *kind of goes back to if you have really poor typing skills, or reading skills,*
> *which I have a hard time with because I learned to read in French, so I*
> *read, I mean I can read in English but I'm slow. So, the time it would take*
> *me to read something and the time it would take somebody else to read*
> *something are not necessarily going to be the same and so, you know, you*

can't say how much or how little time it's going to take, the WebCT

component, so, you know, and again like people who are not native

speakers, they're going to be slower with the reading and the writing and,

you know, so there's, there's, there's that positive aspect to the classroom

environment because it's very, um, cut and dry and you exactly what's

expected of you and you show up and you participate in that allotted time.

(Meg)

Meg's interview is saturated with references to her lack of participation in the bulletin board, to the point that she found it difficult to answer some of the questions because she viewed herself as a non-participant. Yet she read every posting. Earlier comments have demonstrated that students felt a need to post to remain visible to their classmates. Thus, reading was constructed as non-participation, despite the significant effort and commitment required to remain current in the discussion.

The last issue that deserves some attention is the importance or lack of importance that students' placed on technical issues as they were related to their posting behaviour. WebCT is not perfect, and people whose postings vaporize before making it to the bulletin board can be very frustrated. Zara describes one such incident in her interview. However, technical issues were among the lowest scoring factors in students' ratings of influences on their use of the bulletin board.

Table 8

Technical Factors with a Low Influence on Students' Bulletin Board Use

Factor	Mean	SD	Z
Directions provided for bulletin board use	2.75	2.31	-1.89
Technical training and assistance available for using WebCT	2.38	2.39	-2.23
Previous experience with on-line communication as a student	3.25	2.92	-1.42
Previous experience with on-line communication as a teacher/facilitator	1.50	2.83	-3.06

Note: Factors were rated on a 8 point Likert scale, with "0" representing "No influence" and "7" representing "Strong influence.

These ratings did not seem to be affected by the students' previous experience with computers and/or the Internet as students or as instructors. Factors related to an individual's comfort with computers and/or on-line communication, and the layout and ease of use of WebCT received overall ratings with an absolute Z of less than one.

Issues associated with technology that did have a strong influence on students' use of the bulletin board related to access, rather than to technical knowledge, training or experience.

Table 9

Technical Factors with a Strong Influence on Students' Bulletin Board Use

Factor	Mean	SD	Z
Easy access to a computer with a connection to the Internet	5.75	1.98	.92
Asynchronous nature of on-line bulletin board	6.00	1.20	1.15

Note that both of these factors are related to time and the availability of the bulletin board at a time that is convenient for the student. Time is a common element in two other factors that scored highly.

Table 10

Time Factors with a Strong Influence on Students' Bulletin Board Use

Factor	Mean	SD	Z
Time to write and reflect on my own postings	6.13	1.46	1.27
Total course/career workload while taking the class	5.75	1.04	.92

I include two factors with a Z slightly under one. The overall mean for factors influencing students' bulletin board use was 4.77 with a standard deviation of 1.07. Given the positive skew to the overall ratings, a positive Z of greater than or equal to positive one is unlikely. Both of the included factors relate to the issue of time, an issue raised in the interviews, and consistent with two other factors that did have Z's greater than one. Time was also listed by four of the students in response to the open-ended question regarding factors shaping bulletin board interaction.

Thus, the technology itself was not a major influence on students' bulletin board use, but the time that it afforded for thoughtful interaction with peers and with the professor was a key influence. The ability of students to enter into an asynchronous environment may not have changed how students interact so much as it slowed it down, stretching time in a way that allowed for more conscious consideration of how and what to communicate. Especially for non-native speakers, but also for native speakers, this afforded greater control of

language. Time also shaped the relationships that formed between the class participants, a subject explored in more depth in the next section.

4.1.3 The People

An investigation of the on-line interaction in the graduate seminar, whether focused on the output/postings or on the process that generated the postings, is incomplete without at least some attempt to describe the quality and nature of the relationships formed by the people who were interacting. The language used by participants to describe the relationships that formed or didn't form has likely been influenced by discussions inside and outside the classroom, as well as on-line reflections about class interaction. However, the comments are still revealing in what they say about students' perceptions of themselves in relation to the people who they studied and interacted with.

One of the central relationships in any classroom is the relationship between the students and the instructor. If one examines the professor's first postings to the bulletin board, one quickly has a sense of the role he attempted to establish for himself throughout the on-line dialogue. With very few exceptions, his postings fall into one of four categories:

- Short postings, often no more than a single line, which begin with the word "Thanks." They are a response to a student posting a website or additional resource, or to a student's previous reflection.

- Short postings, often beginning with "Yes", which signal agreement with a student's post and that primarily serve to acknowledge an individual's contribution to the bulletin board.

- Short statements or questions that encourage a student or group of students to expand or continue a particular line of discussion.

- An occasional posting of an e-mail that the professor had received describing a lecture series or colloquia that he thought might be of interest to students.

In total, the professor posted one and twenty-three messages (123) or just over 16% of the total messages posted on the bulletin board. However, perceptions of the professor's interaction seem more connected to a student's personal ideas about the importance of a professor in guiding their learning than they do to the professor's actual behaviour. Consider the following:

...(H)e's (the professor) always there. He's posting almost half of the, half of the, if there're, there're hundred, hundred postings then fifty-some, at least, so, huh, that really, how do you say, stimulated or whatever you want to say, then you feel like, he's answering everybody's questions and if he's giving a new question and then you have, that really encourages you to do them. (Bruce)

What I saw was, um, (professor) really participated enough so that people knew that he was around, that he was reading and that he was, um, there, you know, floating out there in cyberspace but not to the extent where people felt, or from their responses and from, from the patterns that developed, it didn't, it didn't seem as if people felt the need to respond to him, although sometimes, you know, there is that, um, sometimes just a comment "Oh yes (professor), I totally agree with what you're saying. (Meg)

He was like the background for the course, like in the background and, but I was always sure that he reads every posting because sometimes when he did not reply he would mention that in the classtime like, oh you raised this good point or you discussed that and this, so he made, I think he just wanted us to know that he presented even if he did not post anything. And, uh, uh, I like that his messages were short. You know short and to the point. They were not long and, you know, discussing this and that, just, just, uh, three, two sentences. I think this is a very good style. (Tanya)

Um, you know I hardly noticed Dr. C. on that bulletin board at all. Like he wasn't even a focal point at all. Like every once in awhile he'd come on and respond to something so that somebody had written, which at the time I thought was a bit trite because a lot times he wasn't really saying anything when he was doing it, but then I realize having done other distance ed courses, I realize how you feel as a person when no one acknowledges when you've written something and I think that that was really clever of Dr. C. to actually do that was he was basically acknowledging that he had read that person's posting and he had responded to it in some way and acknowledged that... (Dominique)

The professor's comments or feedback were very important to me the first few times I posted from Saskatoon; however, I was much more focused on the postings of my peers in this seminar. I remember mentally noting the degree to which he was signalling "I'm listening", and I remember deciding to ignore a post of his that I disagreed with, with not

much more than a shrug of the shoulders. Julia makes similar comments in her interview, noting the importance that she placed on his responses and evaluation of her postings in her first bulletin board interactions, and his near irrelevance to her bulletin board use in this seminar. It is possible that the recognition provided by the professor's "yes" and "thank you" postings are of particular importance to students who have not had a class with him previously, or possibly those who have not used an electronic bulletin board in an academic environment. Students' ratings of factors associated with the professor's bulletin board presence bear this out.

Table 11

**Crosstabulation of Students' Rating of Importance of Relationship
with Professor with Previous Studies with Professor (#)**

	Rating	Previous Course with Professor		
		Yes	No	Total
Relationship with Professor	0	1	0	1
	3	1	0	1
	5	1	0	1
	6	0	5	5
	Total	3	5	8

Note: Factors were rated on a 8 point Likert scale, with "0" representing "No influence" and
"7" representing "Strong influence.

Table 12

<u>Crosstabulation of Students' Rating of Importance of Professors'</u>
<u>Attitude and Demeanor On-line with Previous Studies with Professor</u>
<u>(#)</u>

		Previous Course with Professor		
	Rating	Yes	No	Total
Attitude and Demeanor of Professor	0	1	0	1
	4	1	0	1
	6	0	4	4
	7	1	1	2
	Total	3	5	8

It is not apparent whether a professor's influence on an individual's bulletin board interaction decreases in all situations, or whether the environment fostered by this particular professor leads to the students' perception of his declining influence. However, students who were concurrently using a bulletin board in their own language instruction also believed the professor played a vital role, at least initially.

For starters, the professor's enthusiasm. That makes a difference from the beginning and I found that with my own students this fall that were doing WebCT component and we had five courses, five different sections of the same class, and my students were on first and were participating the most everyday and I was also the only person that really had an experience of WebCT and so, you know, I, I can see that transfer that, if the prof comes in and says you have to do this thing, it's not very exciting or encouraging,

but when the prof comes in and can't say enough about how wonderful this

tool is... (Meg)

Given that all the students have been or were currently instructors themselves, it is not surprising that students were aware of the conflicting pressures and demands on the professor. Those demands also affected how student's thoughts about the professor's presence on the bulletin board.

Uh, even though I think that the professor's presence on the bulletin board,

uh, was much appreciated and it's as if he, uh, by the professor putting,

being part of this discussion, he's kind of in the traditional sense putting

himself at our level or, you know, making it an equal level, there's still an

understanding that he's still the professor. He, he was there as a guide

and, um, a friend, but ultimately he was there as a judge as well so that,

knowing that, you know, didn't completely make me feel like he was just

another peer, you know, that would have been, uh, inaccurate for me to

have thought that. I knew that at the end that he was going to be the one

that was going to give us THE MARK, you know. You know, that is, he,

'cause that is part of, it's, it's kind of a paradox in being a teacher...even if

the professor doesn't buy into it, it's the system that forces him or her to,

so I, I still felt intimidated knowing that my professor would be reading it

and, and, intimidated by, with the professor responded to me, or, you

know, um, so I think it was good that he was involved but it didn't

necessarily make it appear that he was equal. There was still that

underlying knowledge that, no, he's the prof and he's gonna be judging us after. (Zara)

Overall, then, the professor's behaviour was in some ways less important than student's preconceptions about the role of a professor, which may have been entirely independent of any influence from the bulletin board. However, in other cases, the bulletin board created real differences in the interaction between students and the professor, and his feedback was strongly desired.

The professor, uh, usually I'm very shy, I'm a very conservative person and very shy and, uh, I, I, usually stay away from, from, um, teachers, yeah. That is, that is me. In, uh, at, I remember at universities, I never contact with my teachers. I, I dare not to. I, I'm afraid. I was afraid that I would interrupt them, uh, would interfere the, uh, the, the lives and, uh, waste and, uh, uh, I used, used them, the time and they will, uh, they, they're not happy about that, so I just think, well, so I'm, I'm not, I was not waiting to, uh, to ask a questions to teachers, even I had many questions, I didn't raise them and now, since bulletin, bulletin board, um, supplied answer convenient way, to, to contact the, to contact with the professor, uh, I was now willing to, to, to ask questions, even if the questions are not reasonable. And so I think, are not good questions. I just post it out. (Audrey)

Yeah, you know what, I, I, wanted him to, his feedback very much to my postings because, yeah, it was a sign of, you know, he was like, still he is a

professor, you know, he has most of authority, also experience and it was

very stimulating, very good to receive feedback from him. Yeah, uh, and

whenever I received his respond, I was very happy, I was very glad, but at

the same time, see the reverse thing. He usually replied to the postings

that were not receive anything, usually, but sometimes just to comfort you,

to say it's okay, you know, I replied and it's a good one, I think this is a

role of many teachers on the WebCT. (Tanya)

Leadership and direction, of course, come not only from the professor but also from peers. Of the ten students in the class, four had previously taken a course with the same professor, and I shadowed a bulletin board from the previous summer. In a sense, we were the "elders" of the community, people who were familiar with the on-line environment of a classroom adjunct. It has already been noted that one of these individuals was the first to post. Three of the five individuals, along with the professor, played a role in modeling on-line listening in the first few days of bulletin board interaction. One of the notable features of the bulletin board was that individual postings rarely went unattended. Whether the behaviour of the elders assisted in establishing this bulletin board norm, or whether it would have evolved on its own because of the influence of CMC or the nature of the individuals who enrolled in the course, few postings in this course went unattended. It was characteristic of the individuals in this class to signal listening.

All of the students emphasized how the bulletin board allowed them to get to know their classmates better, and that this in turn had a positive impact on what they took from the class. There was often a recognition that the time limits of a traditional classroom simply

didn't allow for students to make these kinds of connections. Students made these comments in response to open-ended questions related to how the bulletin board helped them learn, and more specific questions about their relationships with their fellow students.

...(T)hat's a bulletin board sometimes we talk something, uh, how do you say that, not assigned by the, the teacher and we talked something else, our interest, so from those interest probably we can find something in relation to the course we're learning and also we can get to know each other even better because we don't have time to talk outside of classroom and, uh, maybe that's the way to improve the class, the students' personal relationships, between students and also with the professor and the professor will know us better and we know each other better. I think that's, that is very important. (Bruce)

...(C)lassroom discussions can also be, um, can also be invigorating, it, it, you know it depends on the tone that the teacher sets, it depends on the different kinds of, particular mix of students you have, you sometimes it's just luck in a classroom, um and I like the face-to-face interaction but what, what does face-to-face interaction mean if you don't even know the name of the person beside you or you haven't even really, you know. So, I think that the bulletin board, what I really appreciated was that if I really wanted to I could get some, a background of, of, of the person, of, of the other student, you know, if they had offered it and if I needed to be reminded okay, what did that, where did that person travel to or where did

they...., and I could go back and check it, you know. Whereas when we initially introduce each other face-to-face, we forget 75% of what the person tells us, you know, including their name. (Zara)

Um, I think that it offers so much more possibility for student interaction and in that way, I think I have learned how to interact with other students because one thing that I find, um, the first day of my first MA course at UBC, I, I just wanted to bury myself under my books because it felt like what had been created was this environment where the professor sits at the head of the table and shows everybody how brilliant he or she is, and then the students around the table try and match that. And so it's kind of a rally of, um, showing everybody how much you know and what I see created on the WebCT is the ability to share those ideas instead of show each other those ideas, you know, show them off or, or, um, um, you know, it, it offers an environment where you're allowed to say "I don't know" or you're allowed to express that you don't know without necessarily saying that, um, and where you can, you can share ideas without it being about, um, knowing more than other people and that is something that I think is really ugly about grad school, is, um, when it's about just knowing more than other people or when it's about personal success and there's no sense of a community and I think that that's the other thing that is created in, with the WebCT component because, again, it's a time thing. There is not, there are not enough hours in the course, classroom hours, in, to be able to

really create those relationships and not, not necessarily personal

relationships, they, I do consider them academic relationships, but they're

coming from a more humane place and so they're more humane. (Meg)

Thus, the asynchronous nature of the bulletin board helped students learn more about their peers. This in turn changed how understandings were presented and shared, and the connections that students made between course content and their own and their peers' prior knowledge and experiences.

During the second class, students shared a short synopsis of their personal educational and professional background with their classmates, just as they did in most of my graduate seminars. Sharing on the bulletin board did not take the form of assigned activity. Instead, an individual's background was revealed in the threads that they initiated, and the lens they brought to the discussion. This is not any different than what may take place in a classroom environment. However, the asynchronous environment revealed an individual's thoughts and comments to all of their class members, not only to the members of their small discussion group. Secondly, dialogue was not sequential, and individuals were able to add their comments at what they perceived to be the appropriate point in the conversation, even if the conversation had continued to develop and branch before they had an opportunity to post. Thirdly, there were no time limits, making it possible to hear more voices on a single subject, and allowing individuals to take the time they needed to create their contribution. Thus, the essence of what students shared was no different from what it is possible to share inside a classroom; however, the reality of what was shared changed both quantitatively and qualitatively.

The importance of narrative and storytelling was a common theme when describing how relationships with classmates developed. Students speak of sharing stories, not just across the labelled divide of native and NNS, but also as a bridge between individuals.

...(I)t improves the relationships between the class members. Uh, I have taken some other courses, I even don't know the names. I know both the background because people don't talk that much in classroom but in bulletin board, we are, we write a lot. We just, each person tell their own stories on the bulletin board so we get to know more, get to know people better and, uh, and, uh, we, we are, we are open too. I'm open too so, uh, I have, uh, a will, I am willing to tell my own stories to people who are telling their stories. (Audrey)

Inside classroom and outside classroom. One day I realize, really, this is really interesting thing to me, uh, one of the classmates, named Audrey, she came from China, in classroom, sometimes I met her in classroom, I arrived classroom, uh, thirty minutes earlier and then I met her, but we didn't speak a lot, we didn't talk about our life or our study a lot, we didn't. I don't know why. We came from the similar culture as well, we came from Asian culture; however I didn't speak a lot because I was not intimate about relationship with her so we didn't talk about our private life. However, that day, actually, one day, I was in class and we talk a little bit about our academic interest and our life, uh, in advance the classroom and then we, we had a class that day and then I, I returned my

home and I, I was on the bulletin board, I got totally different, um, different sense of interaction between her. Cause in class, I was not very close to her, however, on the bulletin board, I felt like she is old friend to me and then I was fully ready to post myself, actually, my story and then I try, I was fully ready to understand her story, her background. However, in classroom, it is not easy to connect the background from the bulletin board into the classroom. It's quite funny. To me, human interaction is better than, Gum, on-line or other electronic communication. I believe so. However, in that case, on the bulletin board, it's much better to understand her, much better to show myself to her. (Julia)

One can also see students modeling their communication style to the communication style of the individual who originated the thread. The majority of Audrey's posting incorporate some form of personal narrative. Towards the end of the class, one can observe fellow classmates choosing to respond in narrative.

Article No. 1468: [Branch from no. 1247] posted by **Audrey** on Thu, Nov. 23, 2000, 19:32
Subject: re: Englishisation
Hi, All, I had a nice talk with Tanya while we were sitting side by side checking BB. We discussed about how accent influence L2 learning. I am planning to write a paper about home schooling. Tanya encouraged me to speak English with my son at home. But I hesitate to do that because I am concerned that my accent will influence his. This idea came from my father. His English was very good. He received his English education from western missionaries in two universities (one in Shanghai, another in Wuhan). But he did not teach me English for two reasons, one was mentioned above, another was that English was not allowed to teach when I was at a optional age for language. Untill 1977, China restored the academic tests and the universities were ready to enroll English students, my father and brother's encouraged to learn English. But at that time, my father had already lost his hearing. He could not correct my pronunciation. So he asked one of his colleagues with highest English proficiency in my father's school to help me. My father then regretted that he did not take the risk to teach me earlier. Now I come across to the same problem with my son. Should I teach him at home or not?

Article No. 1472: [Branch from no. 1468] posted by Julia on Thu, Nov. 23, 2000, 20:17
Subject: re: Englishisation
Hi Audrey,

I am so sorry to hear you couldn't get any help to improve your English from yo ur father. Your English is very good in writing, listening, and even your pronounciation. However, I think you are not comfortable with your pronounciation, also you feel it should be improved. Of course, it would be very good if your problem is improved, but we have no problem to communicate with one another. Your and my undesirable pronounciation seems to be already fossilized considering our age. However, I think, there is a margin to be improved.

