Building community in a virtual classroom: Construction of classroom culture in a postsecondary distance education class

Virginia Anne Bielman
University of Nevada, Las Vegas

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BUILDING COMMUNITY IN A VIRTUAL CLASSROOM:
CONSTRUCTION OF CLASSROOM CULTURE
IN A POSTSECONDARY DISTANCE
EDUCATION CLASS

by

Virginia Anne Bielman

Bachelor of Business Administration
University of Nevada, Las Vegas
1984

Master of Business Administration
University of Nevada, Las Vegas
1987

Master of Education
University of Nevada, Las Vegas
1992

A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Education Degree
Department of Curriculum and Instruction
College of Education

Graduate College
University of Las Vegas, Nevada

August 2000

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The Dissertation prepared by

Virginia A. Bielman

Entitled

Building Community in a Virtual Classroom:
Construction of Classroom Culture in a
Postsecondary Distance Education Class

is approved in partial fulfillment of the requirements for the degree of

Doctor of Education

Examination Committee Chair

Dean of the Graduate College

Examination Committee Member

Examination Committee Member

Graduate College Faculty Representative
ABSTRACT

BUILDING COMMUNITY IN A VIRTUAL CLASSROOM:
CONSTRUCTION OF CLASSROOM CULTURE
IN A POSTSECONDARY DISTANCE
EDUCATION CLASS

by

Virginia A. Bielman

Dr. Neal Strudler, Examination Committee Chair
Professor of Educational Technology
University of Nevada, Las Vegas

The purpose of this dissertation was to investigate how a community was constructed in a postsecondary distance education class that relied only on computer-mediated communications. The use of a social constructionist perspective with Interactional Ethnography provided a theoretical and methodological means to make visible how the actions and interactions of the class members constructed their community. This study was built on and expanded qualitative research in K-12 traditional classrooms, which provided a lens with which to view the processes that shaped on-line community development. Past research has used ethnography and discourse analysis to investigate how traditional classroom participants’ interactions over time constructed a unique social culture and how this culture influenced student learning.

Interactional Ethnography made visible in-the-moment and over-time development of the community characteristics by the members’ actions and interactions by employing
ethnographic analysis to identify what characteristics developed over the semester, and sociolinguistic analysis to reveal how these characteristics were developed.

Data sources from this sixteen-week on-line Survey of Literature course included class web pages, student survey responses, debriefing questionnaire responses, and electronic transcripts of instructor-student e-mail, class listserv communications, and class Multi-user Domain, Object Oriented (MOO) discussions.

Findings revealed that actions and interactions of class members constructed common understandings of norms and expectations, roles and relationships, and the meaning of words, actions, and objects of the classroom. They compensated for the lack of face-to-face conversational cues by using techniques such as emotes, exaggerated spelling, and acronyms.

Both on-task and off-task sharing of thoughts, feelings, knowledge, and experiences were important in constructing the on-line community and providing students with opportunities for learning both social and academic content. This intertextual and intercontextual use of resources demonstrated the historical dimension of community construction and potentially helped to decrease feelings of isolation and build rapport among the community members.

This study provides practical examples of on-line instructional design and student-centered pedagogical techniques. It also supports the premise that class members construct community characteristics and opportunities for learning through their actions and interactions.
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DEDICATION

In loving memory of my parents,

Maxene and Fred McClintic

They instilled in me an appreciation of the intrinsic rewards of education and a desire for life-long learning. My mother, at 70, was enrolled in a computer class when she passed away. My father, at 82, was still an avid reader and learner. I wish they could have been here for the completion of my dissertation. I know they are here with me in spirit.
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CHAPTER ONE

BUILDING COMMUNITY IN A VIRTUAL CLASSROOM

We have all experienced those feelings of expectation when the first day of a new class begins. We don't know quite what to expect, but we realize it is the beginning of life in a new community with new friends, new rules, and new experiences. What happens when this classroom community is being constructed in a virtual environment? The impact of technological advances have created what Hiltz (1994) terms a virtual classroom - one in which the students do not interact in a face-to-face environment. How is the classroom culture developed when students and teacher use only on-line communications instead of traditional interactions? What kind of norms and expectations do the students develop when they do not even see each other face-to-face? As technology continues to provide new educational opportunities into the 21st century, answers to these questions are becoming increasingly important.

If you recall classroom settings you have been in, you will probably agree that every classroom creates its own unique community. Each classroom is a unique setting which provides its own opportunities for interacting and learning (Collins & Green, 1990, 1992; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996, 1997). Over time, the participants in the classroom shape and are shaped by the norms for participation within this culture.
(Floriani, 1993, 1997). They develop an understanding of the words, actions, and objects of the classroom and the roles and relationships among members of the group. Through the interactions within the classroom, the students develop both a cultural and linguistic understanding of what it means to be a member of this particular community (Collins & Green, 1990; 1992; Green & Meyer, 1991; Gutierrez, 1993; Lin, 1993). It is important to develop a community that offers varied opportunities for learning. “Knowledge is not an abstract or transmitted body of information. Rather, it is constructed by members of a social group or discipline through their actions and interactions, individually and collectively” (Yeager, Floriani, & Green, 1996, p. 6). The ways in which students and teachers work together within the community influence opportunities to learn, expectations for displaying learning, and what is actually learned (Collins & Green, 1990, 1992; Green & Dixon, 1994; Green & Meyer, 1991; Heras, 1993; Lin, 1993; Putney, 1996, 1997; Tuyay, Jennings, & Dixon, 1995, Yeager, Floriani, & Green, 1996).

Collins and Green (1992) see learning as both a social and an individual process. By viewing learning as an outcome of participation within and across the patterned events of classroom life, we define learning as both a group (social) and individual process. Viewed in this way, learning is a product of the social demands in which students are expected to perform in particular ways and may not be due to individual competence alone (p. 95).

Students who must struggle with fitting into the pattern of the classroom’s culture, are not as free to involve themselves in the learning process as those who are already part of the community (Collins & Green, 1992).
Theorists such as Vygotsky and Piaget stress the importance of learning as a social activity. Vygotsky theorized that “learning is a process of social construction through interaction and in activity with others” (Putney, 1997, pg. 5).

Ethnography and discourse analysis of traditional classrooms have investigated how the teachers and students, with their actions and conversations within the classroom, jointly construct the culture of the classroom (Collins & Green, 1992; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996, 1997). Strangers and members alike can identify and develop the knowledge needed to participate in the classroom’s culture by looking at the interactions of the participants and events, the use of time and space, and the social rules for interacting (Collins & Green, 1990). As the culture develops, members build a common understanding of what they need to know, produce, and understand in order to participate as a member in the social group (Heras, 1993). Members who have participated in building the classroom culture approach new events knowing how similar events were handled in the past. Events, therefore, have histories, and members of a group use this knowledge of past events when encountering new events (Collins & Green, 1990).

This study investigated the construction of a classroom culture in a distance education environment. Distance education has changed immensely since the postal system delivered the first correspondence course in the early 1800s. Today’s courses involve both one-way and two-way delivery systems. They include text-based (i.e., mail correspondence), audio-based, video-based, and computer technology-based methods of delivery. Some involve two-way fully interactive video systems. Generally, distance education courses incorporate a combination of the technologies available rather than only one medium.
The distance education class under study was conducted in a computer technology-based environment. All communications were conducted on-line.

Research on how the classroom culture is developed in an on-line classroom is sparse and is becoming increasingly important. With computer technology becoming easier to use, less expensive, and more accessible, computers and computer networks are becoming a major component of distance education courses (Bates, 1993; Willis, 1994). It has been predicted that by the year 2010 distance education world-wide will be primarily delivered by telecommunications-based technologies (Bates, 1993).

In distance education, the participants are separated by location and/or time, whereas in traditional education they are in a face-to-face environment at the same location and time. Despite these differences, classroom participants still need to interact in order to construct the classroom’s culture. When distance education replaces face-to-face education, student and teacher communication needs still must be met (Willis, 1994). The proximity of the participants in traditional education seems to facilitate more frequent interactions and provide more opportunities for interactions to occur. However, on-line communication can be conducted from various locations and at various times and can occur in both delayed time and real-time interactions. Therefore, traditional classrooms may not offer better communications than distance education, only different ones.

Research indicates that communication is one of the problems often associated with distance education (Berge, 1995; Carl, 1991; Wolcott, 1995). Students often report a feeling of isolation and a lack of feelings of belonging to a community of learners when they are involved in a remote-site distance education class where a minimum of face-to-face interaction with the instructor and other students is the norm (Wolcott, 1995, 1996).
They do not perceive themselves as full-fledged members of the distance education class. The question this study investigated was how does the virtual classroom’s culture develop in a distance education environment.