Back to the anxiety, your son can learn English fro m you. The reasons are two. First, he is old enough to perceive mistakes when you pronounce not perfectly (I think, your son is Grade 11, right?), since he is exposed to English environment every day. He can compare your pronunciation with native speake r's, and he would try pronunce correctly. On top of that, your pronounciation might be improved by
talking with him in English.

The second reason why you need to teach him is that you don't need to worry about his Chinese because as I mentioned above, he is old enough not to lose the first language, but you need to think about his English that is a basic tool to intermingle with his school friends. I have seen many cases that parents who have grade 10, 11,or 12 children came here Canada, and they were in dilemma in their children's poor English. That's why they are hiring ESL tutor. Students might feel they are not in major group due to the lack of English fluency.
Audrey, teach him English with your accurate and fluent English. Save the money to hir e ESL tutor for your son.

Hope this helps you. Julia

Article No. 1477: [Branch from no. 1468] posted by **Diane** on Fri, Nov. 24, 2000, 01:16
Subject: re: Englishisation
Hi Audrey,

I can't make an informed comment on whether you should speak Engli sh with your son, but I can provide an anecdote.

My brother's best friend's parents emigrated from China. When the oldest of their five children started to attend school, they could not speak English. The youngest two children learned some English from their older siblings before entering kindergarten. As well, by the time the youngest children entered school, their parents had begun to occasionally speak English at home. The parents' English was and is heavily accented. I still have to listen very ca refully to understand what Mrs. Kwan is saying.

The youngest two children's accent is purely Canadian. Most Canadians would not be able to discern any trace of a non-Canadian accent in the older children's speech either.

Diane

Article No. 1481: [Branch from no. 1468] posted by Dominique on Fri, Nov. 24, 2000, 10:12
Subject: re: Englishisation
Audrey,

Like Diane, I can only offer an anecdote. It's interesting, the multiple perspectives on this issue.

My mom immigrated to Canada with my Grandmother from Germany in the fifties. Canada was so anti-German at that time, that they were extremely motivated to learn English. They also learned that Germany, German people and the German language were 'bad', and my Grandmother, who didn't speak a word of English, decided that only English would be spoken at home. My uncle and mom speak accentless English and learned it very quickly. However, they would have learned it quickly without speaking it at home under these conditions.

The unfortunate thing is that everybody lost their German (even though my Mom was already a teenager, and theoretically shouldn't have lost her language), and all the good things that go with it. Maybe they could have had English days and German days. I think that when a native language ceases to be spoken at home, it loses a lot of value.

Another anecdote: my Chinese Mom (I call her my Chinese mom because she's the same age as my mom and I'm very close to her) emigrated from Singapore to Britain and then to Canada, and they spoke English with their 2 sons. The sons understand Chinese a bit but don't speak it and have spent their whole life in Vancouver. When they visit their grandparents in Singapore, they can't communicate with them. I think that's really sad. Also, imagine how valuable knowing Chinese would be for them in Vancouver!

Article No. 1491: [Branch from no. 1481] posted by Audrey on Fri, Nov. 24, 2000, 19:37
Subject: re: Englishisation
Dear Diane,

Thank you very much for your interesting and convincing anecdotes. By the time I finished reading your article, I made up my decision: keep the balance. Speak Chinese to my son at home and write email to him since my writing doesn't bear accent.

I appreciate your suggestions and others' advice. Thank you for your support.

Perhaps the most depressing element of the students' comments was the description of their relationship with their classmates in this graduate seminar in comparison to other classes that they had taken previously or were taking concurrently. Whether responding to a question about their relationships in the seminar being studied, or a question that evoked a comparison and contrast, I repeatedly heard how students didn't know the names of most of their classmates in other courses. The comments of the three native speakers interviewed

were particularly striking, as each described how they entered a classroom expecting to have

no meaningful contact with their peers.

Maybe it's because of the past experiences in other classrooms where, you

know, where you weren't expected to know your other classmates and they

were, it was assumed that they were competition, you know, and you don't

reveal anything about yourself or how much you know and you're always

trying to prove yourself and so maybe I just had been so conditioned into

not letting, you know, classmates get too close that even though the WebCT

bulletin board provided me with, you know, ample access to information

and, and helped me to know the other students better, I was so conditioned

from the past that certain barrier wasn't gone. (Meg)

Yeah, well, to be honest, I didn't really feel that I got to be that close to the

other students in the class through the bulletin board. Certainly, I became

close to students, um, closer to students, got to know more about the

students, to, to, the students in the class than other classes I'd taken all

through university without a bulletin board. Um, but at least in this case I

knew their names. You know, in the big lecture halls or in a lot of the

classes, I didn't even know 80%, maybe 95% of the students names and the

name can tell, you know, says a lot about a person too....I think it was still

interesting to know their per, to know personal histories and that attitude

of openness and sharing. I thought that was, um, an advantage and

something very different from what I had been exposed to in the past in the

university environment. (Zara)

Um, well, you know what, when I went into it, I went in there with, like, no

interest in developing a relationship whatsoever because it my billionth

university course and you just don't have any expectations of having a

relationship with students. Like, at all. So, I kind of go in there thinking

I'm not even going to waste my time, really, you know, go in, go out, go

home. And I think at the end of it, I was, like, yeah, it's true, you know, we

really did have, like, formed, we formed a relationship and that that wasn't

a bad thing, and it was actually kind of nice and, you know, I think I grew

to appreciate that, but I'd never had that opportunity, ever, before. You

know, it's always disappointing 'cause I'd actually gone into classes

before in university and said, okay, like, you know, I'm gonna, after this

semester I'm gonna meet a couple of new people and get to know them,

and blah, blah, blah and it never, ever happened, ever. So, I think I went

in there just thinking, you know, oh, I'm not going to bother, I'm not, I

don't have any time to waste, you know, like, you know, I don't really care

about the social at all, it was, it was just get the job done and, and now,

it's like invaluable, like it's really, it's, I mean it's obviously it's gone

beyond (the graduate seminar) and it's, you know, it's taken more than just

(the graduate seminar) to develop a relationship with people, but it's been

really beneficial and it's been, yeah, it's been great, it's been really

important, yeah. (Dominique)

Students were aware that their relationship with their classmates changed the quality of the classroom discussion. At least some of the students perceived the connections that were forged as facilitating the development of academic rather than personal relationships.

"...(I)f you are not familiar with the class members, the discussion is not

so, uh, so, uh, so free, so open. My feeling's that." (Audrey)

It was, it is because, as I mentioned, in regular, traditional classroom, due

to the time limits, we don't know about what we are interested, so we don't

know how to help each other. 'Cause usually teacher has twenty students

or fifteen students, but it runs in only three months, right? So it was not

enough to know each other, so however on the bulletin board, yeah, we can

help each other academically, academic purpose, not for any social, that

can be, however, mainly I think bulletin board was used for academic, uh,

sense, academic purpose. Yeah. (Julia)

Like I think it was good to, I mean you get somebody else's view, and if you

think differently then, you have to somehow defend yourself, which is

essentially what you have to do anyways in academia. You know you can't

just sort of throw something out there and expect it to fly, you know,

there's always somebody who has something to respond to about it and it's

good 'cause it makes you be sharper in what you're saying and what

you're, you're writing and what you're thinking too. So, I think that's, I

think it's, has potential to be really useful but, um, then again I think that

works because we had somehow developed relationships and a sense of

community, I think 'cause, um, when I think again of my other courses

where that doesn't really work it's like you're so afraid to write anything

because, I mean, for a lot of different reasons, you know, you feel like, you

feel so intimidated by the whole thing, you know, so I've experienced the

opposite side of the coin so I think, in comparing that, I would think (the

graduate seminar) worked because there was a sense of community and

it's a small enough group, there had been some relationships that had

formed, and it was, it was a very safe and comfortable environment, I

think, for doing that. (Dominique)

The impetus for many students' participation, and for their guilt if they perceived themselves to failing to participate adequately, was a sense of obligation to their classmates. The sense of obligation that students felt towards each other was evident in the interviews and in the bulletin board postings themselves.

There's a kind of a, so that's one of the reason you have to answer those

questions because that's a, like a, you have a sense of belonging when you

are in that, uh, active bulletin board activities and you feel like if you

don't, for one day if you, you, if you are not there, you're missing

something like, uh, that's a group. Everybody's there. Although you can't

see them, although it's cold machine, sometimes when you use it for two

hours it becomes hot, but still it's a cold machine, but you can feel the,

especially why I said I liked this kind of course is, uh, because you know

each other, you know all your classmates already. Then, on the bulletin

board, that's the bit extra. (Bruce)

Article No. 1070: posted by Dominique on Tue, Oct. 10, 2000, 12:33
Subject: Absent
Hello,

My friend is visiting me from Spain this week and I won't be able to spend much time at my computer. I feel like I need to explain my absence, so if I'm not replying to those who have addressed me in their posts, my apologies.

Article No. 1077: [Branch from no. 1070] posted by **Diane** on Tue, Oct. 10, 2000, 22:29
Subject: re: Absent
Hi Dominique,

I laughed when I read your message. On my walk home from campus, I had been reflecting on the sense of obligation the bulletin board instills in me. If I don't respond promptly to a posting, I feel like I am doing my classmates a disservice by not "listening" to the ir ideas.

You'll be missed this week, but we understand your absence. Thanks for letting us know where you are.

Article No. 1082: [Branch from no. 1077] posted by Aura on Wed, Oct. 11, 2000, 17:05
Subject: re: Absent
Hi Diane and Dominique,

I feel the same sense of obligation --perhaps more so since this is my only contact with class members. I too must apologize for my absences. We have been experiencing numerous unpredictable power outages in the past week (it was out for 3 hours this afternoon) and this affects my
ability to go on-line.
I hope my timing improves.

Aura

Thus, there are a variety of factors that converged to create a sense of community among class participants. One of the indicators of my own developing sense of community was the difference in my sense of priorities and obligations in the four classes I was taking. When I thought about my classes that did not use a bulletin board, my thoughts reflected a concern with one-way communication such as writing a paper or finishing a reading. When I thought about the graduate seminar that is the focus of this study, my priorities related to communication with my peers. If I was reflecting on a reading, it was often in the context of the issues that I would like to discuss with them. These obligations also felt different. I had to write papers and read assigned articles. I wanted to discuss ideas with my peers.

The choice of the word "community" to label the nature of the relationships that developed is somewhat problematic. Although I cannot remember all of the contexts in which this choice of metaphor arose, anyone exposed to writings on computer-mediated communication would be familiar with its application to on-line environments. It is a metaphor I commonly use to explore the relationships among learners. I chose to present the article by Haythornthwaite et al related to the development of community among distance education learners. The class discussion that ensued included comments about the positive and negative features of physical communities, and how the word was used as a metaphor. The word and the metaphor carried over into conversations with my peers after the class had ended. Thus, though I avoided use of the word during my interviews, using it only in the context of the larger academic community, it is not completely surprising that it was part of the common lexicon of the class participants. But the discussions do not render the word meaningless. As Baym points, individuals can have a common sense of the word even

though its potential multiplicity causes problems in academic discussions. Certainly, the sense of group or community was strong enough that students had a sense of being "in" or "outside" the group.

> *"If you're not there, as I said, you have to, you have to be, uh, active, involved because everybody's there and if you are not there, you are a loser." (Bruce)*

> *Well, in comparing, you know, the, the times when I did participate and the times that I didn't participate, the perception, my, my feeling a part of that community definitely, is definitely different, and of course, in, in an environment where I'm not participating so much or, you know, not at all, um, I definitely feel removed from that community. (Meg)*

However, this does not minimize the complexity of what students were attempting to represent. It would be interesting to explore exactly what it is that students felt "in" or "out" of, for in all probability, there would be differences as well similarities in how students perceived the community or communities that developed. Julia was quite explicit in describing her perceptions of the complexity of the interweaving of individuals and cultures:

> *Um, it is not simple to me. It is actually very complex. Um, usually when I look at the discussion, um, talking between, uh, native speakers, it is totally different context and I can say it, yeah, three different kind of context, different community sense. First one interaction between native speakers; secondly, interaction between native and non-native speakers, thirdly, interaction between non-native speakers. First one, uh, between native*

speakers, the stream is more fast and, um, they use more, uh, vocabulary which is not used in common, um, daily life. To me, sometimes I could find out very difficult words from their discussion. Right? And secondly, discussion between native and non-native speakers. Native speakers posting shows politeness or more, how can I explain this one, compared to the native speakers' interaction, for the native speakers' interaction, they don't need to say, they don't need to show politeness, they just get into a topic, right, but, uh, interaction between non-native speakers and native speakers, native speakers, um, style is not like that previous one. It is more like try to ela, elaborate the context. It's really hard to explain, okay, it's more politely and more elaborated, elaboration or more detail rather than previous one, and for the interaction between NNSs, usually we got Asian, we got the people who has the Asian culture, Asian backgrounds, and then they try to talk about their own culture, and, wow, this is really, this is really, yeah this is similarities between your culture, and your country and my country and they got different sense of community even if we say talking about the bulletin board, we got the community sense from the discussion, however, I saw the totally different context, different community sense from the different participants, actually, so first one was native speakers' interaction, and second one was native and non-native speakers' interaction, and lastly, non-native speakers' interaction. It was, uh, it's really hard to summarize all the difference among them, but it was, to me, I interpret totally different community sense among them. (Julia)

As I review my own think-aloud, and reflect back on my own posting behaviour, I can understand the differences that Julia perceived. For me, however, these differences were not characteristic of differences in communities, but differences in how individuals addressed each other, and in the combination of care, caution and respect that went into crafting a message. If my objective was to facilitate a shared understanding of each other's viewpoints, I had to begin by attempting to understand how another individual understood the situation and communicate from that point, not from the point of my own personal beliefs or experience. In my think-aloud, I find myself noting details such as one individual's current teaching position, the dynamics between two individuals in the classroom, the importance of attending to the relatively infrequent postings of one student, and the pleasure of seeing a post from someone who is really making me think. In each case, these details affected how I chose to respond. The chasm between NS and NNS, so important in Julia's perception of communities, was no larger to me than chasms related to professional experience, an individual's stage in their studies or an individual's political beliefs.

For NNSs, the value of understanding their classmates' minds transferred to the classroom, and assisted them in comprehending the classroom interaction.

> *So that's the one I, I find I, uh, uh, through bulletin board postings I understand, like, uh, each of my classmates better. I know, I can see what they are thinking about, uh, so next time when we are in the classroom, uh, when they are talking something, that we understand already, I, I, I can't say we understand them 100% beforehand but still you know his main idea, what he's trying, and what, what is his attitude and what his trying to*

say, so I think that that improves relationship among students and the teacher. (Bruce)

Students were willing to speculate as to how the helping relationships evolved, but they were not always in agreement. Some saw it as a natural outgrowth of the communication between students. Others saw it more directly tied to the specific individuals who were participating in the class.

Everybody's helping each other... it happens naturally because you are part of the class, and, uh, you're, it is your responsible to answer the question somebody raised to you or to the whole class and also, you feel like that. At least, I feel like, uh, I, I have to answer those questions. I can't ignore it and at same time, when you answer those questions, you are helping those people. (Bruce)

I think it's just a group dynamic. To be honest, I wonder if it would work that well again with different people, you know, like, that would be the magic thing, I guess, is to figure out what, what kinds of personalities you need or, yeah, I don't know. (Dominique)

Even so, the appearance of the word "community" in the students' reflections, as either a marker of the norming influence of the classroom language or the agreement amongst students as to the role they played in each other's learning, is striking. Community, though, is only one aspect of the relationships that developed with the assistance of an on-line bulletin board. There was subtle but meaningful shift in how NNSs were perceived by

their classmates, a shift that resulted from changes in the amount of available information, not from a shift of personal or professional beliefs.

> *Um, it made them more legitimate, for sure, again because they weren't encumbered by this language, face-to-face thing, I mean, I thought everybody in our class had so many intelligent things to say, and, you know so interesting and it was from, different perspectives were so illuminating and, you know, I thought everyone was just so brilliant, you know, and then that whole thing about, um, how do you, do you respond to them differently, like to cater your language differently to these NNSs and I never felt the need to, it never crossed my mind to word something differently 'cause it was just like, their so good, you know, they were, they were, everybody was so brilliant, you know, so, yeah, yeah. You have a lot of respect, you have, I think you have a chance to have more respect for other people, you know, regardless of what their language is, so. (Dominique)*

> *I think that having the WebCT showed me NNSs' real ability to communicate their competence. Um, because, you know, in more than one situation, I saw NNSs not saying anything in class or saying something in class I understood but that was not very clear and there was a lot of interpretation involved and then seeing them, seeing clear, concise statements on the bulletin board, and so seeing their competence, seeing their knowledge, seeing their understanding of what's been going on, so I*

think that that's, that was, that's a big thing, because it's so easy to listen to a NNS and forget that that person, you know, I mean it doesn't matter the education they have, it doesn't matter any, none of that matters because all you hear is someone who's maybe not using that signifier correctly or, you know, whatever, who's not expressing them in....that was perfect....not expressing themselves perfectly and I think especially in an academic environment, I mean for me, as soon as somebody says something that's grammatically incorrect, it triggers me, like I notice it, English, French, it doesn't matter and when, but in academia I think that, and especially at, at, at this level, ... it's so easy to forget that that person has, might have, a whole breadth of knowledge that I know nothing about, and seeing on the bulletin board, seeing that breadth of knowledge, really, um, opens your eyes to, to, well, to that prejudice even, and to that stereotype or misconception that, you know, just because I can't express it very well, it doesn't mean that I don't know about whatever topic it is. (Meg)

Well I felt that, um, with the bulletin board, they (NNSs) could get their main idea across very directly. They just couldn't be flowery with the language and use idiomatic expressions and, you know. But that's fine. Their ideas would come through and, and even though the grammar may not have been perfect, their ideas were very interesting and their experiences, you know, and anecdotes were interesting, so it didn't really

matter, you know, that they're, they forgot an "s" there or they misspelled

a word here, you know. So, um, I think that the bulletin board helped, uh,

me perceive the NNSs as being very knowledgeable, very, um, having

something very intelligent to say. They were more opinionated than I

expected, than from what I had seen in class and they had this richness of

experience and viewpoints that I wouldn't have been able to have access to

in the classroom because of their shyness in speaking. (Zara)

The implications of these shifts in perception, and the students' greater familiarity with their peers, will be explored at greater length in the discussion.

4.2 Learning

Learning does not take place because technology exists. Learning takes place because of how technology is used. The reader will find many similarities between the students' description of learning using WebCT and the learning they have experienced as a student and as an instructor in a classroom. In this case, however, it is the result of the opportunities afforded by this specific on-line space.

A variety of themes developed during the students' discussion of WebCT and learning. These themes emerged during the discussions related to content and/or general learning, and re-emerged in discussions about learning language. As will be seen, it was the differences in the application of the opportunities and resources, themselves the result of the differences in the students' foci, that changed how students capitalized on the space.

4.2.1   Diversity

The on-line space created through the use of WebCT seemed to offer the students the opportunity to encounter and engage diversity in a meaningful way. Diversity of thought, opinion and idea caused students to reexamine their own understandings of the subject under discussion and how their understandings formed. Two factors appeared critical to the impact of the discussions:

1. The breadth or quantity of diversity, the representation of which was made possible by the asynchronous nature of the conversation.

2. The opportunity to reflect upon the diversity, which resulted both from the asynchronous nature of the conversation and its permanence.