Studies focusing on on-line communications in education began to surface approximately twenty years ago with *The Network Nation* (Hiltz & Turoff, 1978). Research on the impact of the use of computer technology for communication in education has been examined from various concerns. Studies can be found on computer-mediated communication (CMC) from many perspectives, such as gender (Korenman & Wyatt, 1996; Truong, 1993; Delaimo, 1995; Turkle, 1996), linguistics (Topper, 1997), cross-cultural (Ma, 1996), and on-line communities (Delaimo, 1995; Deuel, 1996; Turkle, 1996). Studies have looked at whole classes of students communicating with other remote classes via CMC. Students in these classes are still part of their own classroom’s community of learners (Riel, 1993; Riel & Levin, 1990; Sugar & Bonk, 1995).

Construction of a community of learners in an environment that relies only on CMC for participant interactions does not have the use of the visual and non-verbal communication that are present in traditional classroom situations. Will this difference between traditional and distance education classrooms affect how the classroom culture is built? The current study investigated this. It examined the development of the social culture of a postsecondary distance education class relying only on CMC for communications. Appendix A contains a definition of key terms in the study.
Setting

The setting of this study was a postsecondary distance education class that used CMC to facilitate nearly all class communication. Like many colleges throughout the United States, the college that was the focus of this research, was new to providing distance education. The distance education program began in the spring of 1996 with only a handful of offerings and students. By spring 1999, when this study was conducted, thirty-four classes were offered, serving 1141 students (Director of Distance Education, personal communication, February 21, 2000). In the Spring of 2000, seventy-three classes were offered, serving 2401 students.

Initially, the college offered these distance education classes in four formats: (a) Internet-only classes; (b) pre-produced broadcast television lectures which required students to tape classes from public television; (c) interactive video courses which required students to be in a satellite classroom at a fixed time while lectures were delivered from a remote campus; and (d) correspondence courses which required students to use the postal system for course communications (Patton, 1998).

By the spring of 1999, the correspondence courses had been replaced by multimedia courses. These multimedia classes relied on a variety of delivery methods, including the Internet and CD-ROM based materials (College Web Site, D. E. Course Delivery Modes, 1999).

The distance education class that was the focus of this study was an Internet-only class. It employed synchronous (i.e., real time) communication in addition to the asynchronous (i.e., delayed time) communication of e-mail and a class listserv. The students had a face-to-face group orientation session prior to the semester and the rest of
the classes were conducted using four types of electronic media: web pages, e-mail, a class listserv, and Multi-user Domain, Object Oriented (MOO) sessions. The asynchronous mode of the e-mail, web pages, and listservs was supplemented with the synchronous MOO sessions. In the MOO sessions, the students and the instructor met on-line as a group and held class discussions in real-time, similar to real-time chat sessions.

Characteristics of communication in each medium differ. E-mail is designed for individual-to-individual communications and messages arrive in chronological order by the date and time received. E-mail messages are only received by the intended recipient. Listserv messages are designed for individual-to-group communications. All messages posted on the listserv are received by all subscribers to the listserv. They are arranged in chronological order by date and time received. Both e-mail and listserv media are asynchronous (i.e., delayed time); the MOO media is synchronous (i.e., real-time). Communication in a MOO session is designed for individual-to-group communication. Since it is conducted in real-time, all participants must be on-line simultaneously. The subjects of the postings are not explicitly provided, therefore, it is more difficult to follow than e-mail or listserv communication. The MOO messages are in chronological order, but without indication of what is being discussed. When messages with a variety of topics are intertwined as they are with the MOO communications, it is sometimes difficult to determine to which topic a message is replying.

The freshman level Survey of Literature course that was the setting of this study was conducted entirely on-line, using only the four media described: web pages, e-mail, a class listserv, and the MOO sessions.
Purpose of the Study

The purpose of this study was to investigate how the culture of a postsecondary distance education course using primarily computer-mediated communications was constructed. In particular, it investigated how a classroom community with its own norms and expectations was built in an environment where all interactions were on-line. How these on-line interactions shaped the culture and how they were, in turn, shaped by the culture was the focus of this research. It is hoped that the role of the class participants' on-line interactions in constructing a classroom culture with its accompanying opportunities for learning will be better understood through this research.

The literature indicated that students in remote-site distance education classrooms where they do not have face-to-face interactions with the instructor and other students, often have problems with feelings of isolation and of not belonging to the distance education community (Carl, 1991; Wolcott, 1995, 1996). It is hoped that this study of a virtual classroom will provide insight into creating a classroom culture that promotes student feelings of belonging and provides various opportunities for learning.

Theoretical Framework

The theoretical framework for this study was one of social constructionism. This study was based on the theory that the interactions of teacher(s) and students in a classroom construct a unique classroom culture based on the characteristics of life in that classroom and that each culture provides different learning opportunities for the members of that culture. People unfamiliar with the culture of the classroom would only be able to see life in that classroom through the lens of what their own past experiences in
classrooms had been (Collins & Green, 1990). To become part of that culture, outsiders would have to:

(a) acquire knowledge of the meaning of the words, actions, and objects of the classroom; (b) learn to predict the events that would occur; (c) understand the norms and expectations for participating in these events; (d) determine the roles and relationships among members of the group and (e) fulfill the rights and obligations of group membership. (Collins & Green, 1990, p. 73)

The theoretical perspective that social culture is constructed by interactions among individuals over time is important to education (Collins & Green, 1990, 1992). Theories by both Vygotsky and Piaget have espoused the importance of learning as being a social activity. While Piaget focused on the individual's construction of their own knowledge by making sense of their social environment, Vygotsky focused more on the development of the social culture by the interactions of the group. Piaget focused on the child's understanding and the teacher was merely a passive observer. Vygotsky saw the teacher as an active participant and guide of the child's activity (Morgenthaler, 1997).

While the theoretical framework is one of social constructionism, the conceptual framework for this study is derived from a small group of qualitative studies that used ethnography and discourse analysis to investigate how traditional classroom participants' interactions over time constructed a unique social culture and how this culture influenced student learning (Collins & Green, 1990, 1992; Gutierrez, 1993; Floriani, 1997; Heras, 1993; Lin, 1993; Putney, 1996, 1997). Many contributors to these studies are part of the Santa Barbara Classroom Discourse Group (SBCDG). The SBCDG is conducting an ongoing research program consisting of researchers, teachers, and students investigating
the construction of classroom communities by members through their interactions. They are also concerned with how these classroom cultures influence the opportunities that students can access, accomplish, and learn in schools (Tuyay, Jennings, & Dixon, 1995). These studies will be discussed further in the following chapter.

Significance of the Study

Findings of this study of a postsecondary distance education class should be beneficial to educators and researchers by providing insight into the processes that shape the construction of the culture of on-line classrooms that rely on computer-mediated communication. It is anticipated that this study will strengthen the findings of similar research studies and broaden the research base on the building of an on-line community of learners in a distance education classroom. It is hoped that educators may become more aware of communication on-line when teaching in distance education programs in all disciplines. In addition, it is hoped that educators will become aware of how this communication may affect student perceptions of the social culture of the classroom and ultimately, how it affects student feelings of belonging to or isolation from this community. An insight into how on-line communication can result in student perceptions of being part of the culture of the classroom may lead to better learning environments for students in distance education classes.

Research Questions

Research questions and conceptual frameworks overlap and each affects the other (Miles & Huberman, 1994). The social constructionism theory used as a broad framework
in this study indicates that the social culture of a classroom is built by the interactions of
the participants over time. This study looked at communications within a virtual
classroom over a 16-week semester and investigated how this communication shaped and
was shaped by the culture of the classroom. Since this communication was not conducted
in a face-to-face environment, non-verbal communication was not available for analysis.

The literature indicated there is a potential for individual students to feel isolated in
distance education classes where the instructor is not physically present (Carl, 1991;
Wolcott, 1995, 1996). Given this potential and the theory that the social interactions of
teachers and students shape the culture of a classroom, this study investigated how
computer-mediated communications in a distance education class affected the students’
perceptions of belonging to the class. The overriding question addressed was: How do
the interactions of a class’s participants over time lead students to define themselves as
part of a distance education community? This question was subdivided into three research
questions:

1. How do the interactions of the participants in an on-line classroom construct the
social culture of a distance education classroom?

2. Are there any particular on-line activities or features that compensate for the lack
of visual and non-verbal interactions that are used in traditional classrooms?

3. What other environmental, pedagogical, or demographic factors play a role in
construction of the distance education class’ social environment?
CHAPTER TWO

REVIEW OF THE LITERATURE

This study investigated the construction of classroom culture in the non-traditional environment of an on-line classroom. To provide a foundation for this research, this review of the literature will begin with a discussion of classroom culture and how it is constructed through the interactions of the classroom participants. A summary of this review will conclude this section. The literature available on computer-mediated communications in on-line communities will then be presented followed by a summary of this literature.