I learned volumes and volumes about all the things that people talked about because, I mean if I'd known all that I would have typed it all, right? You know, I mean, but having, um, people from all different experiences, you know, I mean, someone, someone who was born and raised in Korea versus someone who was born and raised in Canada but went to Japan and taught there and lived there for seven, eight years, you know, and having the diversity of the different experiences and all of the knowledge that comes from each of those experiences, I mean, I can't, I couldn't list to you all of the things that I learned (Meg)

I learned, uh, different cultures, like, like different way of, of thinking and different, uh, and, and as I said, diversive perspectives. You discovered a lot of things and we discussed a lot of things, uh, and a different person

have a different opinion to a same, to the same, to a same subject. (Audrey)

Um, so I learned, probably the, uh, the first thing that comes to my mind is I learned about diversity. So even though I met people of different cultures before, but I never had a chance, real chance to learn about them on a deeper level. It was always on the level, hi and bye, you know, International House arranged the meetings but, uh, you know, it was surface level. It was not, I did not have a chance to be exposed to way of thinking of these people, their background knowledge and their style, and, uh, you know, some, uh, personal characteristics because by bulletin board, you can say, you know, this person is aggressive, or this person is nice, you know, this person is willing to share, this is not, you know, and this, so this gave me an opportunity to learn more about people of different backgrounds, different cultures and made me realize that, so these people are great, you know, and, forget about culture and stereotypes. So this is first. (Tanya)

Graduate students are encouraged to think critically and deeply about research in language education and their personal experiences in the field. It therefore seemed relevant to ask the students to reflect on critical thinking and WebCT. Diversity facilitated adopting a critical perspective.

I think that WebCT, um, improved my critical thinking skills because having such an open forum allows one, a student to see different points of

view. In a traditional classroom, you get the one point-of-view, for the most part, the teacher's or the author of the textbook, you, know, maybe two, but usually the teacher follows what the author in the textbook, and maybe he doesn't sometimes but, hey, that's two points, different points-of-view that you get to hear or listen to or read but in, in the bulletin board, in such an open forum, you had open to fifteen, twenty different points-of-view from students coming from all kinds of cultural backgrounds and academic and professional experiences and, because of their own unique way of viewing, you know, ideas and exper, experiences and experiments and research, it really kind of helped you to see things from a different point-of-view and therefore hone your own critical thinking skills. (Zara)

...(D)ifferent people from different perspectives of understanding the same topic, that helps you to think more deeply because then, sometimes you think you are right on one thing but, wh, after you reading others' postings, you, oh, I'm wrong. You know, or somebody's thinking is much better than yours and oh, I should thinking that perspective, from that perspective. So, good, I think it's great. You can't get that from classroom discussion (Bruce)

The professor's emphasized the need and importance of critical thinking throughout the length of the course. For some students, adopting such a stance involved entirely new ways of thinking, and the bulletin board was one venue for exploring different ways of looking at the world.

Well, uh, he, uh, he initiated questions and, uh, thinking, critical thinking. I think he's supporting critical thinking and, uh, and this meant that's the most that I learned from, from, from professor (unclear) and then I think differently than, than before as I, as I use to be........ Um, before, before I, I took this course, I just, uh, um, accept any knowledge passively and now I, I think, I use the critical thinking method to, to, to reflect what I read, what I, uh, learned. (Audrey)

Because, uh, you know, um, interestingly, it's also cultural thing. Uh, when I was in Russia, I was not taught to critical thinking so we just, uh, okay this is what the authoritative people say and hence they are right. And it's North, in the North American culture, there is such term critical thinking, development of critical thinking, which is very important for the purpose of education here in North America and I first heard, heard of it in Alaska and then here again, uh, so anyways, I started to think, wow, critical thinking. So I can put and question anyone, you know, unless I was not told about it, I didn't know. I was ready to accept anything and, and so again I was exposed to people which use critical thinking, you know, uh, and I could see discussions, like arguments on the bulletin board, uh, so I, excuse me, I do not agree, you know, I don't think, I think in different way, you know, and this also makes you think about this, you know, so if you, so you have the right to have your own opinion, you know, you have, and, uh,

you know exposure to this, you know, is very, very helpful to development

of critical thinking. (Tanya)

It was through dialogue that students encountered diversity. The conversations revealed both diversity and the acceptance of diversity, which facilitated and emboldened students to share more of themselves and their stories. Dialogue occurred on and off-line, and some students specifically refer to the discussions' crossing between the classroom and the bulletin board. These discussions communicated both the content and the developing relationships. While students may or may not have focused on using WebCT to improve their academic writing skills, students were consistent in their description of the bulletin board as a space for meaningful discussion. Interestingly, students placed a greater emphasis on building, sharing and developing their understandings rather than communicating a point-of-view.

...(A bulletin board is) a place where you can, a sounding board for your

ideas, but that also gives you the opportunity to be coherent, and, um, be

concise in what your thoughts are, whereas that doesn't really exist in the

same way in a face to face environment....it's not that formal but at the

same time it's not, um, having to immediately respond to someone else's

ideas or having your own ideas and then having all of that change by one

thing that one person said, but not really having the time to formulate your

own ideas in a classroom setting. (Meg)

Dialogical form is critical too. Yeah, so, more motivation, more, so you do

not again as I told you, you do not fell this empty, you build on others'

opinions, draw some agreement and disagreement, so whereas in classroom you just remember who said something two people before you, three people before you, but on the bulletin board it's huge number who participated, say something and then you post, write something and then go back over and, God, someone already told it, okay, that happened to me twice or three, well, sometimes, so it was opportunity to go back, to see and build on not only a couple of people's opinions but on many people's opinions. (Tanya)

I analyzed the interview transcripts and the bulletin board protocol for themes related to learning, and only later returned to my own reflections recorded while I participated in the course. After several months at a computer keyboard, I had forgotten my own reaction when I began my studies.

My family and friends have been anxious to hear about my change in career direction and my new academic world. Unfailingly, I tell them that my peers are the most stimulating and rewarding aspect of attending UBC. During the first week's introductions, I listened with absolute joy as people provided brief biographies. Places and times juxtapositioned as they rarely do – Yakutsk, Indonesia by way of Bolivia, Mao's China, a child of a current Chinese Communist functionary, Japan, Korea, Canada by way of Romania, Iran, Serbia and other countries of the former Yugoslavia. People who had traveled. People who spoke multiple languages. People who had seen and known the world in different ways than I had. My

neighbours in my academic community brought me the world. Not all of

these individuals were members of the community of (the graduate

seminar), but the bulletin board afforded the opportunity to learn more

from these classmates than from some of my others.

So I thought then. In their own way, so too did my classmates find opportunities for

learning among the diversity represented on the bulletin board.

4.2.2 Support

Diversity and difference does not imply the existence of conflict in a traditional,

negative sense. As much as students benefited from exploring the range of experiences and

opinions offered up by their classmates, they also drew from what they had in common.

Often, students found emotional as well as intellectual support on the bulletin board.

It helps me because I realize that the other students in the class are going

through the same kinds of difficulties, are thinking the same questions, that

I'm not weird, that what I think other people are thinking and feeling and

experiencing. I'm not the only one, I'm not alone. So it provides me with

sort of psychological or moral support, you know, that maybe I'm not that

stupid or, you know, that other people are wondering the same thing, you

know. (Zara)

Certainly NNSs found the on-line space to be a supportive environment. Whether the

assistance resulted from students' increased awareness of the challenges facing their

counterparts, the manner in which CMC appears to facilitate the development of helping

behaviours and norms, the professional sensitivity of students who were and are language

educators, the modeling of supportive behaviours by students who had previously used WebCT, or to some combination of these and other factors, support was a dominant feature of the climate of the bulletin board.

Hmm, it's very supportive. Sometimes for a, for, if I have a question, I post it, and, uh, anybody has that information, is willing to respond and if I did not think that question, I did not think that area, and somebody else is raising the question, and I get idea and some, from the questions and answers, you are, I, I, I, I, I learned so. (Audrey)

Yeah, I gained confidence. I always gain confidence from, uh, from you, from (the professor), you know, I think this is a very, very good strategy, good, good thing to encourage other people. Uh, like, uh, several people told me that they like my postings and, uh, well I could tell by, you know, the feedback I received, I don't think I was ignored, you know, my messages received received feedback. Okay, good, good feedback and, uh, that means that people are interested, you know... (Tanya)

Despite my personal antipathy to any discussion related to motivation, I would be omitting an issue of that was cited by five of my classmates if I did not touch on the subject. Unlike the students in Warschauer's study, learning about technology rarely was mentioned as a source of motivation. This is consistent with the lack of importance students assigned to technology when rating the influences on their bulletin board use. However, for a variety of different reasons, students found that using the bulletin board motivated them academically. It was both a carrot and a stick.

I was more motivated and sort of forced to do the readings and do my research and my homework with the (graduate seminar) because I knew I couldn't just leave that classroom and forget it, about everything until next week, you know. (Zara)

You know, you got to really understand a lot about every different kind of person, especially because it was such a mixed group. I think that that was what was beneficial to that, uh, yeah like it's, learning from that, I mean the value of it was the fact that we got to have all these great discussions, and they were really, they were fairly high level and they were really interesting and it really made me want to go continually and read messages and to be stimulated, you know, I was so stimulated by the, all the discussions and that kept me stimulated in my work and throughout the whole semester, you know, which made me really excited about being at school. I mean, it's , it's much more, for me it became a personal motivator, I guess. (Dominique)

4.2.3 Resources

The majority of postings focused on sharing and building personal understandings and they were dominated by statements of opinion; however, in their conversations, students also shared resources that they had encountered in their personal readings and investigations. These resources supplemented the significant resources available on the course website. For some students, the bulletin board encouraged reading beyond the assigned course readings.

*I really appreciated the wealth of resources and links that the course
provided with the, with the content. Um, I, I learned a lot because it was
all there, and I could read it and I could comment on it and provide my
opinion on it right away, through the bulletin board, and if I had a
question about it, I could contact, you know, one of my peers or, or Dr. C.
and discuss it right there and then, or, you know, I knew it was out there,
you know, or I could at least get the ball rolling with a question regarding
the content. (Zara)*

*...(T)hat also, uh, uh, provides me with more, uh, how do you say that,
resources to, to, to get to the, because each time I found, like, lot of the like
you and Dominique, Dominique or, uh, Julia and they always find some
new, um, uh, how do you say that, URL, right, for, for certain articles and,
uh, literature so you can, you can look for (them)... (Bruce)*

While acknowledging that the bulletin board increased the number of resources
available to him, Bruce also found that the bulletin board detracted from his reading. The
demands of reading the bulletin board, which itself can consume a significant amount of
time, added to the time it took to write and edit responses, sometimes left Bruce with
insufficient time to read the course readings and the additional on-line materials as carefully
as he would have liked.

*But the other thing is, at the same time the negative factor is because you
have to spend those time on-line, you don't have that much time to read,
you know, to read those assignments, to read, uh, those books. Right, even*

you have time to read it, you just flip over, I mean, because you can't

study, can't study. You spend most of your time on bulletin board. (Bruce)

He later noted that the trade-off was worthwhile for him, because he believed the language

gains he made using the bulletin board outweighed what he lost from not reading in the way

that he would have liked. However, it is noteworthy that the benefits that students derived

from using the bulletin board were sometimes achieved at the cost to the benefits they could

have derived from alternative activities.

For students beginning their degrees, the bulletin board served a pragmatic role in

helping them to discover and refine their ideas for their major papers or theses. It acted as a

de facto data bank of possibilities, as well as a source of feedback on the rough beginnings of

research questions.

From, uh, participating Web-CT, I can, I got a lot of ideas to do research,

uh, uh, I'm, uh, in charge (?) to have lot of ideas at that time and I wrote

them down. But later on, I, I changed, I changed many times my ideas so I

think it's good way to learn content. (Audrey)

...(I)t stimulated me for other thinking too, like you know just thinking

about my thesis project, you know, after having only been there for two

months, you know, I don't think I would have arrived at that as quickly as

if I had taken, you know, other courses and had time to sort of, oh, I'll do

more reading and just see, and you know throw, you know like it just, it

made things so much more, hmm, proactive or something, it just felt like

things were going to get done a lot quicker. (Dominique)

4.2.4   Learning On-Line

One of the reasons cited for including technology in the delivery of education courses is to facilitate student's understanding of the possibilities of technology in the classroom. For students who used bulletin boards and other forms of CMC either concurrently or in courses they took in the following semester, there was a heightened sense of awareness that technology did not create the learning environment they experienced in the graduate seminar. Students expressed surprise at how easily the norms of a physical classroom could be transferred to on-line spaces.

I have to compare with this other course that I did, the distance ed one where you had a lot of that but it was extremely structured, you know, it was like okay, get in your groups and then on this day your gonna present your article and blah, blah, blah and that was, it was like being in a traditional classroom again, only you didn't have the face-to-face, I mean it was, it was kind of, it was that same feeling.   It was kind of weird. (Dominique)

As students described the on-line environment in other courses, the contrast between their own use of technology in the different spaces was also apparent. Although Audrey was very positive about her learning as a result of using WebCT in the graduate seminar, it bore no similarity to her description of her use of WebCT in another course. The assignments were different, and she altered her behaviour to fit the assignments. Even though she could have used the bulletin board to read and reflect on other's postings, and/or discuss topics of mutual interest, she did not.

Uh, in that bulletin board, the, the instructor just ask us to post two or three, uh, technical tips to the bulletin board, so it's not real discussion. So you just post it. It's just like do your assignments. So the discussion between the class members is not so, uh, so much involved. (Audrey)

Bruce, who had taken other courses with CMC adjuncts by the time this interview took place, believed that balance was key.

I think this one is good because, uh, uh, I took another course, it's called, uh, (distance education course), that's (distance education course). In the first two weeks, I, I just, um, I was, I like it so much because I thought that, that is a distance learning like distributed learning course. Then at the end I find it's worthless because I don't like it at all and I'm not going to take that kind of course anymore because I spent three times that I should, that's, I mean, I just like taking three courses but actually I took only one so, um, that's everything you do, you have to do it on the bulletin board and you have to do it that much things, that you have to write three, uh, papers. Yeah, and you have to, everyday you have to be on, they, they record how many times you are there and how many notes you have taken there, all these things. So, uh, (the graduate seminar) is right in the middle, not like the other courses I'm taking, there's no bulletin board discussion at all, I don't like that. We need some time for bulletin board but we don't need too much time spend on bulletin board. Yeah. So (the graduate seminar)'s j', I think it's right on the middle. If, if (the professor)

or some other doctor assign me, like, uh, more work on the bulletin board

that would be too much probably to have it. (Bruce)

Students also found that the bulletin board caused them to reflect upon and alter their classroom behaviour, in particular as it related to their NNS' classmates.

Uh, I thought it was really interesting that some of the students who were shy to speak in the classroom came out in the bulletin board discussions and, uh, so, I felt that, how did that influence me though? (Pause) I guess it influenced me by making me more, more aware of, you know, that first of all, of how, in a sense, disadvantaged those students are, because they're silenced, you know, in a language education class which is all about, you know, expression and voice and it's so important for their voices to be heard and then they have such a rich, you know, background and experiences, and, that we, there are, there's a lot to be gained so I think it, it increased my awareness of how difficult it, it must have been for them, you know, um, and, and to really, just because they were silent in class, they were listening and they had something to say too, and, um, it made me more aware of their opinions and their backgrounds and their beliefs on the bulletin board. It also made, therefore, in the classroom the next day, I would, you know, reconsider, seriously think about what I was going to say, and in light of what I had read from the students who were silenced in the past, you know, that, that, the night before. So, I'm glad that their voice was heard through the bulletin board and, you know, at least. (Zara)

Several of the course participants had taught using WebCT at the point that the interviews for this thesis were conducted. They commented directly on the impact of their participation on their teaching practice.

I think that, you know, as I said, being able to see how, how people improved and in what areas they improved and trying to, um, find a correlation between the different NNSs and their rates of improvement or the type of improvement that they had, um, transfers to my own language teaching, so, or, and use of, of bulletin board in a language course. (Meg)

So you start to, uh, you know I never thought of people who have learned a language, that they are stupid, you know, only because they were silent, because I myself when I first came I didn't tell to North America, my language was more limited and many times I just kept silent even though I had many thoughts in my head, you know, and that time as well, when I meet, when I'm in the classroom with second language learners who always keep silent and, I'm sure they have something in their minds, you know, they have so much to share and they just feel sorry that they can't, you know, they don't have the opportunity, so, and, uh, uh, so it's, you know, I, I don't see any changes, I, because I, you know, it's not a discovery for me that those, those people have something to contribute, 'cause usually you reveal that on the bulletin board, you see, read, oh, this person kept silent and now, wow, what he thinks, what's his contribution, well, you get impressed. Personally, we did not have such people who kept

silent, everyone contributed face-to-face and on the bulletin board, but with my Ritsumeikan students, I was amazed, uh, Japanese girls were so shy, but then they participated on the bulletin board and I, wow. They keep silent. If we did not have this bulletin board, I have had never, no idea about how, in fact, much they had to share with, and, um, yeah, and I think this bulletin board, even, usually native speakers, they, uh, they, uh, contribute more face-to-face, um, such impression that, uh, they're, they are, uh, more knowledgeable perhaps, since essentially they participate, they will contribute whereas native speakers, non-native speakers keep silent, they don't know, you know, the assumption is they don't but it's not true and bulletin board gives an opportunity to, to demonstrate it, to prove that, you know, both native speakers and NNSs are equally knowledgeable, and they can contribute to topic. (Tanya)

The graduate seminar with its accompanying bulletin board adjunct was only one of the courses which students complete as part of their graduate studies. Coursework represents only one aspect of the learning opportunities that present themselves to students pursuing a graduate degree. It would be difficult for any of us to separate one thread from the skein of our learning and declare it as the definitive cause of our intellectual growth. None of the students' comments should be construed as such an attempt. What these comments represent is a belief that the bulletin board enhanced what they were able to take away from the graduate seminar, and they highlight the particular facets of the bulletin board interaction that had the greatest influence on their learning. The diversity represented on the bulletin board,

the additional resources that the bulletin board made available to them, and the personal and intellectual support that students found on-line all had meaning for the students who participated in this study.

4.3 Language Learning

> *It's really good to use language, to feel it, to play with it, you know, to have, to taste it, this is great, you know, whereas in the traditional classroom, most, many times you just keep silent, you don't opportunity to play with language, to use it, to receive feedback and this is a great feeling when you have a chance to use this language. (Tanya)*

The students in this seminar who did not speak English as a first language were constantly aware of the barriers to learning that language presents, and of the potential that each situation presents or denies an individual to further developing their language competence. In the graduate seminar, students had formally and informally discussed the benefits of using a bulletin board in language development. Therefore, it is not surprising that native and NNSs raised these issues even before being asked directly about the language learning and the bulletin board. Yet the following numbers underscore just how dominant language-related issues are for the NNS in a graduate classroom.

Table 13

Language Factors with a Strong Influence on Bulletin Board Use

Factor	NS Mean	NNS Mean	Group Mean
Language improvement objectives	1.00	6.75	3.88
Personal language improvement strategies	1.00	5.75	3.38
English abilities	4.50	6.50	5.50
Language use by professor	3.75	6.25	5.00
Language use by classmates	3.50	6.25	4.88

NNS' sensitivity to language-related issues led them to take the diversity, resources and support that facilitated students' learning, and find ways to capitalize on these assets to enhance their own language development. The diverse opinions expressed on the bulletin board provided a range of models as to how opinions might be expressed. In contrast to classroom interaction, the permanence of the bulletin board afforded NNSs dynamic models of how students interacted and presented their ideas. NNS found the examples liberating, in the sense that they realized that there were not only multiple ways in which to view a situation or experience, but also multiple ways in which to express themselves.