The Classroom as a Community with its Own Culture

The children entered the room in which some construction had begun (i.e., bulletin boards were visible, space had been organized, particular materials had been selected). The room, however, was not the place that members of the culture know as "classroom." The teacher and children, at this point, did not know each other, did not have common expectations, did not share patterns of communicating, and had not constructed the classroom culture. (Collins & Green, 1990, p. 72)

A review of the literature supported the findings that face-to-face classroom interactions create a continuity of experiences and knowledge that lead the students in
each unique classroom to develop their own culture, or classroom community (Collins & Green, 1992; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996). The literature also indicated that it is important that students perceive themselves as being in a social environment that supports their learning in order for them to have the opportunity to learn; and that learning is directly tied to the social aspects of the learning environment. The classroom’s culture has a direct influence on what can be learned and on what can or is displayed as learning in a classroom (Collins & Green, 1992; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996; Tuyay, Jennings, & Dixon, 1995).

Students who are not members of this culture would need to focus more on becoming a member than on actually participating in the learning activities. These outsiders would have to:

(a) acquire knowledge of the meaning of the words, actions, and objects of the classroom; (b) learn to predict the events that would occur; (c) understand the norms and expectations for participating in these events; (d) determine the roles and relationships among members of the group and (e) fulfill the rights and obligations of group membership. (Collins & Green, 1990, p. 73)

Collins and Green (1992) investigated the construction of a culture and learning in a traditional classroom. They looked at the class as a social group and classroom life as holistic. Holistic referred to the concept that, although class ends daily, it really continues to the end of a specified period of time (the end of the semester) when the members of the social group disband.

Life is not viewed as a series of discrete bits but as a continuous ebb and flow of activity in which some events are recurrent, others are closely related or overlapping.
and still others are separate. Events in classroom life, therefore, have a history, and in most instances, a future. Some events may build on previous ones (on the same day or other days), while other events may be discrete and nonrecurrent (a special speaker; a party). (p. 87)

They also studied classroom experiences to see if there was a continuity of experience communicating in classroom life and of constructing meaning. They investigated what occurs when the pattern of classroom life is disrupted. In one of their studies, substitute teachers in one class who did not understand the norms and expectations of that class' culture affected the life of the students in that classroom by upsetting the norms the class' culture had developed. This supported their findings that having an insider's knowledge of how things are done in a culture facilitates learning.

The literature reported that Vygotsky's theory of the zone of proximal development (ZPD) may play a role in student learning with on-line technologies (Sugar & Bonk, 1995). A ZPD refers to the distance between a student's individual problem solving ability and that obtained with adult guidance or collaboration with peers who are more capable.

To understand this idea, you need to visualize two concentric circles, one inside the other. The smaller circle represents the tasks and activities and concepts which the (student) has mastered and in which the (student) can engage without help or guidance. The larger of the circles represents the tasks, activities and concepts which the (student) can tackle given help, guidance and encouragement from a (teacher) or more knowledgeable peer. (Morgenthaler, 1997, p. 176)
According to Sugar & Bonk (1995), the theories of both Vygotsky and Piaget may play a role in student on-line communication. They quantitatively examined the on-line communications of students in six middle schools and six high schools who participated in the World Forum. In the World Forum, students used asynchronous on-line communications to discuss environmental issues with Arctic explorers, World Forum mentors, peers, and researchers. The influence of Vygotsky's ZPD was reported when students interacted with the World Forum members who encouraged, assisted, or guided the student in thinking about environmental issues and in writing or communication tasks that were new to the students. Sugar and Bonk also reported a Piagetian influence when students were confronted by the views and opinions of others on-line. They suggested that students encountered cognitive dissonance and sought more information to increase their understanding of the issues with which they did not agree or did not understand. One of their findings was that the impact of mentor assistance could have been improved if the mentors organized the tasks better and modeled appropriate responses better. "... additional training of mentors or explorers may scaffold their ability to model higher levels of thinking, questioning, and perspective taking than witnessed here" (Sugar & Bonk, 1995, p. 578).

The shared experiences of the classroom, the goals of the class, the facilitation by the teacher, etc. all can shape the classroom into a culture. The students who are participating in the classroom share ways of referring to occurrences, knowledge of how life in their particular classroom is to be conducted, and a common knowledge of the classroom culture’s goals and expectations (Collins & Green, 1992; Heras, 1993; Lin, 1993).
Research conducted by Floriani (1997), Gutierrez (1993), Heras (1993), Lin (1993), Putney (1996, 1997), and others have used ethnographic analysis and discourse analysis to see how a classroom’s culture was built in traditional K-12 settings. In a study conducted in a seventh grade bilingual classroom that did not use computer technology, Lin (1993) identified two kinds of classroom language that influenced student learning: language in the classroom and language of the classroom. Language in the classroom referred to the language (i.e., Spanish, English, Vietnamese, etc.) that the individual students brought into the classroom. Language of the classroom referred to the language that was constructed by the students over time as they interacted in the classroom. It was the language of the culture of this unique classroom. This language of the classroom was built on shared experiences, shared knowledge of how things were done in class, and on the norms and expectations of the culture of the classroom.

Lin’s research investigated how the patterns of interaction among the class’s members influenced the learning opportunities of the students. She used discourse analysis to examine what was involved in being a member of this particular seventh grade class, what language uses were required, and what counted as classroom members’ knowledge (Lin, 1993). To do this she looked at the daily interactions of students and teacher, the patterns of interaction across time, and the historical nature of the events and sub-events that occurred (Lin, 1993). Her research provided insights into how “the patterns of classroom life support and constrain knowledge construction and access to learning in school settings” (Lin, 1993, p. 404).

The current study used an ethnographic approach and discourse analysis to examine the patterns of participant interactions over time, the interactions of the teacher and the
students, and the historical nature of the events and sub-events that occurred in the classroom. It also investigated how the participants' interactions shaped the students' learning opportunities. The major difference between the current study and those of the SBCDG (i.e., Floriani, 1997; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996, 1997) is that the classroom interactions that occurred in this study were primarily on-line and lacked the face-to-face communications of the earlier studies. In addition, participants in the current study were in a postsecondary classroom rather than in a K-12 classroom.

Research by Collins and Green (1990) also identified some components of how a traditional classroom's culture was built over time. In the fourth-fifth grade classroom they studied,

the teacher and students developed common ways of (a) perceiving what it meant to do class in this particular room with this unique group of people; (b) acting and interacting within and across the events that made up life in this classroom; (c) interpreting the expectations and actions of everyday life in this classroom; and (d) evaluating what was accomplished within the everyday events in this classroom.

(Collins & Green, 1990, p. 72)

Research by Putney (1996) used ethnographic and discourse analysis to investigate how two teachers and their students in a high school English class constructed understandings of conceptual terms in their classroom that were necessary for them to be members of the unique culture of their classroom. She examined how the members of the class, through the activities of life in the classroom, over a period of time, created meaning for those members. These classroom interactions established norms of participation for this classroom. For example, understanding of the following terms was constructed and
shared within the classroom environment: “what counts as a seminar”, “what counts as an answer”, “what counts as character”, “what counts as coming of age”, what counts as a gem”, and “what was meant by you are it”. The study looked at how the constructed understandings of the practices in the classroom determined what counted as literacy in and across the contexts of the classroom.

The work of this research was similar to studies of the SBCDG because it used an ethnographic approach and discourse analysis to investigate how the actions and interactions of the members of the class shaped the culture of the classroom and the learning opportunities the culture provided. Like the research by Putney (1996), this study looked at how the members in an English class developed norms for class participation and built the learning environment of the classroom. However, the current study was of postsecondary students and was not in a face-to-face environment. In the data analyses, the researcher was not able to utilize face-to-face interactions nor videotape since the study was conducted in a virtual classroom, where only those interactions provided by text-based computer-mediated communications were available.

Summary

This review of the literature supported the theoretical perspective that participant interactions in a classroom construct a unique classroom culture based on the characteristics of life in that classroom. People unfamiliar with the culture of the classroom would only be able to see life in that classroom through the lens of what their own past experiences in classrooms had been. (Collins & Green, 1992). Because they have not participated in the classroom’s experiences and learning activities, they are not familiar with the norms and expectations of the culture. The culture-building activities of
the classroom have a direct effect on what is learned in that classroom (Tuyay, Jennings, and Dixon, 1995).

Ethnography and discourse analysis are primary ways the construction of the culture in a classroom can be studied. The ethnographic approach provides a way to identify the patterns of interaction that occur in the classroom and to locate key events. These key events can then be subjected to discourse analysis to see how the events were socially constructed and the role that language played in that social construction (Tuyay, Jennings, Dixon, 1995). Studying life in a face-to-face traditional classroom considers the oral, visual, and written resources used to construct the classroom's culture, whereas, an online study only has text-based resources available.

These studies are built on the theory that the teacher and students are shaping and being shaped by the classroom activities within and across the events of life in the classroom (Collins & Green, 1992; Floriani, 1993, 1997). Through this process they gain linguistic and sociocultural knowledge for what it means to be a member of a community and act in ways that are socially appropriate (Gutierrez, 1993; Spradley, 1980).