I can't tell what new words I learned but I learned some constructions, sentence constructions, ah, some phrases, um, how to start, genre, how to start, I learned about different styles, writing, depending on person, I learned about personal style from the native speakers. So we had many native speakers and all of them had, each of them had their personal voice,

personal style, and, u, usually, uh, language learners think that there is only one way, think of language as something static, it's just one form, one construction, you just need to know that and it's universal for everything. But, in fact, each of the writers has his or her own personal style, and we, I haven't been exposed to such personal styles before I took this course and now I could see and was exposed, so this is Dominique, she sounds this way, this is Diane and she sounds that way, this is, uh, (another student) and she sounds totally differently, but all of them are native speakers so it probably gives you confidence in terms of even I, if I make one mistake this is my style, unique style, and the others, Dominique and (another student), you know, and that was very good experience, very excellent experience to be exposed to different style and, uh, also it was an experience to, to be experience different cultures. You could see the culture in language as well. And also the goal, diversity not only of styles but cultures, of background knowledge that influences you, your style. (Tanya)

The diversity in the models was freeing, but also supportive. NNS believe that the bulletin board provided concrete assistance in finding language for their voice and ideas.

Yeah, very, I, uh, I think it's very helpful especially for writing. Sometimes if I don't know, uh, how to express myself well, and if I read others' postings, uh, I get idea how to express myself. In the same situa(tion), for example people, uh, post their postings to describe their situation which is, uh, which are similar to mine, so, I learn the way, how to write. (Audrey)

I learned English language a lot, in terms of vocabulary and technical

terminology, as well as idioms which are used in common life. It was

really funny to me, uh, 'cause one day I found out the really difficult or

interesting word from the, um, from the postings, I try to use the

vocabulary in my postings as well, right, and then I try to apply the

knowledge or vocabulary, um, on the base of pragmatic usage. So that's,

that's one thing 'cause as you know, within, in traditional education

system, it's once, fast stream of discussion, so it's really hard to, uh, look

at actually why, what I talked or what I listened... (Julia)

NNSs attending graduate school at an English-speaking university have many sources

of language models available to them. However, the language models provided by the

bulletin board were viewed as a unique and valuable resource. Students had a definite sense

that these models were different than those provided by other texts.

I think the postings on the bulletin board is quite different from the words

in the books...Uh, it's, um, it's more, um, the, the content, um, on books are

more academic and formal, and the discussions on bulletin board is more,

uh, is more living. I think it is more active, more, more attractive.

(Audrey)

These models seem to act as models for thought as well as models of language for

expressing thought, and it is interesting that these types of comments were made not only in

relation to queries regarding critical thinking, but also as general reflections on the use of the

bulletin board and language learning. Permanent conversation, such as conversation carried

out on an electronic bulletin board, makes a conversation's evolution visible. However, an individual's thought processes remain invisible, just as they are in a classroom, and the decisions that each individual makes related to what and how to post become potentially more complex because of the time available to craft a reply. Nonetheless, the bulletin board appeared to be used by some NNS to investigate both deductively and inductively how academic discussions evolved among NS.

> *So, and then, we can see the topic has been evolved into a, sometimes the topic or discussion might be, uh, um, deviated from the first issue, it was quite interesting to look at the first message and the last message, we can choose just one of the message randomly, even if the messages under the same topic but the message was totally different finally. They are talking about totally different one so, it means actually, I could look at the way they developed the topic, developed the issue, right?......(S)ometimes we can see coherence between totally different issue, even if they are talking about different topic, but I could learn, however, I could learn the, uh, I could learn the, I could learn a lot from the different issue, even if they are talking about different issue, but I could learn the, the process of their – thinking process. My thinking process is like the graph, that's what I'm talking about, sometimes it's curved, sometimes it's straightforward, it's like that way, that's what I learned from the discussion on the bulletin board. (Julia)*

Thus the bulletin board postings acted as permanent models for the academic discussion and academic thought. But they were not merely models. The bulletin board presented real opportunities for practice. It has been noted earlier that the asynchronous nature of the bulletin board helped NNS overcome some of the barriers that they perceive as existing in classroom discussion. The ability to practice and to engage in "real" discussions with their classmates may in turn have led NNSs to perceive that the bulletin board made a difference in their language competence. Although descriptions of the differences varied with the individual, the speed at which they processed language was common to all four NNS.

> *Physical speed and also the thinking way, uh, when, when you thinking more and you think faster, respond faster, just automatically.... So I think it's automatically, you are, you increase your speed of respond writing and reading too. And, uh, when you get the more convenient with the content on the bulletin board, you discuss and then you, I, I, I think my case, I'm more competent in class discussions. (Audrey)*

> *You know, I, in terms of, um, discovering your personal voice, it's good and it's good in terms of accelerating your speed of writing. Your thinking process, so it really developed, if not the grammar side or dictionary side, but it developed, uh, this, uh, another side, you know, person, finding personal voice. (Tanya)*

It should also be noted that NS as well as NNS used the bulletin board to develop their language skills. The opportunity to hone their academic writing skills was often central to NS's language objectives.

> *And, um, what I really enjoyed was, uh, my, the opportunity I had to hone my English language writing skills, even at, you know, being at a graduate level and having done a degree in English literature and having to have written lots of essays in English, you know I always feel that there's room for improvement and I found that knowing that I had the time, uh, to edit my postings, knowing that my professor would read them and most of all that my, you know, the other students, my peers would be reading them, you know, really made me think twice before posting it and, and clarified my ideas and my thoughts and, um, made me realize where my gaps in knowledge were so that would encourage me to go and do more research and reading and, uh, not only linguistically, in that subject area... (Zara)*

For some NNSs, the bulletin board was a useful resource for monitoring the progress and development of their language skills. It appeared to act as a personal on-line portfolio, with NNS describing how they reviewed their messages immediately prior to posting them to the bulletin board, and also how they reviewed them retrospectively to assess their progress.

> *Yeah, I think mostly against my, I, uh, in a, in a posting way I think is progress. If you think you are, are competing with yourself then you are just check back, what you have done over there. So I think it's good way, uh, to do some self-assessment on your own progress. (Audrey)*

Yes, um, as I'm an ESL student, and, uh, I think that helps a lot because using the bulletin board I can, most of my classmates if they are native speakers, they, allow they just follow their, their thoughts when they are typing, sometimes I can see make lot of errors and, spelling or whatever, grammar, but still they are, they're trying to be academic on the bulletin board so I can learn lot from that. And also, I can see my, my progress because I can always go back to check it and I like it as a tool to improve my language. (Bruce)

NNSs, struggling to make the adjustment to English-speaking classrooms and dealing with the different unwritten rules for behaviour and interaction, found the bulletin board played a vital role in helping them gain meaningful access to classroom interaction. Although the conversations on the bulletin board did not always mirror what had transpired in class, they still seemed to provide clues for understanding the classroom interaction, and thus scaffolded the NNSs active participation in the class.

...(R)eading, learning from reading is, uh, important area to me and, uh, especially at the very beginning my listening to the instructions is not good, was, was not so good so without the bulletin, with, uh, w, with, without the help of bulletin board, I, I don't think I can get so much from the classroom instructions because of the listening ability. At the, at the, at the very beginning the first few months especially. (Audrey)

...(S)o I think I'll be more active on bulletin board than in the classroom although I want to be very active on the classroom but sometimes, because

of the, uh, of the language problem or because of the listening problem, I think sometimes comprehension problem or because of, ooh, maybe, that, that, is not pro, that is language problem because of your, you don't understand content well, I think, but on bulletin board you can, you can go back and then look at content and look at the topic a few more times and have a full understanding of the topic and come back and do it again, even posted, uh, message, then you don't like it, you can do it again. But you know, you, you probably won't, you won't have chance to do it again in the classroom. (Bruce)

NNS were asked if they could have made the same language gains without a bulletin board. These opinions are highly subjective, and there is always the risk that individuals will subconsciously validate their prior experiences by attributing outcomes to their time and effort where no such cause/effect actually exists. However, most were confident that the bulletin board made a difference.

"Even though I keep writing diary but it's not communication. It's just self-to-self, not other people so, um, you cannot get a response, so I don't think I can achieve academically as much as I have bulletin board." (Audrey)

It (the bulletin board) helped me a lot in writing. I, I can tell that I, uh, began to write much better but I, well, I don't know, uh, is it a result entirely of the bulletin board or maybe, of other classes where we had written also papers, also contributed, uh, but I think at least half of it is

contribution of the bulletin board because, it's just, I could feel that my voice, uh, I, I was developing my voice, you know, maybe not entirely I developed it but still it contributed to the development of personal voice. (Tanya)

"Compare. (Pause) Much better. Much better is the right answer or not, much better, actually. Bulletin board gave me a lot of opportunity to improve language rather than classroom." (Julia)

However, Julia was speaking in general about her experiences using an on-line bulletin board. She was less certain that the specific graduate seminar being studied had helped further her English language capabilities. Her personal objective for the bulletin board had been to observe and learn more about the interaction of NS and NNSs on-line. She had not put the same energy into her own language development as she had in previous classes, despite the priority she placed on developing language skills when interacting on the bulletin board. For her, interaction alone on the bulletin board was not enough to foster improved language competence; it was also necessary for her to actively seek out opportunities to address her own language needs.

Chapter 5: Discussion

The focus of this study has been on developing a thick and rich description of the use of an on-line bulletin board used as an adjunct to a graduate seminar, with a particular emphasis on the factors that were perceived to influence learning and language learning. Access to the diversity, support and resources afforded by the bulletin board were seen by the students as scaffolding the growth of their content knowledge, their language competence and their relationships with their peers. However, neither the nature of the learning nor the factors that contributed to learning are unique to electronic bulletin boards. They are familiar to anyone who has experienced a good learning space, physical or virtual. The focus, therefore, returns to the original research question related to the nature of the relationship between the technology, the students and the learning environment. The question becomes whether the specific features of computer-mediated communication (CMC) facilitated the development of factors that contributed to learning in this on-line bulletin board adjunct and, if so, how. These issues are explored through an examination of the interrelationship of the characteristics of the on-line environment, the opportunities for agency afforded by the space, and the nature of the community that developed within this context.

5.1 The On-line Environment

The three radicals of persistent conversation identified by Bregman and Haythornthwaite (2001), visibility, relation and co-presence, are in evidence throughout the interviews and the bulletin board protocol. The sense among the participants that reading did not equate with participation, and that a failure to post would leave one "out" rather than "in", provides perhaps the most obvious illustration of students' sensitivity to the issue of

visibility. Even regular class attendance did not assuage one individual's guilt related to their lack of bulletin board interaction, as evidenced by the sentiments expressed by Meg. Visibility required making oneself manifest in text. Text in this particular forum required interacting with peers. Zara makes the point that participation in a classroom environment may require no more than being physically present, but that participation on the bulletin board necessitated actively engaging both ideas and fellow students. The act of achieving visibility resulted in students engaging in the social realm, the realm where learning initially takes place (Senge, 1994; Lave & Wenger, 1991; Brown & Duguid, 1991; Vygotsky, 1978).

Issues of visibility also involve the choices related to the presentation of self. Participants' anxiety evidenced in earlier studies was also clearly an issue in this particular learning space (Haythornthwaite, Kazmer & Robins, 2000; Sengupta, 2001). Whether it was the initial anxiety expressed on the bulletin board by Dominique and myself, or the on-going concern expressed by individuals such as Julia, the receptivity of classmates to our texts was a continuing concern. The differences between being judged in a face-to-face environment, and being judged on-line are less clear-cut. The sense of control provided by the asynchronous environment could both increase and decrease the stress associated with self-presentation, depending on the individual situation. Perhaps this is because students described their anxiety relative to the anxiety they experience in face-to-face discussions. For at least some of the non-native speakers, the lack of immediacy provided time to more fully develop and craft their ideas, and to present themselves in a manner that they believed more accurately represented their true capabilities. It also eliminated the non-verbal cues that Julia and Tanya described as sometimes inhibiting their classroom participation. For some participants, such as Audrey and Bruce, the bulletin board was considered the difference in

whether or not they could even make their competence visible, as the speed of the classroom interaction did not afford them the opportunity for active engagement.

There were, however, native speakers for whom visibility in text initially increased the anxiety associated with interaction. Where the time afforded by asynchronous communication may have allowed NNSs to gain control over the quality of their communication, the availability of the same time for reflection perhaps resulted in NSs becoming more aware of the multiple potential interpretations of their self-representation. These concerns are evident in Dominique's comments regarding the differences in the participation styles in Québec, and my own insecurities regarding assumptions related to my business background. Students who might consider themselves competent in face-to-face discussions now found themselves faced with the multiple ways in which their message could be construed by their classmates. In this situation, a lack of visual cues would exacerbate problems associated with communication, because there is no immediate feedback loop as to how one is being perceived (Herring, 1999; Jones, 1998b). The time and distance that provided NNSs a sense of control potentially resulted in the reflective NS feeling less control.

Thus, issues of visibility heightened students' awareness of others' perceptions of their identity, and issues around control of identity. This also linked to students' perceptions of themselves as members of an academic community, and the expressed need among many of the participants to create quality, meaningful messages. Visibility linked to an emphasis on quality, which in turn impacted on the quality of the diverse resources that students drew upon for their learning.

Issues of relation are concerned with the complex understandings of audience, and the ties that existed or developed over the length of the course. Understandings of audience were shown to vary across individuals, with forms of address often having little connection to the individuals that the writer or reader viewed as the potential audience. In this on-line space, messages were generally perceived as public property. However, at times posters often shifted their tenor and tone to match that adopted by the initiator of the thread, or to fit patterns of interaction that had been previously developed between specific individuals, as shown in the dominance of personal narrative in the thread initiated by Audrey. Bruce's light-hearted comments were responded to in-kind, even though the same people rarely employed that style outside their interactions with him. For Julia, audience was comprised or at least affected by her preconceptions of groups, native versus non-native speakers, Asians versus non-Asians. Audience was simultaneously all and specific, perhaps in the same way as oral conversation is conceived in a physical classroom, with the exception that these interactions formed a permanent record.

Persistence altered relations. It was not just the ideas and comments that were recorded in the digital space. The protocol was also a written record of individuals attending and listening to the comments that were made. Research in CMC from the fields of communication studies, business and education has already identified how some on-line groups develop norms of sharing and acknowledging sharing (i.e. Haythornthwaite, Kazmer & Robins, 2000; Constant, Sproull & Kiesler, 1999; Herring, 1999; Wellman & Gulia, 1999; Wellman, Saliff, Dimitrova, Garton, Gulia & Haythornthwaite, 1996). In this on-line space, the norm may have developed from behaviours modeled by the professor and by students with previous experience in similar on-line learning environments, from students' own

developing awareness of the importance of written acknowledgement on-line, from other unidentified factors, or from some combination of the above. Comments from individuals such as Julia, however, are evidence of individuals' growing awareness of the need to provide this type of support.

From my personal perspective, the impact of these written acknowledgements had a more significant impact on the developing relationships among seminar participants than the attending we did while participating in classroom conversations. Tanya's reaction to the response to her postings, including her description of feeling validated as a Ph.D. student, is particularly striking. Written acknowledgements, in the form of persistent conversation, strengthened the sense of personal/professional ties to classmates. It acted as a reward for thoughtful engagement. In turn, it seemed to encourage at least some individuals to contribute and reveal more, for as Audrey said, it was:

> *"Just like you are in the water, you, you cannot stop, you, you have to swim. And like you are, you are on the road. Everybody's walking, you cannot stop, standing there."*

In a cycle of engaging, of being visibly and personally acknowledged for one's engagement, and then engaging again, it would be virtually impossible for relations between individuals to remain unaffected.

It is more difficult to verify whether or not issues related to co-presence in persistent conversation were significant in how the on-line interaction and learning unfolded. Issues of co-presence relate to the temporal, virtual and/or physical co-presence of participants. The bulletin board was used as a seminar adjunct rather than as a distance learning space, but the

thesis methodology does not fully capture the interaction between the cues provided in other environments and the on-line space. The issue is further complicated by the relationship between the physical classroom and the on-line space, and variations in the personal communication between the professor and individuals participating within the class, issues which also involve the radical of relationship. It may be that the radical of co-presence demonstrated the greatest variability in its impact on an individual's thoughts and behaviour on-line. Although I met with the professor only once outside of class during the course, the comments of my classmates made me aware that others were meeting with him more frequently. As this study was completed after the course was finished, it was not possible to capture face-to-face communication so as to examine its interrelationship with the bulletin board interaction. Students' comments on the relationship between the classroom and the bulletin board varied widely, with perceptions ranging from the classroom and the bulletin board acting as two discrete learning environments, to the classroom and the bulletin board being highly complementary and congruent. If perceptions of the interrelationship between the digital and the physical are so divergent, then perceptions of co-presence and its impact are also likely to vary widely.

However, if the impact of co-presence cannot be ascertained, it is still apparent that co-presence was an issue. Dominique noted that having met classmates face-to-face eased her concerns about posting. Bruce "sensed" his cold computer becoming hot and felt the omnipresence of the professor and his classmates on the bulletin board. "Everybody's there," he said. Aura repeatedly initiated chats, indicating a need for immediacy in her contact with her peers. Co-presence was an issue, but this study was not able to capture either the degree or the range of its impact on this specific learning space.

The theory of the radicals of persistent conversation, a frame for examining the influence of technology/CMC on learners, is therefore useful for analyzing the influence of CMC on bulletin board interaction. But perhaps it fails to adequately address issues related to temporality, especially as those issues pertain to NNS. Most writing on CMC focuses on the transcendence of the limitations of time and space through the reduction of time and distance. However, for a NNS, using CMC to overcome time's limitations also involves using it to stretch and expand time and distance. Conversational interaction does not have to be immediate, and as illustrated in Exhibit ? (the one showing the thread on page 94) can occur days or weeks after receiving a conversational prompt. Input can be read and reread, either during a single log-in or during several bulletin board visits. As described by the NNSs, a space is created that allows for consulting related sources, dictionaries, earlier messages or other resources of the students' choosing. The issue of co-presence, then, can be considered relative not only to the sense of being in the same time and space, but also to the ability to fragment time. Students can step out of the space to reenter at a time of their choosing. Students control the creation as well as elimination of distance at will, an important consideration when viewing the space through the eyes of a NNS.

The radicals of visibility and relation seemed to foster meaningful interaction, as well as to reward and reinforce norms of supportive behaviour. It would be simplistic and deterministic, however, to suggest that the essence of any learning environment can be so easily captured with a short list of variables. Indeed, the theory of persistent conversation is based on the premise that while radicals are recognized as shaping CMC, CMC constitutes neither a genre nor a determiner of outcome. Rather radicals are the series of common understandings among interlocutors that influence but do not result in the specific texts that

develop. It follows, then, that radicals co-exist with other sources of influence on the on-line environment. In an educational environment, another key source of influence is the course design and the implementation of the design by the instructor.

The comments by Audrey, Bruce and Dominique make readily apparent that not all CMC-mediated learning environments are alike. That each student was commenting on another course using the courseware WebCT makes this point all the clearer. On-line spaces, like physical spaces, allow for multiple outcomes. The key elements of the course design, so far as the evolution of the bulletin board dialogue was concerned, were the relative importance of the bulletin board to seminar performance as indicated by the percentage of marks allocated to bulletin board interaction, the open-ended description for the bulletin board's use, and the role assumed by the professor on-line. Each of these interacted with the radicals of CMC to create the key features of the learning environment described by the participants.

The mere existence of a space does not guarantee its effective use. The mark allocation for the bulletin board played a role in initially drawing students to the bulletin board. It clearly signalled that the bulletin board could not be ignored. While the features of persistent conversation may have helped to keep the students involved in the conversation, it was the mark allocation, reinforced by the professor's encouragement, which spurred the initial engagement. The mark, as Zara said, was always there.

The other critical role played in allocating thirty percent of the course grade to the bulletin board was the time it freed from completing other tasks. Although the seven students who were interviewed were unanimously positive about the impact of the bulletin

board on their learning, it was equally clear that at times the workload of the bulletin board could be oppressive. This was particularly true for students such as Meg and Bruce, for whom reading speed was a factor, but was also evident in Tanya's description of her "crisis". Even for Dominique, who found that the bulletin board contributed to a significantly different learning experience than she had previously experienced in post-secondary institutions, the mark allocation was significant. It reduced what she perceived to be the amount of "busy work" required of her, affording her the time required to interact on-line.

Some may see an inherent conflict in the importance of the mark allocation, and the motivational effect of the bulletin board described by the majority of the students. Time is potentially the reconciling factor. Regardless of the benefits delivered through the use of a CMC seminar adjunct, time must be invested to generate the benefit. In order to foster the conditions that the students described as contributing to their learning, a significant number of the class participants must thoughtfully engage and invest in the bulletin board's use. Given the wide range of time demands placed on individual students in their personal, professional and academic lives, time is often the commodity in the scarcest supply. The mark allocation impacts the proportion of students' time allocated to the bulletin board.

The open-ended nature of the assignment for the bulletin board's use was initially disconcerting to those who had not previously had a class with this professor. The space did not have its own established genres, and even those who had previous classes with the professor would not find themselves in the same community. The course outline (see Appendix I) emphasizes the ability to share and critique student papers, thesis proposals and scholarship applications on-line; however, in face-to-face interaction the professor simply emphasized getting on-line and using the bulletin board. Critiquing of papers and proposals

became a negligible proportion of the bulletin board interaction, and very few messages contained feedback beyond a signal of agreement or disagreement. Instead the freedom to develop the group's own patterns of interaction became one of the key influences on students' use of the bulletin board. This freedom is more typical of environments associated with public bulletin boards, than with course discussions designed around a weekly discussion question. This freedom afforded students opportunities to exercise agency in their own learning, an area which will be explored further later in the discussion.

The third element of the class design that seemed critical to some, though not all of the students, was the nature of the professor's interaction on-line. Students are accustomed to "reading" their teacher, trying to figure out what they want, what answer they expect and what is required to get a good grade. The more cynical student would argue that meeting a teacher's expectations is the primary goal of a course, with learning taking a distant second. Comments by Bruce, which indicate that he perceived the professor as contributing more than three times as many messages to the bulletin board than he did, serve to demonstrate how students' perceptions can be distorted by the heightened importance they place on the professor's opinions and ideas. However, the professor's engagement on the bulletin board primarily took the form of acknowledging and recognizing student contributions, and notifying students of additional presentations and seminars that were taking place on campus. For some students, such as Dominique, Julia and myself, he became largely invisible, his comments' background to our interaction with our peers. For other students such as Tanya, the visible affirmation that they received from the professor in the audience of their peers served to validate their contributions and their perception of themselves as legitimate participants in the academic discussion. For individuals who were using a bulletin board

adjunct for the first time, the professor's influence was of particular importance, as evidenced in the students' ratings of the factors that influenced their bulletin board use. The students' range of responses to the professor's on-line interaction, the reactions themselves potentially affected by their prior studies with the professor and their interaction with him outside of the classroom, become a factor in the learning environment with the potential to shape all subsequent interactions. Although understandings of the interactions may be unique to each individual, recognition of their existence is commonly held among group members. The professor's choices regarding the nature and quantity of his involvement, and the students' reactions to those choices, are therefore a critical element of the shape of the on-line environment.

The study of the differences in the cognitive complexity of student on-line interaction with and without the scaffolding provided by a trained facilitator (Veerman, Andriessen & Kanselaar, 2000) raises the possibility that students will attend to the interventions of the facilitator to the detriment of their depth of engagement with the subject matter or task at hand. This study of a graduate seminar made no attempt to quantify or measure the cognitive complexity of the students' discussion, but students consistently characterized their interaction as meaningful and deep. Dominique described the bulletin board as a place to think. Thus, there appears to be a duality in the need of some students for acknowledgement and support by the professor, and the coexisting need for a space in which learning is not led but rather scaffolded by interaction with peers. The conflicting demands on the instructor, and the effective translation of those demands into a pattern of on-line interaction are an issue in the development of an effective course design/architecture.

It is in the interaction of the seminar design and persistent conversation that one begins to find the source of the factors that contributed to student learning. The mark allocation and the professor's encouragement got people to the bulletin board. Issues related to visibility created an internal pressure to maintain a textual presence, for simply reading the bulletin board was not perceived as participation by the students themselves. The time afforded by asynchronous communication to craft one's message and the lack of visual cues reduced the barriers that non-native speakers face when attempting to join a face-to-face discussion, although as Julia's comments show these anxieties were never truly eliminated and for some native speakers these anxieties were at least initially increased. The sense of being held up to the judgment of one's peers, as well as the perceived connection between the digital text and one's sense of self, led most students to concern themselves with the quality as well as the quantity of their messages. Written "listening", required to indicate attending on a bulletin board, served as recognition for one's messages, whether the acknowledgement was provided by one's peers or the professor, reinforcing that one's contributions were valued and acting as an encouragement to continue to constructively engage in the dialogue. Tanya and Julia both spoke of waiting eagerly for a response, with Julia making the analogy to someone buying a product at her store, and Tanya describing her desire to improve upon a contribution if it failed to generate a response. The open design allowed individual contributions to take different forms and to involve different subjects, expanding the range of alternatives for successfully entering into the dialogue and effectively utilizing the technology's affordance of the potential to carry on multiple simultaneous conversation threads. The design capitalized on the flexibility of CMC to accommodate different genres and discourses, allowing the students to shape the discussion to their

personal needs and interests, much as the work groups studied by Orlikowski et al (1999; 1995; 1994) were found to develop their own communicative norms. In this context, the interaction of the radicals of persistent conversation and the seminar design acted upon each other in such a way to afford agency to students, and the outcomes of student agency further interacted with the features of the on-line space to shape the resulting community.

5.2 Agency

Creating learning environments in which participants take shared responsibility for their own and for others' learning is a tricky business. It is not as simple as the instructor bestowing agency upon students, or affording the opportunity for students to exercise agency. Agency will not necessarily be directed towards learning. Students' pre-existing schema of formal learning environments, of the role(s) of class participants, and of the relationships that will exist between class participants, are a powerful force unto themselves. The existence of such schema among the study participants is verified by the descriptions Meg, Zara and Dominique gave of their expectations (or lack thereof) related to peer relationships in the seminar.

At this point in time, most individuals have not developed preconceptions of what it means to learn on-line. To a certain degree, and perhaps for not much longer, educators are faced with the challenge and the opportunity of students entering the space truly uncertain as to what they will encounter. However, class design facilitates the transfer of pre-existing schema. Dominique's description of her distance education class, and Audrey's recounting of posting her assignments on a bulletin board demonstrate how easily students' schema for classrooms can be transferred to on-line spaces. Although discussion in the earlier graduate

language education course contained less evaluative comments, the discussion still appeared to follow a question-response sequence (Kamhi-Stein, 2000) and other researchers have expressed concern over students' failure to use on-line spaces to engage in deeper and more reflective conversations (Angeli, Bonk & Hara, 1998; Bonk & King, 1998). Studies of on-line genres indicate that pre-existing genres as well as the genres that students bring with them from previous on-line interaction are among the influences that shape the specific genres of an on-line space (i.e. Yates, Orlikowski & Sokamura, 1999). Like studies of the use of CMC in work groups, social structures from the physical world are carried over into the on-line space (Zack & McKenny, 1995). Yet, relative to a classroom, on-line spaces are uncharted territory for many learners. The lack of pre-existing schema may facilitate the creation of on-line spaces that not only afford agency, but which are perceived to encourage it.

If agency is the ability "to take meaningful action and to see the results of our decisions and choices" (Kramsch, A'Ness & Lam, 2000, pg. 97), then engaging in a discussion that furthers one's own and others' learning must surely be considered as evidence of agency. The affordance of agency was one of the outcomes of the interaction between the technology and the course design in this setting. This was particularly evident in the behaviour of the non-native speakers. The average number of messages per student and in the students' own description of the differences in their participation levels are evidence of the opportunities afforded to them. Non-native speakers could enter the conversation, therefore they did. To at least some extent, their power to act upon what they learned was enhanced, a factor critical to the development of a successful learning community (Senge, 1994).

The open design of the class, accompanied by the ability to carry on multiple on-line conversations simultaneously, allowed native and non-native speakers to enter the conversations from their point of competence. The point-of-entry was not limited by a pre-selected topic of conversation, by a question selected to frame a discussion, or by the manner in which a conversation evolved. A student could begin or enter a conversation from their personal point of strength, comfort or competence, whether that referenced a personal language dilemma, current or prior work experience, life narratives or an academic reading. Entry into a conversation did not have to be immediate, but could take place days or weeks after an originating message had been posted. Time and topic were no longer barriers. Students could choose how and when to enter conversations. Their control over these factors received among the highest ratings related to influences on their bulletin board use. The ability of the space to accommodate the diversity inherent in a community (Lave & Wenger, 1991) enhanced the affordance of agency. In essence, each student was allowed to demonstrate their current level of knowledge and ability, the centre of their zone of personal development, allowing peers to expand the discussion from that point.

The bulletin board afforded opportunities to exhibit agency, and the students diverse responses in turn led to a diversity of voices and resources on the bulletin board. Perhaps one of the more interesting contributions of the bulletin board to the students' learning is that it seemed to go beyond affording agency and to actually facilitate the exercising of agency. In a sense this was coercive, for pressure was created by the marking system, the need for visibility, and the developing sense of obligation to others in the class. However, these same factors, along with the open discussion design for the bulletin board's use, resulted in more frequent interaction that went beyond the question/response pattern observed in many earlier

studies of bulletin board adjuncts. That these same students described themselves behaving differently in other courses using bulletin boards suggests that this was not solely the result of the personal characteristics of these individuals or this group of people. Nor does it appear to result directly from the technology, but rather from the interaction of the course design, features of persistent conversation and the developing models of use continually constructed by the participants throughout the seminar.

Modeling of on-line behaviour by students who had previously taken a course with the professor may have played a role in how students took advantage of the opportunities afforded to demonstrate agency. Models of learning as a social activity emphasize the importance of interacting with more experienced or skilled individuals (i.e. Lave & Wenger, 1991; Gallamore & Tharp, 1990; Vygotsky, 1978), and the non-native speakers spoke of using others postings as models for their own. "Experienced" users offered additional resources, began threads linked to readings, told stories, shifted topics mid-thread and acknowledged speakers. Diversity was evident early, and was rewarded by positive comments from both the professor and peers. These interactions "were" a bulletin board to new users of a bulletin board, and there was an element of surprise in Audrey's, Bruce's and Dominique's subsequent encounter with other models of on-line use.

Thus, multiple factors in the on-line environment resulted in the affording, encouragement, modelling and coercing of individual agency. When coupled with the commonly shared, unspoken objective to carry on an academic or deep conversation, agency contributed to the overall learning of class members, as it facilitated the development of the learning resources shared with the community. These same factors shaped and were shaped by the community that evolved in the on-line context.

5.3 Community

Having been a participant in the class being studied, and having experienced the class as community, it was difficult not to presuppose the existence of community at the onset of the study. As indicated in the "Methodology," the issue of community was not addressed directly in the interview guide, except as it related to the students' perceptions of themselves as members of the larger academic community. The interview began with an advisory to disregard the opinions of the interviewer and the professor when responding to questions. The question of community was approached indirectly by asking students about their relationships with their peers. Four (4) four of the students used the word "community" before it was used by the interviewer. Two additional students disregarded the larger academic context when responding to questions about community, and instead talked about the class as community. All commented on the difference in their relations with class members in this setting in comparison to other learning environments. Thus, there was a general understanding of the seminar as community and the term seemed to have entered the general discourse of the class.

Baym's framework for analyzing factors that shape on-line community dovetails with the previous discussion on the interaction between persistent conversation and the seminar design (1998). The common purpose/concern with maintaining an academic conversation, unarticulated but shared by seminar participants at the onset of the course, is likely one of the factors that contributed to the development of community. Shared vision is one of the five characteristics of a learning organization in Senge's model (1994), and several theorists in addition to Baym recognize common interest or purpose as one of the defining features of on-line communities (Tolmie & Boyle, 2000; Licklader & Taylor, 1968/1999; Baym, 1998).

Though system infrastructure and external contexts, interpreted here to mean external to the seminar and not just the bulletin board, were not significant influences on the students' bulletin board use, the context created by the interplay between the radicals of persistent conversation and the course design have already been shown to have impacted on the frequency, quality and diversity of the messages posted to the bulletin board. The asynchronous temporal structure of the bulletin board enabled community. Community was constructed with text, and the ties between individuals strengthened by sharing ideas and recognizing contributions.

Most students didn't enroll in the course seeking community. Zara pointed out as much when she indicated that she neither sought nor developed personal relationships with her classmates. This community did not have the permanence of the communities of practice described by Lave and Wenger (1991), or the organizations described by business researchers. The community was bounded by time as well as by enrollment in the graduate seminar. All but one student failed to identify links between the course and any of the potentially larger communities, such as the Department of Language and Literacy Education, the University of British Columbia or the community of language educators. Indicators of community used by some CMC researchers, such as communicative norms related to forms of address and closings, failed to develop. Community, as described by the participants, was largely local, specific and time-limited.

However, the limitations and the strengths of the community have relevance only to the extent that they impacted upon learning. Held to this standard, the community that developed through the use of an on-line bulletin board adjunct was of considerable importance to the learners. One of the measures of its success was its ability both to

accommodate and capitalize on diversity. It would be difficult to define the periphery of the community that developed. Related to the course content, all participants were novices. English language competency created an additional network of relationships between speakers of varying proficiencies in English, with native speakers such as Zara also defining themselves as language learners in relation to academic writing skills. Given that the focus of the program of study was language acquisition, nonnative speakers' personal experiences sometimes positioned them as experts. Expert and novice were fluid positions, occupied by different class members at different moments depending on the specific nature of the conversation underway. A single community encompassed the multiple personal zones of proximal development, and those edges and the manner in which they were extended were possibly more pertinent in characterizing the community than the formal course content.

If individuals enter the space to learn and to engage in an academic discussion, and if individuals perceive their learning and growth as dependent on accessing the diversity represented by potential community members, then it becomes easier to understand how the community developed to accommodate diversity of language, ideas and experience. The environment encouraged interaction and allowed for diversity. Interaction generated textual recognition, encouraging further interaction and demonstration of diversity. Individuals came to see the diversity as contributing to their own learning, making it a valued attribute of the developing community. In the interactive cycle of interaction, support, and recognition, community was constructed.

Interaction created community in a way that course enrollment did not. The ties between individuals were constructed through the sharing of personal histories and ideas. Such sharing was not limited to the on-line space, but the bulletin board increased the

quantity of potential and actual interaction. Interaction was the bond or tie between individuals, the ties further strengthened by how contributions were visibly recognized on-line. The network of ties of interaction, shaped by environmental factors and by the diversity of the specific individuals in the course, in turn shaped the community that evolved. Each element appeared to interact on the other to generate the learning space, the learning resources and the potential for learning offered by participation in the community.

For all that agency, diversity and community became important to students and to student learning, none are inextricably linked to CMC, to the course content, or the students' course objectives. There is no evidence that any of these relate to personal values and beliefs widely-held by the course participants at the course onset, and there is evidence that at least some of the participants placed little to no value on concepts related to community or cooperative learning. These concepts came to be valued because they came to be seen as contributing to individual learning. The bulletin board was not valued because it represented technology, but rather because it facilitated learning. The reality of learning appears to have contributed to the development and reinforcement of values, not the reverse.

The question remains whether the bulletin board advanced learning beyond what could have been achieved without the bulletin board adjunct. The participants believe so, as indicated in the remarks they made about the bulletin board's contributions to their learning and the diversity of resources and opinions it allowed them to access, but this study has no means of substantiating those perceptions. There is a risk that these favourable comments are simply the result of a halo effect, of students recalling the class in a positive light because they found it enjoyable or because they view themselves as successful using this format. The relative importance of personal over established course objectives in a graduate seminar such

as this makes it even more difficult to establish differences in what is achieved through different instructional designs.

However, the evolution of community, and community as a place and source of learning would suggest that on-line bulletin board adjuncts are useful in fostering a receptivity to a way of learning that will deliver future benefits to students. On the most obvious and superficial level, students have successfully used CMC to foster their own learning, which suggests that these individuals will be better-prepared to use CMC in their own classrooms, and in their own future learning.

But to suggest that this is the most important outcome would be to elevate formal learning over informal learning, and if learning is a social practice that is an innate activity of the groups, organizations and communities in which we choose to participate over the course of our lives (Senge, 1994; Lave & Wenger, 1991; Vygotsky, 1978), then the majority of our potential learning will not occur within formal educational settings. Instead, our ability to learn is dependent on our ability to avail ourselves of the diversity of learning opportunities and resources that we encounter in our day-to-day existence. It is not enough for a space to be made for us, either as a place for legitimate peripheral participation, as a space designed to afford agency or as a member of a group designated as a learning organization. If individuals do not perceive value in participation, or do not have the skills necessary to take advantage of the opportunities that are afforded for participation, the individual is less likely to capitalize on available resources or opportunities.

Given the specific interest in environments designed to accommodate individuals whose previous educational experiences encompass a broad range of cultural and linguistic

heritages, perhaps the more meaningful learning was not in regards to "what" but in regards to "how." All students, regardless of their previous experiences, found value in learning from each other. All students, regardless of the various states of their own prior knowledge, found that they could benefit from the knowledge and abilities of others. Participants apprenticed in recognizing, respecting, using and rewarding each other's contributions, in the process facilitating their own learning and development. Just as important, students found that they could contribute to the learning of others.

5.4 Future Considerations

Studies of individual on-line learning environments need to be recognized as exactly that. There may not be any direct application of findings outside the specific environment. However, this does negate their potential to inform continuing discussions on the educational applications of CMC, and to highlight considerations for future course designs and research. This study, geared towards a thick description and emergent themes, explores possibilities for the use of CMC in language education. Cast in that light, the learning environment and interaction described by the students in this study suggest several possibilities for future exploration.