As Collins and Green (1992) tell us:

every classroom is a social group in which students and teacher are constructing and reconstructing a "class culture" within a "schooling culture". Teaching and learning, therefore, are viewed as social-interactive processes that must be explored within the situation (classroom) in which they occur. (p. 86)

The current study was grounded on the theory espoused in the literature: classroom participants construct the culture of the classroom through their interactions over time. A student belongs to the culture because he/she is aware of and follows the norms and
expectations they have helped to develop over time in the classroom. To investigate how this culture was built in an on-line classroom, this study, like those studies in the literature review, employed an ethnographic perspective and discourse analysis.

Computer-mediated Communications in On-line Communities

This review of the literature revealed extensive research on distance education, computer-mediated communications, networks, and computer technology in on-line environments from many different perspectives and in various educational settings. The purpose of this dissertation was to investigate the construction of an on-line classroom community in a postsecondary distance education class. Using this to guide the review, the literature is presented in three sections: (a) virtual classrooms, (b) distance education, and (c) approaches to studying on-line discourse.

Virtual Classrooms™

The first Virtual Classroom began at the New Jersey Institute of Technology (NJIT) in 1975 with a prototype created by Murray Turoff: The Electronic Information Exchange System (EIES) (Belson, 1994; Hiltz & Turoff, 1978).

A Virtual Classroom™ is a teaching and learning environment located within a computer-mediated communication system. Rather than being built of bricks and boards, it consists of a set of group communication and work “spaces” and facilities, which are constructed in software. (Hiltz, 1994, p. 3)

Studies of virtual classrooms began approximately twenty years ago (Hiltz & Turoff, 1978) when the use of EIES in postsecondary education at NJIT first appeared and have proliferated exponentially ever since. E-mail, computer conferencing, and listservs were
some of the computer-mediated communication methods used in the Virtual Classrooms studied by Hiltz (1988, 1994) at NJIT. The goal of these virtual classrooms was to improve access to and effectiveness of college-level courses offered either entirely on-line or in mixed mode (i.e., the network supplemented face-to-face traditional classroom instruction). The purpose of using CMC was to provide the teachers and students with the tools for facilitating collaborative learning (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994).

Collaborative learning means that both teachers and students are active participants in the shared task of seeking to understand and apply the concepts and techniques that characterize the subject area. Groups sized from two to the whole class work together or co-labor to master the subject matter and teach it to one another. (Hiltz, 1994, p. 9)

This definition of collaborative learning highlights the importance of the students and teacher working together as a group to accomplish their educational goals. It focuses on the participants in the classroom constructing norms and expectations of how the interactions will occur and building on the class’s history of working together in order for students to understand how to accomplish the tasks necessary. This idea of a classroom working together to learn supports the concept of the construction of a community within a distance education classroom that provides unique opportunities for learning.

Three names stand out in the literature because of their extensive research on on-line computer networks in education: Harasim, Hiltz, and Riel. Harasim has researched and written on on-line education and global networks at all levels of education from K-12 through postsecondary and adult learning. Hiltz has researched and written extensively on virtual classrooms in postsecondary education. Riel has also conducted research on
network learning at all levels of education, including Learning Circles in the K-12 environment.

Settings Riel has studied include: (a) K-12 classes which are connected on-line and using CMC for joint learning activities on the AT&T Learning Network; (b) networks of university researchers; and (c) students on the Intercultural Learning Network (ICLN). The AT&T Learning Network provided the means for small groups of six to nine classrooms around the world to work together for a specified period of time to meet common goals. These task-oriented groups, Learning Circles, integrated computer technology, classroom curriculum, and global education. The emphasis in these Learning Circles was on community-based research being shared with global partners on-line to assist students in making global issues more relevant and personal (Riel, 1993).

In her research on the Electronic Information Exchange System at NJIT, Hiltz (1988) compared sections of several higher education courses taught in a traditional classroom, totally on-line, and in mixed mode. Hiltz wanted to determine if the new communications capabilities of the EIES system (i.e., e-mail, on-line conferences, electronic bulletin boards, and electronic notebooks) were meeting the communication needs of the on-line classes. In the new system, electronic mail replaced letters, telephone conversations, and face-to-face conversations and visits. The on-line conferences replaced face-to-face conferences and meetings. Electronic bulletin boards replaced hard copy newsletters. Electronic notebooks were used for sending drafts and also removed the necessity for co-authors to be co-located.

Findings from this study indicated that the students: (a) felt taking on-line courses was more convenient than taking face-to-face courses, (b) had increased interest, involvement,
and motivation in the on-line courses, and (c) experienced increased interaction with the professor and other students (Hiltz, 1988). The network design facilitated the use of CMC for the well-motivated and well-prepared students with good access to the technology. These students increased their interaction with their professor and other students and their active participation in the course with CMC use. On the down side, Hiltz (1988) saw the disadvantages of the Virtual Classroom as: (a) some students and some faculty did not like the on-line course, (b) on-line courses took more time than face-to-face classes for both students and teachers, (c) students found it more demanding because they had to play an active part in the class daily, (d) students deficient in basic reading, writing, and computational skills had a more difficult time with the on-line classes than with face-to-face classes.

Some of the advantages that may be realized with Virtual Classrooms over face-to-face communication include: location, flexible time, no travel, no wasted time commuting, shared work space and more participation opportunity (Hiltz, 1994). Potential disadvantages are: (a) limited offerings by institutions, (b) required computer equipment, (c) delayed feedback, (d) required textual skills of reading and writing, and (d) required technical skills involving use of a microcomputer and resolution of hardware problems.

Virtual classrooms can also provide the following improvements over traditional classrooms to improve the effectiveness of the course: (a) facilitation of collaborative or group learning, (b) more active learning because the computer forces responses and attention from the participants, (c) facilitation of self-pacing (i.e., learning at the student's own pace), (d) use of other computer resources, such as running software on-line, and (e) complete notes are available because the records of the text-based medium are saved on-
line (Hiltz, 1994). There are also several limitations and characteristics of CMC that may lead to less effectiveness: (a) absence of audiovisual media, (b) potential information overload from a large number of students generating material to share with others, and (c) required motivation and regular participation because class does not meet at a specific time (Hiltz, 1994).

When studying on-line interactions, one must realize that on-line communication does not provide the participants with the visual and non-verbal communication that is present in face-to-face communication. As early as 1978, Hiltz and Turoff explored computer conferencing as a social process with characteristics that could assist or hinder communications. In an in-depth discussion of the different audio and visual channels of communication available in face-to-face communication and in computer-mediated communication, they focused on the psychological differences and the narrowing of the communication channels in CMC.

They found the following to be missing from on-line communication, yet present in face-to-face communication: (a) the sounds like um or you know (vocalizations) that can accompany the conversation, (b) language content such as double meanings and slips of the tongue, and (c) visual information. This visual information can include: (a) the sender's general appearance, age, sex, race, handicaps, (b) facial expression, (c) eye contact (direction, duration, and frequency), (d) body movement (head nodding and other gestures that substitute for words, pointing, nervous habits, posture cues, physical distance between speakers), and other body language, and (e) psychophysiological responses such as blushing, different rates of breathing, blinking, and yawning (Hiltz & Turoff, 1978).
They reported that removal of this feedback by replacing face-to-face communications with CMC can negatively affect the communication. They also stated that the absence of face-to-face communication cues can result in culture shock for users (Hiltz & Turoff, 1978). They found that this loss of nonverbal cues could limit the information one has to perceive their communication partners, regulate social interactions, and provide a social context for communication.

Hiltz and Turoff (1978) reported that CMC users can compensate for the lack of visual cues by becoming better organized in their written communication (i.e., using indentations and numbering to help receivers follow the senders' train of thought). They also reported that users can send text-generated pictures that indicate the sender's mood or speech tone (Hiltz & Turoff, 1978). Such pictures have developed into sophisticated representations that Rezabeck and Cochenour (1995) refer to as emoticons. These text-generated cues, when read sideways, are used to represent feelings or emotions.

Community building on-line may also be affected by cultural or gender differences. Research results on cross-cultural communication (Ma, 1996) indicated: (a) participants in CMC did not have as high a commitment as when they engaged in face-to-face communications, (b) they tended to be more direct and self-disclosing and (b) there was a discrepancy between how different cultural groups perceived themselves (Ma, 1996).

Studies of on-line communication revealed that there may be gender-related problems in CMC use. Women were reported as being uncomfortable with the aggressiveness of flaming used in some CMC (Truong, 1993). Studies indicated women were more comfortable with a less direct, more inclusive style that attempted to avoid arguments and confrontation (Tannen, 1990). Researchers have found that aggressive language on-line...
may deter women from participating in on-line discussions. Other researchers cited that on-line harassment was a problem (Delaimo, 1995; Truong, 1993; Turkle, 1996).

Even with all of its potential problems, researchers report that classrooms supported by CMC systems promise to promote the construction of on-line learning communities. Twenty years ago Hiltz and Turoff (1978) made several predictions on the use of computer conferencing. They predicted it would:

(a) have dramatic psychological and sociological impacts on various group communication objectives and processes, (b) become a fundamental mechanism for individuals to form groups having common concerns, interests or purposes, (c) dramatically alter the nature of social science research concerned with the study of human systems and human communication processes, and (d) facilitate a richness and variability of human groupings and relationships almost impossible to comprehend.