5.4.1   Research Directions

This study has attempted to illustrate that on-line environments, while shaped by the features of persistent communication, are not solely an outcome of technology. Instead, they are influenced by a wide range of factors including the features of the course design and the activities and behaviours exhibited by the individuals within the space. The complexity of on-line spaces, coupled with the continuing rapid evolution of computer-mediated

communication, suggest that the research agenda for CMC's use in language education will continue to expand for some time yet. In some cases, though, clear gaps in our understandings have emerged. For example, there are consistencies in the behaviour of non-native speakers in this class and in other studies commenting on NNSs' interaction patterns, most clearly evident in students' description of their increased participation on-line relative to physical classrooms. If one believes that learning is a social activity, and that interaction is required for learning, this is a positive outcome of CMC use in formal learning environments containing students with multiple languages of origin. However, descriptions of levels of activity do not help us understand differences in the nature and/or quality of activity. Differences in how individuals position and are positioned in the interaction, whether because of differences in English language competence, previous on-line experience, academic reading and/or writing skills or other variables remain unexplored, as do issues related to topic shift and control.

As mentioned at the onset of the study, some researchers have focused on the controls, interventions and facilitation techniques required to generate deep and/or critical explorations of the topic at hand (i.e. Angeli, Bonk & Hara, 1998; Duffy, Dueber & Hawley, 1998). Most point to increased controls and/or structures to generate improved outcomes. While this study did not attempt to measure the degree to which students engaged in critical thought or reflection, the students' description of their expectations of themselves, the resources they valued, and their own learning suggest that the conversations were dominated by deeper levels of thought or engagement. Like the study by Veerman, Andriessen and Kanselaar (2000), this suggests that increased levels of control or structure in the class design may not be the most appropriate option for generating meaningful conversation in all

situations. Flexible designs that afford opportunities for individual agency and which attempt to promote student responsibility for individual learning may result in more conversations characterized by these attributes. Less rather than more controls, or different rather than increased controls, are another set of options that need to be explored when investigating the creation of on-line learning environments that foster this type of engagement, particularly when these environments include individuals of diverse linguistic and cultural backgrounds.

The interaction of the features of persistent conversation and the course design in this graduate seminar, and the manner in which they interacted to afford and encourage agency among students, represent only one example of CMC use. On the assumption that student agency is considered a positive attribute of a learning environment, agency is another possible research focus when examining how course designs interact with the features of persistent communication in settings using existing and developing CMC media.

Tolmie and Boyle (2000) make two points that are of specific relevance to this study. One is that students must have prior experience in the form of discourse in order to avail themselves of the opportunities afforded by CMC. In this specific class, there was a significant cohort of students who had taken previous classes with the same professor and who, along with the professor, modeled a particular set of behaviours that appeared to contribute to the effectiveness of the class. Not all on-line learning environments will contain an experienced cohort. As facilitators of formal and informal learning, the challenge is creating learning designs that move students beyond their expectation of a teacher-centered classroom, that scaffold the development of critical thinking without causing undue attendance to the questions, values, positions and attitudes held by the instructor or

discussion leader, and which facilitate the growth of students' ability to capitalize on the potential benefits afforded by CMC. The second relevant point made by Tolmie and Boyle, that students need to perceive CMC usage as necessary for task-completion, again reinforces the need for course designs that take advantage of the unique features of CMC and for students to understand the advantages they afford. Additional studies of instructors' successful use of CMC, in settings where student modeling is and is not initially available as a resource, will help us to understand how to develop environments that effectively engage students in learning, particularly if these studies are completed in situations involving diverse student populations.

As technology evolves, so too will the genres and communicative norms developed and employed by users seeking to shape interaction for their own objectives and needs. While business has begun to study the evolution of group specific genres on-line (Yates, Orlikowski & Okamura, 1999; Orlikowski, Yates, Okamura & Fujimoto, 1995; Orlikowski & Yates, 1994), education does not seem to have developed a similar research agenda. Given the potential differences in academic versus work environments, including how groups come to be formed, similarities and differences in personal and group learning objectives, perceptions of group member interdependence, and performance assessment, academic environments may be characterized by different patterns of genre formation and use. We do not yet understand to what degree the development of group specific genres is necessary or possible within the time limitations of some educational environments, how students transfer genres across courses/programs, and the degree to which this facilitates and/or impedes potential benefits derived from the use of CMC.

Issues related to genre focus on writing or the output of the communicative process. Although students must write to obtain and retain visibility within an on-line community, reading also plays a critical role. If students do not read earlier messages posted by their classmates, the process cannot be considered truly interactive. Reading is both the means of entry into the dialogue, and a hurdle to those with slower reading speeds. Although reading and writing are required of participants in on-line interaction, it is writing that has been the focus of most of the research to date. The role of reading in gaining entry to on-line worlds has yet to be adequately explored.

The norming of supportive behaviour in CMC-mediated environments is another area largely unaddressed within the field of language education. Even outside of our field, most education research focuses on the use of CMC among individuals who have little or no face-to-face contact. CMC as a classroom adjunct seems to foster a degree of community and inclusiveness that students in this study did not associate with their physical classrooms. How CMC may be used to assist second language students in mainstream classes to become full and contributing members, and how it may serve to enhance other students' perceptions of NNSs' potential contributions to the class' learning are areas of potential future research. Whether specifically examining the impact of the radicals of persistent conversation or tracing the full range of influences that aid or impede the development of supportive behaviours, there are numerous avenues of investigation within and across age groups, learning environments and course designs.

Outside of formal learning environments, issues of identity and choices related to on-line self-representation are a topic of considerable discussion. These are of equal interest to language educators. If on-line environments aid in fostering supportive and inclusive

learning environments, it would seem to follow that this would affect NNSs' opportunities and choices related to self-representation. Differences in NSs' responses to NNSs, such as those noted by the students in this study, in themselves potentially change the dynamic of representation, interpretation, feedback and the resulting re-representation of self that occur in multilingual and multicultural classrooms. Changes in understandings and constructions of identity in on-line learning environments are another avenue towards understanding the effective use of on-line spaces in language education.

Issues of risk-taking and trust underlie discussions of supportive behaviour, identity and community. For novices, entering an on-line discussion is stressful and risky. In the seminar that was examined, a variety of factors appeared to conspire to reward initial risk-taking. Trust and respect for the contributions of others appeared to develop as common community values. How these two factors, risk-taking and trust, shape and are shaped in on-line course adjuncts is another potential focus of investigation.

Research in these areas will be of particular importance as technology continues to evolve and allows for a greater range in forms of communication. Cue reduction, often assumed as a negative factor associated with CMC, appears to play an important role in facilitating non-native speakers' entry into the dialogue. This raises the possibility that what may appear to be enhancements in CMC media, including streaming real-time video, may be detrimental to less-proficient language users in some circumstances. As educators in the field of second language education seek to use CMC effectively in their course designs, they will require better information about potential benefits and impediments related to the unique features of CMC.

Whether CMC is used as an adjunct to face-to-face classrooms, or whether it is used as the main forum for distance courses or seminars, the interaction of the physical and the virtual has not yet become a significant topic of discussion. Perhaps this is because of the extent to which some studies presuppose that technology will be the main factor shaping the interaction that develops. However, even though this study focused solely on the CMC component of a face-to-face seminar, elements of the seminar design were found to play an important role in shaping the learning environment and learning outcomes. It is a logical that interaction between an instructor and a student will have a bearing on the communication that evolves on-line, whether the interaction occurs inside or outside the classroom. Meg's reference to her interaction with the professor a month prior to the course lends credence to this possibility. In settings where CMC is used as a course adjunct, the classroom is another clear influence needing exploration. Tanya's comments on the differences in her behaviour in two concurrent classes with on-line bulletin board adjuncts reinforce the importance of elaborating our understandings in this area.

The other supports or structures that remain largely unexplored are the readings or texts, whether they are paper or electronic. The class being investigated read a combination of articles resulting from individual research studies, and survey articles summarizing the current state of professional knowledge. None of the summary articles generated discussion. This may have been an idiosyncrasy of these learners, but it may also be that some types of readings are more effective in supporting unstructured academic conversations. This leads to potential examinations of how texts are used to facilitate on-line learning, of the multiple objectives for their use, and of designs that capitalize on the interaction between different types of texts and the features of persistent conversation.

Community and agency may be perceived as assets, but their value is limited if students fail to transfer the "how" of learning outside of the on-line environment. Perhaps the real measure of the value of CMC use in second language and international classrooms is whether there is a transfer of attitudes, approaches and understandings from the specific to subsequent learning opportunities. That is the real avenue of investigation for those interested in CMC.

5.4.2 Technological Development

If the field of second language education is able to provide unique insights into on-line communication, it follows that it may also be able to provide unique insights into the software features that may enhance or detract from the learning of multilingual communities. Small changes can create subtle shifts in technological use. For example, changes in how messages can be marked and/or filed for rereading may change whether or not students respond immediately to a message, whether they respond after taking time to reflect on a message and/or whether students reference earlier messages in their on-going discussion. Non-native speakers may be more sensitive to such interface changes, as their ability to review, revise and reenter textual dialogues strongly impacts on the benefits they derive from CMC use. The potentially heightened sensitivity and magnified impact of system changes on NNSs may provide unique insights into the impact of interface changes on user behaviour and learning.

The organization and readability of interfaces, even minor issues related to the selection of a font, potentially impact on the degree to which those using English as a second language are able to fully engage in on-line discussion. Most of the students, and all of the NNSs, commented on the time demands of reading and interacting on the bulletin board.

Anything that increases reading time potentially detracts from interaction. In order to effectively manage these demands, NNSs need issues around readability and efficiency to drive interface designs. Language educators must have access to courseware designers to ensure that designers receive proper feedback and are sensitized to these issues.

If second language educators are to provide quality feedback, they need better information as to how courseware is used by students. Courseware should assist educators in monitoring how students use the features of CMC to manage their on-line interaction, how the organization of user interfaces affects student usage, and whether student use changes with experience or with the development of community norms. The current usage information available from courseware such as WebCT fails to provide the basic information necessary to improve class website design. Simple counters on individual webpages, buttons and links would provide information on what is and isn't being utilized by students. Most commercial websites measure time on page, again useful information for teachers and researchers attempting to understand the interactive process, particularly when investigating the impact of reading and writing proficiency in an individual's ability to fully enter into discussions. Profiles of individual use, currently limited to messages posted and read, would assist teachers in providing targeted individualized assistance. Each of these feedback mechanisms is a common element of many webpage designs, and instructors and researchers need to assist courseware designers in understanding the potential of similar feedback loops to enhance use of their software. Instructors, courseware designers and researchers need to engage in an on-going dialogue on the creation of effective on-line learning spaces for students of multiple first languages.

Finally, at the most obvious level, second language educators need additional resources to be integrated into their websites. Pop-up dictionaries, thesauri, concordancers and style guides intelligently integrated into toolbars or menus would support reading and writing activities. Although of particular value to language learners, all students would benefit from easy access to these resources while interacting on-line.

5.4.3 Pedagogical Implications

In contrast to studies that attempt to establish a cause-effect relationship between computer-mediated communication and a specific outcome, this study has attempted to illustrate that on-line spaces display a complexity that rivals physical classrooms, and that participants will attempt to shape the space and their language use to serve their personal objectives. Technology does not determine the nature and/or form of the communication. Rather, specific course designs and the features of computer-mediated communication interact to create specific and local environments, which in turn shape and are shaped by the participants in the space. The pedagogical implications of this study, then, relate to the possibilities that educators have to create their own unique learning environments that will afford students the opportunity to support their own and others' learning.

Regardless of the instructor's objectives for the class and the on-line space, an understanding of the radicals of persistent communication may assist educators in more effectively using CMC. Whether the space is used for project work, or open or close-ended discussions, such understandings provide insights into how the space may shape the students' interaction. Further, it provides a useful frame of analysis for both planning and adjusting course designs so that they capitalize on the underlying radicals of CMC, and/or do not block the delivery of their potential benefits. Recognizing that persistent conversation shapes

rather than controls the discourse can change instructors' sense of control of what can be achieved through the use of CMC, and opens the door to more creative uses.

The use of computer-mediated communication as a venue for critical thought and reflection is not uncommon, and the results of this as well as other studies may assist instructors in understanding how their interactions can both facilitate and potentially impede the development of such dialogues. This study raises questions as to role that controls and facilitation play in fostering deeper and more critical thought. It suggests that open designs that permit students' expression of the full diversity of their thoughts without subject and/or time limitations, should also be considered when designing courses aimed at fostering critical thought. This may also mean that instructors do not need to depend on specific software packages, with features for labelling and organizing student contributions, and that widely available freeware, or generic courseware packages may be equally effective.

Although not intended as a focus of the study, professor-student interaction in the physical world influenced students' bulletin board use. Instructors need to remain aware that their face-to-face interaction with students will also influence how on-line interaction develops. Explicit as well as implicit cues, including the unspoken but understood roles regarding the role of the students and the instructor in the course, may be used as references by students when constructing relationships and the texts that make manifest these relationships in on-line discourse. The role of supporting materials, including the quantity and type of assigned readings, may also have a direct impact on the developing dialogue in addition to its impact on the discussion content. Thus, the variables that an instructor needs to consider when developing on-line adjuncts to physical classrooms extend well beyond those immediately associated with the on-line space.

The community constructed in the on-line space was both an outcome and an influence on the factors that contributed to students' learning in the course. However, only one student saw a direct connection between the on-line community and the larger academic communities in which the course was situated. For instructors and administrators responsible for students' overall development in a program or an educational institution, there remains the challenge and opportunity for linking communities constructed on-line to larger academic communities, such that both the program and the individuals derive further benefits from the connections that have been developed.

Another aspect of evaluation that may be worth reflecting upon is whether students' satisfaction or "happiness" with the use of CMC provides a meaningful indicator of the effectiveness of its use. Although only a single study, Benbunan-Fich and Hiltz found that students solving a business case using only CMC produced a better report than those interacting face-to-face; however, they were the most dissatisfied with the process (1999). Some of the students in the graduate seminar had periods in which they were frustrated and overwhelmed by the bulletin board. Although the bulletin board is described as motivating by many, it may be that outcomes rather than student satisfaction scores provide a better reflection as to whether CMC is contributing to students' learning experiences.

On a practical level, it was apparent in many of the participants' comments that the bulletin board required a significant investment of time and energy by the students, an investment in large part made willingly, but a significant commitment nonetheless. As more and more instructors seek to incorporate CMC into their course designs, they may face the reality that students cannot support an unlimited number of on-line communities. Educators

need to be aware of the need to balance learners' on-line loads to prevent the potential erosion of the benefits CMC may deliver.

Each of the above deals with operational issues related to the use of CMC as an adjunct to face-to-face interaction, and how its particular features may contribute to attaining specific learning goals established by/negotiated with the instructor. However, there are two broader issues worthy of consideration. One is how issues around agency, community and diversity are discussed in the classroom, and whether these values and attributes become more meaningful to students when they are experienced as contributing to learning, rather than taught as objectives in and of themselves. The second relates to the change in the relationships between native and non-native speakers, and subtle and not so subtle differences in understandings of each other as competent and capable participants in the learning space. Each of these is an issue for further reflection by individual teachers and teams of teachers as they continue to work with multiethnic, multicultural and multilingual student groups. Computer-mediated communication is a door and a window for accessing and connecting students in ways that foster the learning and development of all concerned. Teachers' imaginative and creative constructions of on-line spaces, which incorporate their personal reflections on their specific groups, may yield the most effective designs for on-line spaces.

Chapter 6: Conclusion

In a series of reflective e-mail related to the graduate seminar, I questioned Dominique about the impact of the bulletin board. These questions arose from my personal reflections on the bulletin board's impact on my own perceptions of my classmates, and from my observations of the differences in my relations with my classmates in this and other graduate seminars.

If you weren't worried about political correctness, would you say there is a difference between your perceptions of NNS' contributions to class learning in environments with and without a bulletin board?

Yes, with a bb I was surprised at how well NNS's were able to communicate and express themselves, and how vast their knowledge actually was. without a bb you never really get to know that, because you never hear their thoughts, and you don't read their papers. My higher ed experience has taught me that verbal participation=understanding of material and therefore measure of intelligence, which is wrong, but then why did they give us so many marks for participating in class?

Okay, now more politically incorrect - if you weren't editing your thoughts, would you say that you had different perceptions of NNS' competence/ability to contribute to class learning in bulletin board/non-bulletin board classes?

ok, without the bb, I would never have known that some people were as interesting as they actually were. also, everybody's style of participation is different and that shows on the BB, but I'm not sure that the non BB classes would allow for the variety of styles, because it's not

asynchronous. eg. Julia's style was different than Audrey's, (both were

equally valid) and in the beginning they both struggled at trying to get

their points across in the face to face situation. I gained a lot of respect

for NNS's in our classes by 'hearing' their voices on the BB. (Dominique,

personal communication, May 1, 2001)

There are many ways of looking at the contributions of the on-line bulletin board to the graduate seminar that has been investigated. In reality, the essence of its contributions is simple. According to the students, it had a positive impact on what they learned, how they learned from each other, and how they worked together to further each other's learning. Peers became assets in furthering individual learning.

The bulletin board was a space of possibility, shaped by the interaction of the radicals of persistent conversation, the seminar design, and the participants, including the professor. It is not a template for duplication, for the emergent space was shaped in part by the contributions of the specific individuals participating in the seminar, and individual contributions are by definition unique to the individuals themselves. However, it is a demonstration of possibility, of what we may seek through CMC's use, and of what we might attain that would not otherwise be possible. These are not mechanical, technical possibilities. Rather, by bending time and space, CMC allows for greater and more meaningful interaction, and may afford and facilitate the exhibition of participants' agency in their own learning. It seems appropriate to end with a comment from a student.

"Um, so, we live in a crazy world, you know, when, we always talk about

multiculturalism. And we go outside, we walk in the classroom, but days

pass by, we don't have a chance to know these people, to, you miss lots of

opportunities. I thought of it long ago, when there was guy who lived in same building but on different entrance, porch, porch, so and I just learned that he lived there ten years later, so you and he pass by. Uh, and, overall, you know, on-line chat, these chat rooms, bulletin boards, give us opportunity to not pass by, to not ignore and I, and get to know people who live there. It is also is a sense of space, you know, the, the notion of space, when you live there, this building, this comment of people makes the space, when you go to the chatroom, it is a space. When you go to the bulletin board, it is a space and, here, you can actually stop and, wait a minute, I want to talk to you, I want to ask you this question. You know, it's a tremendous opportunity and, uh, we need that in order to grow, in order to, uh, um, live in peace. This is very important and I think that lots of hatred and racism and, uh, prejudices, and, uh, stereotyping, is the, uh, result of this passing by, passing by and concentrating on yourself, your own interests, on, uh, your work, your home and that's it, no other interests, and you just think, oh, other people, I don't care. So of course you wouldn't care if you didn't have a chance to think, okay, why am I acting in such a way, why am I not noticing anyone around me, you know, because I don't have such opportunity, simply. Create me this opportunity and I will know. So and that thing is, uh, bulletin board is great, is this opportunity, it's bring you and other speakers together. It gives you opportunity to hear, use it to know about one another." (Tanya)

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Appendix I

Course Outline

MODERN LANGUAGES EDUCATION 508

THEORY AND RESEARCH IN TEACHING OF MODERN LANGUAGES

Term 1, 2000
Monday 4:30 - 7:30, PONE 121
Instructor: Dr. Stephen Carey
Office: Ponderosa E 224
Phone: 822-6954
E-mail: stephen.carey@ubc.ca
URL: http://www.mled.lane.ed">c.ubc.ca

Course Overview

This graduate seminar evaluates qualitative and quantitative research methodology approaches to assessing the effectiveness of immersion, bilingual, second and foreign language programs of instruction. Research on testing for academic reading comprehension, oral & cultural fluency and writing will be reviewed. Research on traditional, communicative and autonomous approaches to additional language programs will be reviewed and the effectiveness of online, CD and technological supplements including WebCT seminars will be discussed. Students will be encouraged to develop their technological expertise and will be required to develop an original research proposal.

Course Description

This Graduate Seminar encourages students to pursue theory and research within several areas of the broad domain of Language Education and from international, interdisciplinary and multicultural research perspectives and contexts of the Asia Pacific Century. The seminar draws on the major influences on research in language education including those in Curriculum, Comparative Literature, Anthropology, Psychology and Sociology. The seminar encourages students to develop research questions and research proposals, grant proposals, research literature reviews and theory critiques with the academic vision that interdisciplinarity provides. The extensive readings and references for this seminar provide for a diversity of research approaches while stressing the limitations of each approach. Students will be encouraged to consider the utility of a pluridisciplinary approach in recognition of the multiple perspectives of post-modern statements and restatements of past and refurbished approaches. The stance towards all methodologies is a critical one which searches for the strengths and limitations of each research culture or paradigm and explores the potential for the minimization of these limitations through the multiple perspectives provided by interdisciplinarity.

The seminar examines the view that language is paramount in theory and research and that the signifier influences the perception of the signified in the "interpretive turn." The seminar will also include a critical evaluation of the tenets of post-modernism and post-colonialism.

This Graduate Seminar will enable and encourage the following:

- students formulating and/or reformulating their research goals
- students finding a research problem
- the development and sharpening of critical thinking skills
- students developing thesis proposals
- students presentations of critical analyses of issues and studies
- the socialization of students into the academic environment
- the writing of proposals such as SSHRC and UGF
- the writing of proposals for conferences
- the writing of studies for publications
- the writing of proposals for "groups" students seek out
- familiarity with research issues on bilinguality, literacy and academic achievement in schools and universities in the Asia-Pacific.
- consideration of the impact of global technology on minority languages and literatures.

SELECTED ACTIVITIES

Each seminar participant will be required to choose one or more topics which they will research and write a paper on. This paper will be circulated to all seminar participants at least I week prior to the date on which the student will present the paper to the class for constructive feedback. The paper may be circulated by the Student Presentation tool on the WebCT course. All participants will be expected to have read the paper and made an appropriate critique which can be given to the presenter, other participants and the professor prior to the class presentation. The presenter will be given sufficient time for a 1/2 hour presentation in class of this paper prior to a 1/2 hour question period. This procedure closely resembles the format for conference presentations or for theses defenses. The student will be expected to defend their thesis proposal and to incorporate all constructive criticism into the final copy of the proposal that will be submitted to the professor for grading for the course. Students may give more than one presentation.

ON-LINE ACTIVITIES

Students will receive instruction on the use of the LANE and the LANE/MLED websites and will be encouraged to make use of these resources. The LANE/MLED website currently has an activated instructional course on the use of the Internet and its capacity for accessing research documents using search engines and other related resource management techniques. The LANE/MLED website has over 3000 links to resources and other information relevant to Languages, Literatures and Cultures of the Asia Pacific, including ESL and FSL and these information links will inform students of the rapidity of information development in the core areas of this graduate seminar. Students will be encouraged to use these resources in developing their individual research projects, theses, and conference presentations. In addition, networking among the participants via the WebCt Bulletin Board discussion groups and e-mail will be strongly encouraged. Research proposals, UGF applications, thesis proposals, conference submissions and the writing of papers for conferences can be distributed among participants in the seminar or by e-mail and critiquing can continue outside of class-time to maximize the benefits of consultation, peer review, and collaborative work. Linkages with other scholars around the globe will be encouraged. Students will gain

awareness and appreciation of research on other languages, literatures and cultures through directly accessing resources and personal contacts via the Websites.

The website section for the course will also provide students with information on colloquia and visiting scholar presentations on the UBC campus. In addition, the list-serve will up-date students on their peer reviews and collaborative activities for the seminar. Students will be encouraged to participate in on- campus conferences, seminars and colloquia that are relevant to this graduate seminar.

EVALUATION

Quality of the posting and presenting of first paper	34%
Participation online and in-class: commentaries, critiquing of assigned readings and student presentations	33%
Final written report or term research proposal	33%
Total	100%

SELECTED BIBLIOGRAPHY
A comprehensive bibliography of selected texts and selected readings in the area of languages, literatures and cultures in the Asia-Pacific.

Appendix II

Sample WebCT Interfaces

Figure 11
Seminar Homepage

The WebCT homepage is the first page which students see upon logging into the website. Each of the icons links to a different webpage in the site. The push pin is the link to the bulletin board. The chain or "links" link to indexed Internet resources.

Figure 12
Index of On-line Resources

This is the index of on-line resources linked to the class website. The page is accessed by clicking on the links icon on the homepage. Each of these topic links connects students to a detailed list of hotlinks or direct links to on-line resources on the Internet.

Figure 13
Sample of On-Line Resources/Weblinks

Computer Assisted Language Learning (CALL) Software, resources and CALL sites.

*   CALICO:Computer Assisted Language Instruction Consortium
    http://www.calico.org/
*   Computer Assisted Language Learning by Jim Duber. Take the time to give this site an in-depth look. Cycor is a mirror of Chorus from Oxford University. Don't miss the CALL Links
    http://www-writing.berkeley.edu/chorus/call/index.html
*   Language Teaching Resources...OU CALL
    http://www.oucom.ohiou.edu.
*   Ohio University CALL Lab
    http://www.tcom.ohiou.edu/OU_Language/OU_Language.html
*   Rogers WAVE
    http://www.rogerswave.ca/ Roger's site for schools
*   The Virtual CALL Library
    http://www.sussex.ac.uk/langc/CALL.html#multiling

This is the list of hotlinks or on-line resources that the students would see if they clicked on "Computer-Assisted Language Learning" in the index shown on the previous page. Each of these hotlinks connects directly to on-line resources that are hosted or provided by other organizations.

Appendix III

Participant Written Survey

LLED 520

Participant's Survey

Demographic Information

1. Age: _____
2. Gender: Male _____ Female _____

Education

3. Education

Institution	Degree	Major	Years Attended	
			From	To

4. Language Use

Please indicate the languages that you have used and studied in chronological order, beginning with your first language.

Language	Years Used		Used at Home		Used Socially		Learning Environment*			
	From	To	Yes	No	Yes	No	School - Immersion	School - Core	School - Bilingual	Language of Country of Residence

* Core refers to traditional class-based foreign language instruction. Bilingual refers to content courses delivered in two languages.

5. Are you residing in Canada solely for the purpose of attending UBC?

Yes _____   No _____

6. How many years have you resided in Canada?

Less than 2 years   _____

Between 2 and 5 years   _____

Between 5 and 10 years   _____

More than 10 years   _____

I was born in Canada   _____

7. Is your first language English?   Yes _____   No ____

8. How many languages have you studied/used in addition to your first language?

_____

9. In how many languages can you carry a conversation in addition to your first language?   _____

10. If your first language is not English, how many years have you studied English?

_____

11. Type of previous language instruction (check all that apply):

Classroom instruction – school   _____

Classroom instruction – private institute   _____

One-on-one tutoring   _____

Self-study   _____

Other (please specify) _____   _____

12. At the time of your participation in LLED 520, had you used computers in language instruction as a language student?

Yes _____   No _____

13. At the time of your participation in LLED 520, had you used the Internet as a language student?

Yes _____   No _____

14. At the time of your participation in LLED 520, had you used the Internet as a student in an instructional setting not related to language?

Yes _____ No _____

Teaching Experience

15. Have you taught a foreign or second language?

Yes _____ No _____ (go to Question 16)

If yes, please indicate which of the following describe your teaching experience (check all that apply):

Taught a foreign language in your native* country _____

Taught a second language in your native country _____

Taught a foreign language outside your native country _____

Taught a second language outside native country _____

* Denotes the country for which you carry a valid passport, or your country of origin, whichever you consider to be a more accurate reflection of your current identity.

16. At the time of your participation in LLED 520, had you used computers in language instruction as a language instructor?

Yes _____ No _____

17. At the time of your participation in LLED 520, had you used the Internet as a language instructor?

Yes _____ No _____

18. At the time of your participation in LLED 520, had you used the Internet as a teacher/facilitator in an instructional setting not related to language?

Yes _____ No _____

Experiences with Computer Technology

19. Did you own a computer at the time you participated in LLED 520?

Yes _____ No _____ (Go to Question 20)

If yes, were you connected to the Internet?

Yes _____ No _____ (Go to Question 20)

If yes, how did you access the Internet?

Dial-up modem _____

High speed connection _____

20. Which of the following on-line communication modes had you used prior to participating in LLED 520? (Check all that apply.)

E-mail _____

Internet Relay Chat (IRC) _____

Instant Messaging _____

Listservs _____

Chat _____

Electronic Bulletin Boards _____

Videoconferencing _____

Webcasts (interactive or non-interactive) _____

Other – Please specify _____ _____

21. What is your approximate typing speed in English? _____ wpm

22. How often do you check for e-mail? (Check one.)

More than twice a day _____

Twice a day _____

Once a day _____

More than once a week _____

Once a week _____

Less than once a week _____

I don't use e-mail _____

23. How often do you use the Internet to locate information for personal or professional use?

More than twice a day   _____

Twice a day   _____

Once a day   _____

More than once a week   _____

Once a week   _____

Less than once a week   _____

I don't use the Internet   _____

24. Have you built a webpage/website?

Yes   _____   No   _____

(Seminar)

25. What do you think were the important factors that shaped the on-line discussion in (the seminar)? Consider both the human and non-human influences on the evolution of the group and its discussion. List only those factors that you consider to be important to this class. Your list does not need to be all-inclusive.

_____

_____

_____

_____

_____

_____

_____

_____

_____

26. For each of the following, please indicate the amount of influence each factor had on your use of the bulletin board. Use "7" to indicate "Strong Influence", and "0" to indicate "No Influence."

   a.   General UBC academic environment

        0   1   2   3   4   5   6   7

   b.   Seminar course description

        0   1   2   3   4   5   6   7

   c.   Seminar course readings

        0   1   2   3   4   5   6   7

   d.   Seminar classroom discussion

        0   1   2   3   4   5   6   7

   e.   Readings or discussions from concurrent classes.

        0   1   2   3   4   5   6   7

   f.   Readings or discussions from previous classes.

        0   1   2   3   4   5   6   7

   g.   Directions provided for bulletin board use.

        0   1   2   3   4   5   6   7

   h.   Personal comfort with computer use.

        0   1   2   3   4   5   6   7

   i.   Personal comfort with on-line communication.

        0   1   2   3   4   5   6   7

   j.   Technical training and assistance available for using Web-CT.

        0   1   2   3   4   5   6   7

   k.   Easy access to a computer with a connection to the Internet.

        0   1   2   3   4   5   6   7

   l.   Asynchronous nature of on-line bulletin board.

        0   1   2   3   4   5   6   7

   m.   Organization and layout of Web-CT interface.

        0   1   2   3   4   5   6   7

n. Web-CT's ease of use.

      0   1   2   3   4   5   6   7

o. My typing speed.

      0   1   2   3   4   5   6   7

p. Previous experience with on-line communication as a student

      0   1   2   3   4   5   6   7

q. Previous experience with on-line communication as a teacher/facilitator.

      0   1   2   3   4   5   6   7

r. My personal beliefs in the usefulness of on-line communication for learning.

      0   1   2   3   4   5   6   7

s. My personal objectives for the course.

      0   1   2   3   4   5   6   7

t. My personal research interests

      0   1   2   3   4   5   6   7

u. Relationship between my research interests and the course content.

      0   1   2   3   4   5   6   7

v. Topics introduced by my classmates on-line.

      0   1   2   3   4   5   6   7

w. Topics introduced by my professor on-line.

      0   1   2   3   4   5   6   7

x. Relationship with my classmates in class.

      0   1   2   3   4   5   6   7

y. Relationship with my classmates outside of class.

      0   1   2   3   4   5   6   7

z. Relationship with my professor.

      0   1   2   3   4   5   6   7

aa. Ability to select topics for discussion.

      0   1   2   3   4   5   6   7

bb. Ability to select which threads to respond to.

0	1	2	3	4	5	6	7

cc. Ability to initiate threads.

0	1	2	3	4	5	6	7

dd. Attitude and demeanor of my professor on-line.

0	1	2	3	4	5	6	7

ee. Attitude and demeanor of my classmates on-line.

0	1	2	3	4	5	6	7

ff. Time to reflect on classmates' postings.

0	1	2	3	4	5	6	7

gg. Time to write and reflect on my own postings.

0	1	2	3	4	5	6	7

hh. Ability to edit postings before sending them to the bulletin board.

0	1	2	3	4	5	6	7

ii. Workload of LLED 520.

0	1	2	3	4	5	6	7

jj. Total course/career workload while participating in LLED 520.

0	1	2	3	4	5	6	7

kk. My objectives for improving my English language skills.

0	1	2	3	4	5	6	7

ll. My personal strategies used on-line to improve my English language skills.

0	1	2	3	4	5	6	7

mm. My English abilities.

0	1	2	3	4	5	6	7

nn. Language use of my professor (vocabulary, register, etc.).

0	1	2	3	4	5	6	7

oo. Language used by my classmates (vocabulary, register, etc.)..

0	1	2	3	4	5	6	7

pp. Number of students in the course

0	1	2	3	4	5	6	7

Appendix IV

Written Survey Results

Table 14
Participant Demographic Data

| | | Demographic Data Age, Residency and Language Use | | | | | | | | | | | |
| | Average Age | Gender (#) | | In Canada Solely to Attend UBC | | Years of Residence in Canada | | | | | # of Languages Studied in Addition to First | # of Languages Can Carry a Conversation in Addition to First | # of Years Studied English |
		Female	Male	Yes	No	<2 years	2-5 years	5-10 years	>10 years	Born in Canada			
Native Speakers* (N=4)	29.0	4	0	0	4	0	0	0	3	1	3.75	2.00	N/A
Non-Native Speakers (N=4)	37.8	3	1	1	3	2	0	1	1	0	2.75	1.75	21.0
Total	33.4	7	1	4	4	2	0	1	4	1	3.25	1.88	N/A

* Includes to students who were born outside of Canada and who spoke a first language other than English, but who immigrated to Canada at an early age and were viewed by their peers as native speakers.

Table 15
Participants' Previous Language Instruction

	Type of Previous Language Instruction				Used Computers as a Language Student		Used Internet as a Language Student		Used Internet as Student (Not Language)	
	Classroom Instruction – School	Classroom Instruction – Private Institute	One-on-One Tutoring	Self-Study	Yes	No	Yes	No	Yes	No 1.1.
Native Speakers* (N=4)	4	1	2	4	1	3	2	2	4	0
Non-Native Speakers (N=4)	4	1	1	2	2	2	4	0	2	2
Total	8	2	3	6	3	5	6	2	6	2

Table 16
Participants' Previous Teaching Experience

	Teaching Experience Total # of Responses									
	Type of Previous Language Teaching				Used Computers as a Language Instructor		Used Internet as a Language Instructor		Used Internet as an Instructor (Not Language)	
	FL in Native Country	SL in Native Country	FL Outside Native Country	SL Outside Native Country	Yes	No	Yes	No	Yes 1.2.	No
Native Speakers* (N=4)	0	4	1	1	1	3	2	2	1	3
Non-Native Speakers (N=4)	1	1	3	0	2	2	1	3	2	2
Total	1	5	4	1	3	5	3	5	3	5

Figure 14
Participants' Internet Connections

No computer
n=1

Computer - No Intern
n=1

Computer - High Speed
n=4

Computer - Dial-up
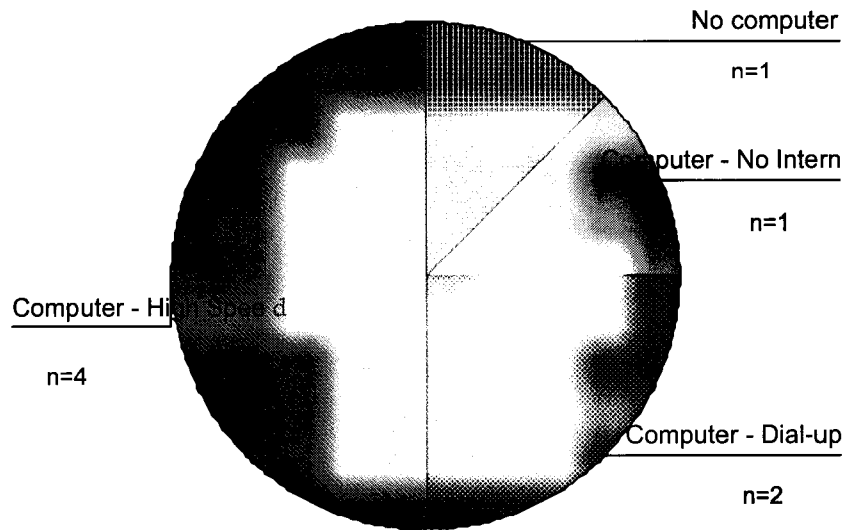n=2

Table 17

Factors Shaping On-Line Discussion (No Prompts)	
Student 1	- motivation to benefit from the course (to learn the course content) - personal interest in communication - high level of trust and friendliness
Student 2	- small size of group (10) - mix of personalities - enthusiasm of participants
Student 3	- less nervous about communication - chance to show my knowledge with the help of any reference (i.e. book...) - enough time to evolve my idea
Student 4	I think time available for online discussion and access to a computer were probably major influences. The more time available and the easier access people had to a computer allowed people to participate more frequently and as a result, feel more "connected" to the discussions. The felt personal relationships established both in -class, out-of-class and on-line had the greatest influence in determining how interested people were in going on-line and responding to or even reading specific people's postings. Having said that, I think the "relationships" developed out of similar research/language interests. I was not physically in the class, but I definitely felt that there were dynamics developing outside of the on-line interactions which influenced what discussions they initiated, what they responded to, and how they responded (register, inclusion of humour, personal detail, controversial content, willingness to challenge or disagree).
Student 5	- questions posted by other students regarding course content (but also personal questions) - anecdotes about language learning and teaching experiences, travel experiences, etc. - teacher's involvement - classroom discussion - availability of references and links - requirement for evaluation (on -line participation was part of our mark) - comfort/ease of access in my own home - flexibility of hours
Student 6	- flexible in time and location - students will have time to think before answering a question. - students can see their progress in the course study and also language improvement - on-line discussion is good for student with high motivation and discipline but the non - human factor always make me feel lonely and isolated no matter how often I'm on - line. If I can choose, I prefer face -to-face discussion.
Student 7	- to improve my English. - to keep contact with the community.
Student 8	- in-class interaction helped shape the on -line discussion by giving students (and professor) a sense of who's who - introductions on -line - prof's encouragement (and his <u>refraining</u> from "leading") - in-class discussion