(pp. xxix - xxx)

**Distance Education**

This section will provide a brief overview of distance education to orient the reader. Many studies have identified and discussed problems encountered by the distance learning student (Berge, 1995; Carl, 1991; Lever, 1993; Rumble, 1988; Willis, 1994; Wolcott, 1995). Student motivation, self-discipline, and involvement in the learning process have been cited as potential trouble areas (Ahern & Repman, 1994; Lever, 1993; Rumble, 1988; Wolcott, 1995). Students stated that the physical separation from the instructor and other students was a major problem (Wolcott, 1995). They mentioned having fewer opportunities for contact with their instructor, both in class and outside of class (Carl, 1991; Wolcott, 1995). Some students reported a feeling of isolation and a lack of
community, particularly when they were involved in a distance education course at a remote site. They mentioned that they did not have contact with students at other locations and often did not have the support of a peer learning group. They felt isolated or as if they were second class citizens to students that were present with the teacher at the origination site (Wolcott, 1995). It was reported that student motivation and sustained involvement in the learning process were affected by this sense of isolation.

In addition, Wolcott (1995) reported consequences due to differences between on-line communications and face-to-face communication in distance education: (a) the decreased perceived closeness among participants, (b) the reduction in the amount and frequency of interaction, (c) the loss of both oral and written feedback, and (d) the interference in the transfer of messages that resulted in a greater chance of having the meaning of the messages being misinterpreted (Wolcott, 1995).

Improvements in CMC facilitate the vital role it plays in linking the teacher and students in distance education classes. In addition to e-mail, today’s distance education classes utilize newer technologies, such as interactive MUD’s (Multi-user Domains) and MOO’s (MUD’s Object Oriented) and the World Wide Web. Two-way interactive instruction has been found to encourage students to be more self-directed and problem-centered, to facilitate student’s social needs, and to allow adult learners to use their own initiative more (Schieman, 1990).

Findings indicate that the interactions between the instructor and the learner are vital to the educational process. It has been reported that these interactions have the potential to improve communication, increase rapport, and decrease student feelings of isolation (Repman & Logan, 1996; Wolcott, 1994; Wolcott, 1996). Student-student interaction has
also been reported to be very important to increasing relevance, motivation, and rapport; and decreasing feelings of isolation. Since distance education students may be participating worldwide, the on-line interaction is very important in establishing feelings of community (Repman & Logan, 1996). Wolcott (1996) reports that using learner-centered strategies also lessens isolation among students. These strategies focus on breaking down invisible walls and facilitating identification with the group. The aim is to help students form learning partnerships while at the same time handle the demands of quasi-independent learning (Wolcott, 1996). It is important to shape the social environment into a community in on-line classes to provide feelings of belonging and learning opportunities for students.

**Approaches to Studying On-line Discourse**

This section will present research reflecting the various approaches and methodologies chosen by researchers to examine discourse in an on-line environment. They include both quantitative and qualitative studies and reflect such diverse methodologies as: (a) message flow analysis, (b) message act analysis, (c) content analysis, (d) participant structures, (e) factor research, (f) behavior settings, and (g) interviews and discourse analysis.

Many of the studies of the on-line communication process took a linguistic approach and compared and contrasted use of CMC to speech and to writing (Collot & Belmore, 1996; Colomb & Simutis, 1996; Topper, 1997; Yates, 1996; Werry, 1996).

Topper (1997) compared CMC to speech. He studied discourse in both the face-to-face meetings and the on-line listserv interactions of faculty members and graduate students at a major university. He investigated how discourse was used to establish power and authority in on-line communities. He focused on patterns of participation,
changes in these participation patterns, and the possible effects of authority on participation within each medium. Power and authority were indicated when the participant had control over the meeting agenda, schedule, and/or changes of topic within the meetings.

Through his studies of on-line and face-to-face discourse, he found several similarities in structure between face-to-face and on-line interactions: (a) similar roles existed for speakers and listeners; (b) a sequence of turns/messages over time led to coherence; and (c) multiple conversational floors managed/coordinated turn-taking or turn exchange. He also found differences in: (a) the ways participants gained the floor to speak, (b) the transitions between speech events, (c) the relationship between speaker and listener, and (d) the use of openings and closings as markers to indicated speech events.

In computer-mediated communications, the participants gained access to the floor to speak only if the communication was responded to by another on-line participant. In face-to-face communications, verbal and non-verbal communication managed access to the floor and a turn to speak. Transitions between speech events were handled by time and space in face-to-face communications; whereas in CMC they were handled by just changing the topic. In addition, in face-to-face communication, a change in topic was done by the speaker. He reported that in CMC anyone could send a new message or a new subject and change the topic. The relationship between speaker and listener was also different. E-mail did not contain speech overlap, silence in the conversations, nor non-verbal communication. Lastly, the markers used in face-to-face communications to denote openings and closing of topics were not present in CMC (Topper, 1997).
Findings of the current study were used to provide insight into the content and structure of the on-line messages. Although power and authority were not investigated, the analyses expanded on Topper's (1997) research by applying a more stringent criteria to determine if a message gained the floor.

Research question two specifically addressed how the absence of visual and non-verbal communication was compensated for within this community. Findings are reported in Chapter 4.

In another study, Colomb and Simutis (1996) compared CMC to writing and found three kinds of support were provided by the CMC. First, CMC created a space for conversation that was different from the traditional classroom and some students preferred on-line discussions to face-to-face ones. Next, students liked being able to refer back to the record of their conversations that CMC provided. The third kind of support provided by CMC was the interaction itself. The researchers stated that this level of interaction had characteristics of both writing and speaking, but was not exactly like either form of communication. The students liked being able to take the time to think out their messages and did not feel pressured to answer communications immediately.

A study by Levin, Kim, & Riel, 1990 examined communication differences between face-to-face and on-line communication with three new approaches: (a) intermessage reference analysis, (b) message act analysis, and (c) message flow analysis. In intermessage reference analysis, the researchers separated the on-line communication threads by categorizing them according to the original message to which they were replying. After separating messages in the Intercultural Learning Network (ICLN) in this manner, they created message maps to show the interactions of the related threads of the
communications (Levin, Kim, & Riel, 1990). In the message act analysis the researchers analyzed the messages by the function that each message was to accomplish. For example, when looking at instructional functions, they identified the sequence that occurred in the communication as: (a) initiating a new topic, (b) replying to a previous message, or (c) evaluating a previous message. The most common pattern was the one in which the messages replied to some one message that had initiated the topic. Sometimes, the original message had a chain of replies. They reported that instructor-initiated student replies are the most common type of face-to-face communication, but they were not visible in the CMC they studied.

The third technique used by the researchers to analyze message threads was message flow analysis. They quantitatively plotted the density of the messages at different times to find a pattern of on-line message activity. As could be expected in an educational environment, increases and decreases in communication coincided with the fall and spring semesters when students were more active on campuses (Levin, Kim, & Riel, 1990). They concluded that the interactional patterns of communication that differ for face-to-face communication and CMC illustrate that CMC requires new ways of thinking about instruction.

Some of the interactional patterns of communication that were identified in the current study were built into the instructional design in order to maximize the advantages of using various media. This required different instructional techniques than in the traditional classroom in order to design and maintain the learning environment. How the interactions of the class members shaped these patterns is discussed in Chapter 4.
Another study (Korenman & Wyatt, 1996) quantitatively used content analysis to examine the discourse of a listserv for Women's Studies List (WMST-L). They wanted to discover how the CMC interactions on WMST-L could feel like the interaction in a group. The researchers found a high rate of personal e-mail messages were exchanged, both on and off the list service. They deduced that this helped the participants to develop feelings of belonging to the group. Korenman and Wyatt (1996) also surmised that since the listserv was bound by common goals, assumptions, and vocabulary this also contributed to feelings of group membership. They reported that the listserv was primarily for feminists and this may have played a role in the member's identification with the WMST-L community. In this environment, participants could discuss interests they had in common and "receive encouragement and support from one another" (Korenman & Wyatt, 1996, p. 240). Establishing common bonds, participating in group interactions, and developing feelings of belonging to the community were also investigated by the current study.

Participant structures were the methodology of choice for quantitative research conducted by Riel & Levin (1990). They investigated patterns of network interactions using a framework of participant structures to identify factors that affected the use of online networks. They modified a research strategy that Phillips (1982) used to compare group interactions of students from other cultures functioning in American classrooms. These modified participant structures provided a lens with which to view features of network design and interaction that affected the success and/or failure of three groups using online networks: (a) university faculty, (b) elementary and secondary teachers, and (c) elementary and secondary students. The five participant structures used were: (a) the organization of the network group (i.e., its size, common knowledge and interests, past
experiences, and the physical location of the participants), (b) the network task organization (i.e., the types of activities that participants engaged in over the network), (c) the response opportunities (i.e., ease of access to the interaction, including social and technical resources for sending and receiving messages), (d) the response obligations (i.e., the tacit or formal requirements for a response to a message on the network) and (e) evaluation and coordination (i.e., any forms for assessing the quantity or quality of the exchanges on the network) (Riel and Levin, 1990).