Table 18

Factors Influencing Individual Use of the Bulletin Board				
	NS Mean	NNS Mean	Total Mean	Total SD
General UBC Academic Environment	2.50	3.00	2.75	1.75
Course Description	3.50	5.75	4.63	2.13
Course Readings	3.25	6.25	4.75	2.31
Classroom Discussion	4.25	6.50	5.38	2.33
Readings or Discussions from Concurrent Classes	2.75	6.00	4.38	1.85
Readings or Discussions from Previous Classes	3.75	6.00	4.88	1.55
Directions Provided for Bulletin Board Use	1.25	4.25	2.75	2.31
Personal Comfort with Computer Use	5.00	5.50	5.25	1.67
Personal Comfort with On-Line Communication	4.50	5.25	4.88	2.03
Technical Training and Assistance Available for Using WebCT	1.25	3.50	2.38	2.39
Easy Access to Computer with Internet Connection	6.50	5.00	5.75	1.98
Asynchronous	5.75	6.25	6.00	1.20
Organization and Layout of WebCT Interface	4.75	4.75	4.75	1.28
WebCT's Ease of Use	5.50	4.50	5.00	1.51
Typing Speed	5.25	3.75	4.50	1.77
Previous Experience with On-Line Communication as a Student	3.25	3.25	3.25	2.92
Previous Experience with On-Line Communication as Teacher/Facilitator	0.00	3.00	1.50	2.83
Personal Beliefs Regarding On-Line Communication and . Learning	4.25	5.75	5.00	1.77
Personal Objectives for Course	6.00	6.25	6.13	.64
Personal Research Interests	4.75	6.00	5.38	1.06
Relationship Between Research Interests and Course Content	4.00	6.00	5.00	1.85
Topics Introduced by Classmates	6.00	6.75	6.38	1.06
Topics Introduced by Professor	4.75	6.75	5.75	2.05
Relationship with My Classmates in Class	2.75	6.50	4.63	3.02
Relationship with My Classmates Outside Class	3.25	5.25	4.25	2.76
Relationship with Professor	3.75	5.75	4.75	2.19
Ability to Select Topics for Discussion	4.50	6.00	5.25	2.25
Ability to Select Threads to Which to Respond	6.50	5.75	6.13	1.48
Ability to Initiate Threads	4.25	5.00	4.63	2.26
Attitude and Demeanor of Professor On-Line	4.00	6.50	5.25	2.31
Attitude and Demeanor of Classmates On-Line	4.50	6.50	5.50	2.27
Time to Reflect on Classmates' Postings	5.50	5.75	5.63	1.19
Time to Write and Reflect on My Own Postings	6.00	6.25	6.13	1.46
Ability to Edit Postings	3.50	5.75	4.63	2.88
Workload of Class	4.75	5.25	5.00	1.41
Total Course/Career Workload While Taking Class	5.75	5.75	5.75	1.04
Language Improvement Objectives	1.00	6.75	3.88	3.36
Personal Language Improvement Strategies	1.00	5.75	3.38	3.11
English Abilities	4.50	6.50	5.50	2.26
Language Use by Professor	3.75	6.25	5.00	2.20
Language Use by Classmates	3.50	6.25	4.88	2.30
Number of Students in Course	4.00	3.50	3.75	2.81
Average of Factor Means			4.77	1.07

Appendix V

Coding Protocol

Code	Category	Description/Definition
A	Name	
B	Native Speaker	"0" = Non-native speaker; "1" = Native Speaker
C	Date	Dd/Mm/Yr
D	Question	
E	Question – Open topic	Thread initiations only.
F	Question – Request Fact	
G	Question – Ask opinion	
H	Question – Ask Feedback	Includes confirmation of spelling/word choice.
I	Question – Confirm fact (echo)	
J	Question – Acknowledge Speaker	
K	Statement	
L	Statement – Respond to question for fact	Must respond to posted question, not merely join discussion initiated with a question.
M	Statement – Respond to question for opinion	Must respond to posted question, not merely join discussion initiated with a question.
N	Statement – Unsolicited opinion	
O	Statement – Unsolicited fact	Does not include unsolicited references.
P	Statement – Present/Summarize Reference	Includes unsolicited references/citations.
Q	Statement – Acknowledge Speaker/Emotional Needs	Not a continuation of content discussion. Must include a specific remark of praise or be a posting solely for the purpose of acknowledging or include the name of the previous poster in the body of the text.
R	Statement – Social	Includes all thank-you's.
S	Statement – Offer Feedback	Must include evaluative comments, not merely signal agreement or disagreement.
T	Statement – Open Topic	Thread initiations only.

Code	Category	Description/Definition
U	Addressed to	Must have an address line.
		"0" = None; "1" = To everyone; "2" = To one or more specific individuals.
V	Existing Thread	No discrete topic change.
W	Content – Personal	Personal life.
X	Content – Professional	Professional life.
Y	Content – 3rd party source	Experiences of a person who is not a class participant.
Z	Content – Course material	Must include a specific reference to course materials, not simply acknowledge their provision.
AA	Content – Another course	
BB	Content – Other	Includes technical questions, logistical and operational issues.
CC	Agreement	Must explicitly acknowledge previous message.
DD	Disagreement	Must explicitly acknowledge previous message. Includes "but", "however" and other means of qualifying or limiting support or agreement.
EE	Reflection – Self	Must include some form of evaluation/assessment/ analysis of self, not only a description of action or belief.
FF	Reflection – Group	As above, but related to the class participants.
GG	Closing	
HH	Signature	
II	Interactivity	At least two removed from the initial post.

- All postings must include one of: E, T or V; V and II always co-exist.

- Unless otherwise indicated, variables are coded "1" for "Yes" and "0" for "No."

- Content categories must include a reference to the source. Thus, a personal opinion is not coded "W" unless the person makes reference to a personal experience. Therefore, not all statements will be coded for content.

- No attempt is made to capture the number of main points/supporting points or topics per message.

- Coding does not capture some of the dynamics of "Addressed to." i.e. Is the question answered by the person it was directed to or by someone else? Does a poster direct their message to the previous poster or to the person who made the question? Is a question directed to an individual or the class?

- Coding for self-reflection (EE) must always co-exist with coding for personal content (W) but not vice versa.

- Questions interpreted to be rhetorical questions are not coded as questions.

- The presentation of a fact cannot be simultaneously be coded as an unsolicited fact (O) and a reference (P).

Appendix VI

Interview Guide

1. Tell me about your experience using Web-CT in LLED 520. (prompts)

   - content learning

   - language learning

   - relationships with classmates

   - relationship with professor

   - development of critical thinking

2. What did you learn as a result of using Web-CT in LLED 520? How was the bulletin board helpful?

3. What aspects of the bulletin board negatively affected your learning?

4. Compare LLED 520 to your other educational experiences at UBC. How is it the same? Different?

5. How would you describe the interactions on the bulletin board in relation to the classroom interaction in LLED 520?

6. How would you compare your interactions on the bulletin board to your typical participation in a class discussion? How were they the same? Different?

7. How did you use the bulletin board? Did you have formal or informal learning objectives for what you wanted to achieve through your on-line interaction? Did you accomplish your objectives?

8. Describe the impact of the bulletin board on your perceptions of yourself as a member of an academic community, and particularly the academic community of the Department of Language and Literacy Education.

9. How did the professor's classroom communication influence your use of the bulletin board? His on-line communication?

10. How did your classmates' classroom communication influence your use of the bulletin board? Their on-line communication?

11. How would you describe your relationship with your classmates in LLED 520? Is it different than from classes that did not use a bulletin board? How?

12. What did you achieve through use of the bulletin board that you do not think you would have achieved without its use?

13. Have you previously taken a class with a bulletin board adjunct? If yes, what aspects of LLED 520 made the bulletin board more or less effective than your previous experiences using an on-line bulletin board?

For Native Speakers

14. How would you characterize your relationship with the non-native speakers in the class? Were there differences in the nature of your interaction with them compared to classes that do not have a bulletin board adjunct? If yes, please describe these differences?

15. How did the bulletin board affect your perceptions of non-native speakers' ability to communicate their areas of knowledge and competence?

16. How did the bulletin board affect your perceptions of non-native speakers' academic competence?

17. How did the bulletin board affect your perceptions of non-native speakers' as members of the student community?

For Non-Native Speakers

18. Did the bulletin board help you to improve your English skills? If yes:

    - How would you describe your improvement?

    - What aspects of the bulletin board enabled you to make this improvement?

    - How did you use the bulletin board to improve your use of the English language?

    - What standards or methods do you use to measure the improvement of your English resulting from using the bulletin board?

19. Compare and contrast your ability to improve your English language skills using the bulletin board with other situations in which you have learned or attempted to learn a language? What are the strengths and weaknesses of the bulletin board versus the other situations that you have experienced?

20. Compare and contrast your ability to improve your English language skills in a class that uses a bulletin board adjunct with one that does not. What are the similarities and differences?

21. Compare and contrast your ability to interact with your professor and classmates in a class that uses a bulletin board adjunct with a class that does not. What are the similarities and differences?

Appendix VII

Sample Interview Excerpt

Interviewer:	Tell me about your experiences learning in the seminar on Web-CT.
Student:	Well, um, in the beginning I was rather hesitant when it came to using the computer technology because I, first of all I had a negative attitude to computers in the teaching and learning environment because I thought that they represented the, um, non-human or, not inhumane but, you know, sort of the non-human, um, uh, aspect of such a humane activity such as teaching and learning and, uh, so I just didn't see how that technology could fit in and really help us, um, so and also I, I did have some previous experience using computers but those experiences were fraught with frustration and, um, a, a feeling of being overwhelmed and always being behind and, uh, so, you know, I was expecting more of the same but I wasn't aware that this kind of technology, the Web-CT and the bulletin board would be used and the extent of my experience with computers was, you know, using word documents and e-mail, which I thought was fun, actually, because I like the communicative aspect of it. Um, but I was, even though I was afraid of the technology, I was very interested in the course content, and, uh, so....What was the question again?
Inteviewer:	Your experiences using.Web-CT in the seminar.
Student:	In languages, yeah, Web-CT and (the seminar), yeah, and, um, so, yeah, even I think it was the course content and then also the kinds of students that I met in the classroom that encouraged me to, to try and change my attitude towards computers and then also to find out what this Web-CT is all about and, uh, I found out that, you know, yeah, there were some times of frustration but soon enough it became really, really easy, you know. And, um, what I really enjoyed was, uh, my, the opportunity I had to hone my English language writing skills, even at, you know, being at a graduate level and having done a degree in English literature and having to have written lots of essays in English, you know I always feel that there's room for improvement and I found that knowing that I had the time, uh, to edit my postings, knowing that my professor would read them and most of all that my, you know, the other students, my peers would be reading them, you know, really made me think twice before posting it and, and clarified my ideas and my thoughts and, um, made me realize where my gaps in knowledge were so that would encourage me to go and do more research and reading and, uh, not only linguistically, in that subject area, and, so, this course turned it around for me. I had this, uh, fear and negative attitude about technology in the language learning classroom and I discovered that I could really improve my writing and reading ability through the use of Web-CT.
Interviewer:	Any specific comments related to content learning?
Student:	Um, I really appreciated the wealth of resources and links that the course provided with the, with the content. Um, I, I learned a lot because it was all there, and I could read it and I could comment on it and provide my opinion on it right away, through the bulletin board, and if I had a question about it, I could contact, you know, one of my peers or, or (the professor) and discuss it right there and then, or, you know, I knew it was out there, you know, or I could at least get the ball rolling with a question regarding the content.
Interviewer:	What about language learning? Speci, specific reflections on language learning.
Student:	Vocabulary devel, development, uh, improved my vocabulary and my sentence, uh, skills, er, you know, um, I also, because I sort of knew that my language ability was better than some of the other students, uh, I realized that, um, I had to be a good role model or model for those other students if they were to, 'cause that was one of their goals, you know, they wanted to learn and to, so I didn't feel comfortable correcting them but I thought maybe the best I could do was at least be a good model if they're trying to emulate and learn English from me or from their peers, or from, you know, from other anglophones so I don't know if I answered your question but in being a good model then I was really more aware of my grammar, my word choice, you know, the way in which I wrote my sentence, you know, the sentence structure in my postings so...
Interviewer:	How about bulletin board in relation to relationships with peers?
Student:	(Pause) Hmmm.

Interviewer: Just any thoughts.

Student: Yeah, well, to be honest, I didn't really feel that I got to be that close to the other students in the class through the bulletin board. Certainly, I became close to students, um, closer to students, got to know more about the students, to, to, the students in the class than other classes I'd taken all through university without a bulletin board. Um, but at least in this case I knew their names. You know, in the big lecture halls or in a lot of the classes, I didn't even know 80%, maybe 95% of the students names and the name can tell, you know, says a lot about a person too. Um, but I don't know whether that was because of the bulletin board or maybe it was because of me because I have to admit that I took the course for a purpose and that was to learn the content and to improve my skills. I wasn't necessarily there to make friends and create a social life because I was busy. I had other courses, there was teaching, you know, and, and to be honest, to, to create a friendship for me requires more than interacting on the bulletin board, you know. I have friends long distance and I love talking on the phone with them. It's, it's not the same for me to have that level of intimacy with, with a friend, you know. So, um, yeah, but, you know, I think it was still interesting to know their per, to know personal histories and that attitude of openness and sharing. I thought that was, um, an advantage and something very different from what I had been exposed to in the past in the university environment.

Interviewer: What about reflecting on the relationship with the professor? Any difference, any comments in relation to Web-CT?

Student: Uh, even though I think that the professor's presence on the bulletin board, uh, was much appreciated and it's as if he, uh, by the professor putting, being part of this discussion, he's kind of in the traditional sense putting himself at our level or, you know, making it an equal level, there's still an understanding that he's still the professor. He, he was there as a guide and, um, a friend, but ultimately he was there as a judge as well so that, knowing that, you know, didn't completely make me feel like he was just another peer, you know, that would have been, uh, inaccurate for me to have thought that. I knew that at the end that he was going to be the one that was going to give us THE MARK, you know. You know, that is, he, 'cause that is part of, it's, it's kind of a paradox in being a teacher. You have to, there's one part of you that has to be there as an equal and, you know, a guide and a friend and being supportive and, but, being a teacher, part of the role of being a teacher is also being a judge and within that there is a hierarchy assumed and particularly in the context of a university environment competition for grades and, I mean it's a reality, you know, and even if the professor doesn't buy into it, it's the system that forces him or her to, so I, I still felt intimidated knowing that my professor would be reading it and, and, intimidated by, with the professor responded to me, or, you know, um, so I think it was good that he was involved but it didn't necessarily make it appear that he was equal. There was still that underlying knowledge that, no, he's the prof and he's gonna be judging us after.

Interviewer: Any reflections on using Web-CT and critical thinking?

Student: I think that Web-CT, um, improved my critical thinking skills because having such an open forum allows one, a student to see different points of view. In a traditional classroom, you get the one point-of-view, for the most part, the teacher's or the author of the textbook, you, know, maybe two, but usually the teacher follows what the author in the textbook, and maybe he doesn't sometimes but, hey, that's two points, different points-of-view that you get to hear or listen to or read but in, in the bulletin board, in such an open forum, you had open to fifteen, twenty different points-of-view from students coming from all kinds of cultural backgrounds and academic and professional experiences and, because of their own unique way of viewing, you know, ideas and exper, experiences and experiments and research, it really kind of helped you to see things from a different point-of-view and therefore hone your own critical thinking skills.

Interviewer: If someone said to you, what did you learn as a result of using Web-CT, what would reply to them?

Student:	I learned a lot of things. I can't just say I learned one thing. Uh, I learned how to use the Web-CT bulletin board, firstly. I learned about, uh, the course content, narrative and, um, I learned about deconstruction, I learned about, I, you know, a lot of the theory in language learning and teaching so the content, you know. Um, (pause) I learned how to, uh, do self-editing, um, I learned how to manage my time, so, yeah, I guess those four things, yeah, the computer literacy skills, um, the content, the actual content and the self-evaluation, self-editing with regards to language. Yeah, primarily.
Interviewer:	How did the bulletin board help with that last one, with self-editing?
Student:	Um, the bulletin board helped me to really see my own writing from another, I would judge it, you know, according to another person's point-of-view and not only from the prof. I knew that all the other students would be reading it, so it would force me to look objectively at my own writing, and, um, (pause) it just gave me the time that I needed and the space that I needed to review what I had written and check in reference books, dictionaries, you know, I had that time, I had that luxury at home to, to come up with good writing and I didn't feel rushed and I, and it really made, uh, having that accuracy and that clarity really helped to refine my thoughts on a particular topic.
Interviewer:	Were there any aspects of the bulletin board that negatively affected your learning?
Student:	Initially, yes. A little bit of the frustration with the technological glitches and one time I wrote this huge long posting and it somehow disappeared and I was so ticked 'cause I had these brilliant ideas that everyone would have benefitted from – I'm being ironic – no, but, you know, I just so much time, energy and effort and then it was gone and I, I wasn't gonna write the entire thing, you know, again so I created a shortened version, shorter version which wasn't what I'd wanted 'n I also wanted to show the professor that I really had been contributing and, you know, and the length of my postings were significant and, you know, and here I'd done all this work and I knew it was at least 25% of my mark, you know, and this gli, it just disappeared and I, all the work and time and effort that I put in wasn't going to be recognized. So, and then I also realized that the professor was sometimes evaluating or, or looking at how many times the students logged on or, or, you know, participated but, you know, it really isn't the quantity of, you know, contributions but the quality of contributions. Sometimes I felt that, you know, the, the postings were way off-topic and, yes, he encouraged us to write whatever we want but, you know, not everyone has the time for that, not all the others, usually, were, you know, were older students. We may be mothers or teachers or we have a life outside and we don't necessarily want to hear about, you know, everything else, as SUV's or, you know, I really thought, I was frustrated with the fact that often enough it was way off-topic, like it didn't even have to do with language learning and I understand the rational for, you know, having the, you know, knowing that on this bulletin board you have the freedom to do that, but, hey, within certain limitations. It still has to be about education and language learning, I feel, because as much as it is an effective and an efficient use of time, it can also be a waste of time if you don't know how to control and where to focus on, you know, so, you know, yeah and I'll be honest, some postings I read thoroughly and read two or three times because they were really interesting and I felt that the person had a lot to contribute, even though they may not have contributed a lot of times, but when they did, it was quality material, you know, whereas others I would just skip over, because I knew I wasn't going to respond and I knew that it was way off-topic, so I, you know, so that kind of, you know, the, the technologic, the technological aspect of it frustrated me and the fact that it was off-topic, um, at times frustrated me and that, we were kind of being observed for the quantity of our postings rather than the quality so that's what I really think counts. But how, it's so much easier to sit there and count the quan, quantity. How do you really evaluate the quality and is it fair to evaluate the language when there's obviously some students there who don't have Eng, didn't have English as their first language, you know, so anyway, yeah.

Appendix VIII

Student Consent Form

Confidentiality:

Any information resulting from this research study will be kept strictly confidential. All documents and recordings will be identified only be code number and kept in a locked filing cabinet. Participants will not be identified by name in any reports of the completed study. All archiving of the bulletin board interactions will be in accordance with the generally accepted procedures of the University of British Columbia.

Contact:

If I have any questions or desire further information with respect to this study, I may contact Dr. Stephen Carey or one of his associates at 822 -6954.

If I have any concerns about my treatment or rights as a research subject I may contact the Director of Research Services at the University of British Columbia, Dr. Richard Spratley at 822 - 8598.

Consent:

I understand that I am being to participate in a study of my use of an on -line bulletin board and that I may be asked to reflect on my use of the bulletin board, and its impact on my English language acquisition and use. I understand that if I choose to participate in the interviews, I will be contributing approximately two hours of my time.

I understand that my participation in this study is entirely voluntary and that I may refuse to participate or withdraw from the study at any time without jeopardy to my class standing.

I have received a copy of this consent form for my own records.

I consent to participate in this study.

_____   _____

Subject Signature   *Date*

_____   _____

Signature of Witness   *Date*