Findings of this study indicated that several factors were important to the development of an on-line community that met the participants' needs and had a high level of use or sustained activity. The most important factor was that the participants perceived the network as providing an important function. Reliable and easy access to the network and monitoring and facilitating group interactions by a leader were also found to be important (Riel & Levin, 1990). The monitoring and facilitation of group interactions by the instructor and the common goals and interactions of class members were qualitatively investigated in the current study. This research approach provided more insight into how these features affected the development of the on-line community.

Brett, Woodruff, and Nason (1997) combined qualitative and quantitative methodologies in a study of the development of a mathematical knowledge-building community of pre-service mathematics teachers. The learning environment for this study was both on-line and face-to-face. It consisted of small group discussions, workshops on cooperative learning techniques, numerous experiences with collaborative learning in a variety of subject areas, and shared electronic databases.
These on-line databases included conferences of commentary on mathematics where pre-service teachers, their professors, and researchers could post ideas and comments. As a framework, they used four factors (i.e., function, identity, discourse, and shared values) to investigate the development of an on-line community of learners among pre-service mathematics teachers. The goal of the preservice mathematics teachers' on-line interactions was to get the teachers involved in mathematics and alter their attitudes by gaining new knowledge in a collaborative community setting.

For the first of these four factors, function, the researcher looked at the goals or objectives of the community. For the second factor, identity, they looked at whether or not the group had a shared identity that made them perceive themselves as being part of the group. For discourse, the third factor, they analyzed communication that located the teacher as a member of the group. For the fourth factor, shared values, they focused on the values that the teachers shared as members of the group. In the current study, how the members of the class developed a shared identity with the group and how both the teacher and the students interacted as members of the group within dyad, small group, and whole group situations were key areas of investigation.

Data sources used by Brett, Woodruff and Nason (1997) included discourse conducted on the shared database, tests of mathematical subject matter knowledge, and questionnaires and interviews. The researchers reported that the electronic database used was able to provide conditions necessary for most of the participants to maintain a feeling of community. The participants reported that this network design provided social support and ideas. Different patterns of database use suggested that: (a) the network provided a different kind of community than face-to-face interaction, and (b) more intensive small
group experiences were necessary to help members who did not participate much to build confidence and a sense of belonging so they would engage in more conversations and reflect more on their own activities.

A qualitative study using discourse analysis was conducted by Scott (1993) to examine network participants' perceptions of pressure to participate on the network. He used behavior settings as a framework to explore telecommunications experiences of several separate networks: (a) a network for information exchange during the 1989 San Francisco earthquake; (b) several different networks designed for K-12 students; and (c) a network at the University of California at San Diego used in a network literacy course. One of the reasons Scott wanted to look at CMC use with behavior settings was to look at the concept of over-manning and under-manning within these settings.

Behavior setting theory recognizes three types of settings: (a) underpopulated, (b) adequately populated, and (c) overpopulated. Results of this study indicated that participants in underpopulated settings generally have more and more varied setting-maintenance activities than adequately or overpopulated settings (Scott, 1993). That is, the participants must do more activities and more varied activities that act to maintain the environment, such as following up on communication.

Scott reported that overcrowding resulted in a sense of overpopulation, which led to less and less varied activities that maintained the setting. In the under-manned setting, he found that the few participants who were there felt obligated to carry out a variety of tasks because no one else was there to do it. He also reported that, in the over-manned setting, the participants were inclined to leave it to others to do. If the setting was adequately
manned, there were exactly enough roles to give each participant enough satisfaction to maintain the setting (Scott, 1993).

A participant in an on-line discussion group that does not contribute to the conversation of the group, but merely listens in to the conversation, is said to be lurking. Scott (1993) deduced from his research that lurking and the receipt of a lot of e-mail affected the participant’s perceptions of whether a setting was over-populated or under-populated. He stated that it is the student’s perception, not the actual structure, which characterized a network as over- or under-populated. Networks with a lot of members may seem as if there are only a few members if there is not much pressure to communicate. In this situation, the student may perceive the network to be under-manned, as in the case of lurking and not participating on-line.

On the other hand, the reverse may be true. The pressure to communicate may be caused by a lot of incoming e-mail that the student feels compelled to respond to and the student may perceive the network as being over-manned and there being too many people with whom to communicate. Therefore, lurking could cause a student to perceive the network as being under-manned; while a crowded in-box could cause a student to perceive the network as being over-manned.

As mentioned earlier, certain characteristics would accompany either type of behavior setting. These characteristics may help to explain why some networks are used by the participants more than others. The perceived size of the network may affect the participation of the members because of their perceptions of it.

Other researchers investigated the properties of group dynamics in the network environment by looking at the discourse properties and collaborative working patterns of
the participants (Riel & Harasim, 1994). They were concerned with how and if on-line communities were formed. Much of the literature indicated that the use of on-line communications can be used to create a community of supportive learners (Hiltz, 1988, 1994; Kerka, 1996; Powers & Mitchell, 1997; Riel & Harasim, 1994).

A small number of studies investigated on-line communication in virtual communities such as MUD’s and MOO’s. However, the literature did not reveal studies of the use of these technologies in a classroom. The text-based interactive virtual communities that were studied created a sociocultural environment within which users interacted and formed relationships without knowing the actual identity of each other (Delaimo, 1995; Deuel, 1996; Turkle, 1996).

The participants in the present study used the virtual communities as a predefined group, the Survey of Literature class. In addition to sharing the common goal of learning within this class, the real-world identities of the proposed study’s participants were known to each other. In the MOO!s that were investigated, the individuals did not know with whom they were participating and did not have a common goal.

Findings in a qualitative study by Powers and Mitchell (1997) of a graduate course conducted entirely over the Internet revealed four major themes related to student perceptions and performance: student-peer support, student-to-student interaction, faculty-to-student interaction, and time demands of the course. An interesting finding was that the teacher was the primary source of information in the synchronous chat sessions. However, in the asynchronous communication (i.e., e-mail and listservs), the teacher took on a more facilitating role and everyone in the class became part of the community of
learners. Students thought they were spending more time on-line for the course, when in reality most of this extra time was spent on surfing the Internet and not on class activities.

The researchers agreed that the student interactions that existed in this on-line class may not have been possible in a face-to-face classroom.

Students found themselves bonded by a common experience and needs and were able to take that, despite the lack of experience on the part of some, and turn it into a true classroom community that was not bound by geographic space. (Powers & Mitchell, 1997, p. 19)

Findings of this study revealed that it is possible to create a community of learners in a virtual classroom environment. Findings also revealed that the perceptions of and performance in a class remained positive even though face-to-face communication was absent (Powers & Mitchell, 1997).

This current study was similar to the study by Powers and Mitchell. They used a qualitative research design to investigate students' perceptions and performance in a graduate-level five-week summer course (i.e., Accessing Information Through Technology) conducted entirely over the Internet. The current study used a qualitative research design to look at a full-semester 16-week freshman level college course conducted entirely over the Internet. The difference was that Powers and Mitchell's study looked at a course that dealt specifically with information technologies; the majority of the students were already familiar with the computer technology used. The students in the current study had various levels of computer technology experience. The researchers reported that the student's familiarity with the technology was a limitation of their study.
The ability to use the tools of the virtual classroom is what enables a community of learners to develop. A course delivered over the Internet on the topic of Western Civilization does not have the luxury of spending weeks allowing students to become acclimated with the technologies and therefore may not be able to achieve the same type of community development. (Powers & Mitchell, 1997)

Instead of looking at an on-line course that deals specifically with information technologies as Powers and Mitchell (1997) did, the current study investigated an on-line freshman level college Survey of Literature course. The major objective of this course was to teach students to understand and appreciate literature, not to teach computer technologies. A greater variety of computer experience existed among the students than it did in the Powers and Mitchell’s study.

Summary

This part of the review of the literature has presented research on computer-mediated communications in on-line communities, including a look at the methodologies used by other researchers of on-line communities. In discussing the literature on CMC in on-line communities, this review presented studies on Virtual Classrooms, distance education, and on-line communities. It also identified studies reflecting the various methodologies chosen by researchers to examine discourse in an on-line environment. The research reflected such diverse methodologies as: (a) message flow analysis, (b) message act analysis, (c) content analysis, (d) participant structures, (e) factor research, (f) behavior settings, and (g) interviews and discourse analysis. Research also indicated cross-cultural (Ma, 1996) and gender differences (Delaimo, 1995; Korenman & Wyatt, 1996; Truong, 1993; Turkle, 1996) may play a role in the construction of an on-line community.
The literature also revealed that the lack of the visual cues present in face-to-face communications has the potential to impede on-line communication (Hiltz, 1994; Hiltz & Turoff, 1978; Kerka, 1996; Willis, 1994; Wolcott, 1995). Despite the differences, research also indicated that the use of CMC has the potential to nurture community building (Hiltz, 1988, 1994; Kerka, 1996; Korenman & Wyatt, 1996; Powers & Mitchell, 1997; Riel & Harasim, 1994). Some of the similarities and differences between CMC and face-to-face communication were also presented.

The review of the literature found large numbers of both qualitative and quantitative research on computer-mediated communication, distance education, on-line communities, and network learning. However, when the focus was narrowed to studies in on-line classes that took an ethnographic perspective and used discourse analysis to investigate the construction of a classroom’s culture, there were not many. A better understanding of how the teacher and students in a distance education class interact to form a virtual classroom’s culture is needed before we can begin to answer some of the many questions posed when providing education in a virtual classroom. It is anticipated that the findings of this study will contribute to this understanding.
CHAPTER THREE

METHODOLOGY

In this chapter, the researcher will describe how the study was conducted by discussing the research design, participants, materials, data collection, and data analysis. Methods of triangulation that were employed will also be discussed and a summary will complete the chapter.

Research Design

This research study employed a qualitative methodology using an ethnographic design and discourse analysis. The study investigated the construction of a classroom culture in a distance education class using computer-mediated communication (CMC). To get a more complete picture of the community being developed, this study investigated what was being constructed by the members of the class over the duration of the semester and how it was created by the day-to-day interactions of the class participants.

Interactional ethnography (Floriani, 1997; Jennings, 1996; Putney, 1997) refers to such a design by combining an ethnographic perspective with sociolinguistic discourse analysis. Ethnographic analysis revealed the patterns of practice, norms, expectations, roles, and relationships that were developed over time by class members. Discourse
analysis revealed how the moment-to-moment on-line interactions built these community characteristics.

Participants

The selection of a particular class, taught by a particular instructor, has the potential to influence the data collection, analysis, and interpretation of findings. By identifying and describing the settings and participants and by explaining how they were selected, a study can be compared and contrasted to others (LeCompte & Preissle, 1993). Qualitative researchers do not seek to generalize their findings to a larger population as in quantitative studies, but to allow comparison and contrasting for interpretation.

This section will begin with information on how the class and participants for this study were selected and what criteria were used. A discussion of how access to the class, the students, and the data were obtained will follow. Next, the researcher will present and discuss techniques used to monitor and address issues involving participants’ documents and associated events. This section will be concluded by a presentation of additional participant data.

Selection of Class and Participants

The selection of the class and the participants for this study were theoretically determined by the social constructionist perspective and the concern for technology considerations of on-line classes. The researcher was interested in the social aspects of distance education to demonstrate how students and their teacher could build a classroom in cyberspace, without interacting face-to-face. The conceptual framework of interactional ethnography also drove the researcher’s choice to study the construction of
the classroom culture/community by observing the interactions and relationships among
the entire group.

Criterion-based selection was used to select the class and participants to study. This
type of selection requires that "the researcher establish in advance a set of criteria or a list
of attributes that the units for study must possess. The investigator then searches for
exemplars that match the specified array of characteristics" (LeCompte & Preissle, 1993,
p. 69).

The criteria for selection of the class and participants of this study were identified as
follows: (a) the participants would need to be in an Internet-only distance education class,
preferably one in which the students had minimal history together, and (b) the class would
need to have a minimum of technical and other problems that would interfere with the
curriculum requirements and the interactions of the class participants.

The college chosen was one of the fastest growing colleges in the western United
States. This growth was accompanied by the introduction of distance education class
offerings, which began in 1996. Distance education at this college grew from ten courses

In the spring of 1999, when this study was conducted, thirteen Internet-only classes
were offered. Of these, only four had been taught previously by the same instructor. Of
these four, two instructors had taught one other Internet-only class, one had taught three
other Internet-only classes, and one had taught twelve other Internet-only classes.

The criteria for studying a class with a minimum of technical problems which could
potentially interfere with curriculum requirements and participants interactions led the
researcher to seek an instructor experienced in both the technology and the curriculum of
the class. The instructor who had taught twelve other Internet-only classes had also been providing classes in this mode at this college since the summer of 1996. From the summer of 1996 through and including Fall 1997 (a total of five semesters), he was the only instructor providing Internet-only classes. Prior to the spring 1999 semester, he had taught approximately 57% of the Internet-only courses.

The choice of this professor was also supported by perceptions of other distance educators and the researcher regarding his expertise with the on-line technologies employed. The researcher's personal observations of his technical competence were obtained through attendance at several of the in-service seminars he conducted that were designed to assist others in providing on-line education and becoming familiar with the technology. Perceptions of his technological competence were also based on informal interviews with other instructors at the college who were providing distance education courses and working with the professor who was chosen for this study.

In order to study a class conducted by this professor, the researcher was not able to exactly meet the criteria of having students with a minimal history together because of scheduling conflicts. In the researcher's judgement, having an experienced instructor for the class under study was more important than having students who were new to each other, the college, and distance education. It was reasoned that the impact of technical and curricular problems involved within the distance education offering of a professor experienced with the technology would be less than those problems with a professor new to this environment. In the researcher's judgement a better picture of the interactions could be obtained when the inexperience of the instructor was not a factor. By e-mail, the
researcher obtained the professor's permission to study his Internet-only Survey of Literature class in the spring of 1999.

**Obtaining Access**

Gaining access to the social situation and to the data is an important part of an ethnographic study (Spradley, 1980; Zaharlick & Green, 1991). As Spradley (1980) explains: "Deciding whether to seek permission, locating the persons who can grant permission, explaining the nature of your research, and finally gaining permission can become time-consuming activities" (p. 49). Spradley describes three types of entry into social situations for research: free-entry, limited-entry, and restricted-entry. Observing people on a beach is an example of a free-entry social situation. It requires no permission. Observing groups engaged in criminal activities is an example of a restricted-entry situation. Restricted-entry social situations have "a high probability that permission will be extremely difficult or impossible to acquire" (Spradley, 1980, p. 50). The object of study for this research was a limited-entry social situation. It required permission from one or more persons before the research could be conducted.

Zaharlick and Green (1991) describe gaining access as a negotiation that involves creating roles and relationships among multiple groups of people such as the researcher, administrators, professors, students, etc. These roles and relationships create rights and obligations for the researcher. The research can be supported and/or restricted by each of these levels and issues of concern. "Access, therefore, is a socially constructed process that must be established, monitored, maintained, and reestablished over the course of the [study]" (p. 215). As the researcher obtained the proper permissions, she was setting up a
contract with these levels for how the study would be conducted and how the concerns of those involved would be addressed and handled appropriately.

The researcher had to obtain permission from four sources: the university, the selected college, the professor, and the students for this study. First, it was necessary to obtain formal/written permission at the university level. This dissertation research was to be conducted under the guidance of faculty within the nearby university. Therefore, the researcher needed to obtain permission from her doctoral committee and from the university's Department of Research on Human Subjects. The form completed and submitted to the Department of Research on Human Subjects addressed the issues of confidentiality and the ethical treatment of human subjects involved in the study. In the dissertation proposal defense and acceptance, the doctoral committee questioned issues such as the role of the researcher and the study participants, the methodology to be used, the purpose of the study, and its theoretical underpinnings as derived from current relevant research literature.

At the selected college, permission was obtained from the research department and the vice president. The roles of the researcher and the professor, the absence of prejudicial questions in the student questionnaire, and the ethical treatment of the study participants were discussed and reviewed and permission was granted. Having the approval of the university's Department of Research on Human Subjects also facilitated the granting of permission.

Although the professor's informal permission had been granted verbally and through e-mail, it was still necessary to secure his permission with a formal written consent form. Various conversations with the professor involved discussions of the time required of the
professor and students for the study, methods to be used by the researcher for the study, the ethical treatment and confidentiality of the data to be collected, the role of the researcher and the professor, and the documents and records to which the researcher would have access.

In addition to providing permission to conduct the study, providing access to the data was also needed through the professor. Although the MOO sessions could be captured and recorded by logging into the session, the class listserv and the instructor-student e-mail communication had restricted access. They required the professor's intervention. Upon obtaining the researcher's e-mail address, the professor subscribed her to the class listserv. This allowed the researcher to collect the data directly from this medium. With the students' permission, the professor collected and e-mailed selected groups of instructor-student e-mail communication to the researcher for inclusion in the study. Since achievement outcomes were not the focus of this study, student grades, graded quizzes, draft and final essay assignments, and the names of the students completing the course were not made available to the researcher. Private student e-mail was also not made available.

Obtaining student permission was begun at the distance education orientation held prior to the beginning of the semester. The researcher solicited student participation by addressing them at the English department on-line course breakaway session which followed this orientation. In this presentation the researcher addressed such concerns as student time commitment, data gathering, the researcher and student roles, and the confidentiality of student grades, exams, and identity. The researcher stressed that pseudonyms would be used for all participants and students' real names would be kept
private. The professor encouraged student participation and espoused the importance of research in distance education classes to improve them for other students. Student consent forms and student questionnaires were completed by those present.

**Monitoring Participants' Documents and Events**

The researcher created a database to monitor the status of documents and events occurring that affected student participation in the study. After securing access to the class listserv, the researcher used a listserv command and obtained an unsorted list and file containing the names of current subscribers and their e-mail addresses. Each line in the list had the following format: STDONE@xxx.com Lori Student. In this example, STDONE@xxx.com was the student's e-mail address and Lori Student was the student's name.

Although the number of students enrolled according to the on-line student registration system and the number of subscribers to the class listserv differed initially, by February 17, 1999, when the subscribers' list and file were downloaded a second time, fifty-five students, the instructor, and the researcher were subscribed. Subscribers to the listserv had an option of hiding their names, but it is not known if anyone took advantage of this. Feasibly, students and others not enrolled in the class could also have had access to the listserv communication and not be shown on the subscribers' list.

The researcher used the subscribers' file to begin the creation of a database to monitor e-mail addresses of subscribers, their real names, and other pertinent data. As the need arose to track various research communication and hard-copy (i.e., printed) and e-mail forms, this database expanded to include the twelve fields shown in Table I. A short description of each of these fields is also presented in Table I.
Table 1

**Database for Tracking Participant Documents and Events**

<table>
<thead>
<tr>
<th>Field name</th>
<th>Field contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail Address</td>
<td>Complete e-mail address of subscriber</td>
</tr>
<tr>
<td>Last Name</td>
<td>Subscriber's last name (for alphabetizing)</td>
</tr>
<tr>
<td>MOO Name</td>
<td>Name used by subscriber in the MOO sessions</td>
</tr>
<tr>
<td>Permission Y/N</td>
<td>Was consent (permission) for use in study granted to researcher? Yes or No</td>
</tr>
<tr>
<td>Date of Permission</td>
<td>Date permission was obtained by researcher</td>
</tr>
<tr>
<td>Date of First Reminder</td>
<td>Date researcher asked students again for permission to study via individual e-mail</td>
</tr>
<tr>
<td>Date of Second Reminder</td>
<td>Date researcher asked students again for permission to study via individual e-mail</td>
</tr>
<tr>
<td>Date of Third Reminder</td>
<td>Date researcher asked students again for permission to study via individual e-mail</td>
</tr>
<tr>
<td>Survey Y/N</td>
<td>Was student survey obtained by researcher? Yes or No</td>
</tr>
<tr>
<td>Date On-line Survey Sent</td>
<td>Date survey was sent via individual e-mail to participant</td>
</tr>
<tr>
<td>Debriefing Returned? Y/N</td>
<td>Was debriefing survey sent to participants via listserv completed and returned to researcher?</td>
</tr>
<tr>
<td>Comments</td>
<td>Difficulties contacting the students, e-mail address changes, and other comments</td>
</tr>
</tbody>
</table>
This database was vital in tracking various research documents, such as reminders sent and receipt of permissions. By using a database, the data could be sorted and counted by any of the fields listed in Table 1. For instance, the records in this database could be sorted by multiple fields to identify: who and how many students had given permission, which students needed to be asked again for permission, who and how many students had completed and returned the student surveys, and who and how many students had completed and returned the debriefing questionnaire.

Not all students attended the distance education orientation held prior to the beginning of classes. Therefore, it was not possible to obtain hard copies of student consent forms and student questionnaires for all enrolled students prior to the beginning of class. Consent forms from students who did not attend the orientation were requested on three separate occasions: February 20, 1999, March 7 and 8, 1999, and on April 3, 1999. Each time, the researcher used the database fields shown in Table 1 to identify those students from whom she had not yet received permission. Each of these students was then sent an individual e-mail by the researcher asking them to complete and return the enclosed consent form. A similar procedure was followed to solicit the completion and return of the student questionnaires.

Persistence had its rewards. At the orientation, the researcher received nineteen completed consent forms, eighteen granting consent and one not granting consent. By the end of the semester, this number had risen to thirty-seven students granting consent. Students not wishing to participate, in the majority of the cases, just did not return a completed consent form. However, two students did explicitly refuse consent to be participants (i.e., one at orientation and one via e-mail).
Determining how many students who completed the semester were participating in this study was also assisted by this database and the listserv. Thirty-two students completed the entire semester. However, the names of the students who completed the class were not available to the researcher. In week eleven, the subscribers' list was retrieved again and thirty-eight students, the professor, and the researcher were still subscribed. A distribution of the number of participants and non-participants remaining on the listserv in week 11 is presented in Table 2. Of the thirty-eight students on the listserv, thirty-four had granted consent and four had not. Since only four students had not granted consent in the list from week eleven, it is safe to conclude that at least twenty-eight of the thirty-two students (i.e., thirty-two students completing the entire semester minus four not granting consent) who did complete the course were study participants. It was beyond the scope of this study to investigate the effect of participating in the study on the retention rate of the class.

Table 2

<table>
<thead>
<tr>
<th>Student type</th>
<th>Remaining</th>
<th>Not remaining</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>34</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>Non-participant</td>
<td>4</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>17</td>
<td>55</td>
</tr>
</tbody>
</table>
Additional Participant Data

As discussed earlier, participants for this study were enrolled in a 16-week postsecondary distance education course. This freshman level Survey of Literature course was taught in Spring 1999 at a college in the western United States. Aside from an initial face-to-face orientation to the course, this course was offered entirely over the Internet.

Fifty-five students were initially enrolled in this course and thirty-seven agreed to participate in this study. At least twenty-eight of the thirty-seven study participants completed the course. Thirty-six of the thirty-seven participants completed the student questionnaire. Both male and female students and various age and ethnicity groups were represented by the study’s participants (See Table 3). However, they were predominantly white females under the age of thirty.

Table 3

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Gender</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Under 24</td>
</tr>
<tr>
<td>White</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>N/A</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

No extra credit points were provided for student participation. Students’ self-evaluation of their level of expertise with the technologies used in this course covered a range from no expertise with the technology to advanced use of it. The five technologies surveyed were: word processing, World Wide Web, MOO, e-mail, and listserv. Students
were asked to evaluate their expertise as: none, beginning level, intermediate level, or advanced level. Table 4 reflects these self-evaluations.

Table 4

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Word processing</th>
<th>WWW</th>
<th>MOO</th>
<th>E-mail</th>
<th>Listserv</th>
</tr>
</thead>
<tbody>
<tr>
<td>No experience</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Beginner</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Intermediate</td>
<td>17</td>
<td>17</td>
<td>13</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Advanced</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Not Available</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

A majority of the students reported that they knew how to use a word processor (91.4%), the World Wide Web (75%), and e-mail (77.8%) at the intermediate or advanced level. On the other hand, the majority of the students had no experience or were only beginners with the MOO (61%) and the listserv (74.3%) technologies. With the popularity of word processors, the World Wide Web, and e-mail, these self-evaluations were not unexpected.

Pseudonyms were used for all members of this study. The connection between students' real identities and their pseudonyms are known only to the researcher. Since the web-based course materials could reveal the name of the instructor and the college under study, any references to these also used pseudonyms. The course web site name was also not revealed.
Materials

One textbook was required for this class. All other course materials were accessed from the class web page and Internet resources. All of these course materials were available to both the researcher and the class members. In addition to using the World Wide Web, other electronic media were employed as an integral part of the class: a class listserv, electronic mail (e-mail), and a class Multi-user Domain, Object Oriented (MOO) environment. More details on these electronic materials follow.

World Wide Web

The class web page provided a course outline with instructions on how to subscribe to the class listserv, a brief outline of the activities of each of the sixteen weeks of the class, and text that provided a link (hyperlink) to the course syllabus. Each weekly outline provided due dates for the various parts of each assignment and appropriate hypertext links to the class assignments, MOO directions, and the MOO site hosted by the Cal State University Northridge's Learning Resource Center. Additional details on the course syllabus and class assignment web pages are presented in the following paragraphs.

The course syllabus web page contained instructor information such as office hours and location, required texts and supplies, course goals and guidelines, expected learning outcomes, and grading criteria and calculation. Hypertext links to important components of the course were also provided on this web page. Through these hypertext links, students had access to step-by-step directions on submitting essays using e-mail, information on understanding comments on student essays, and on-line writing handbooks and resources.
The class assignment web pages contained objectives of the writing task, reading assignments in the textbook, a weekly on-line quiz, and hypertext links to additional reading assignments, lecture material, and peer evaluation instructions.

The instructor’s lecture material was accessed and read directly from the class assignment web page on the student’s computer monitor or the web page could be printed and read offline as hard copy.

Listserv

All students were required to subscribe to a class listserv at the beginning of the semester. This asynchronous electronic medium allowed a student or the teacher to communicate information to the entire class. The instructor used this medium to read and respond to student journals and responses. Since messages on the listserv were sent to all participants, this provided a means for feedback to the whole class on all of the instructor’s postings. The instructor also used the listserv to post a list of the peer evaluation group members and to make transcripts of the weekly MOO sessions available to all.

In addition to instructor use of this medium, asynchronous (delayed time) class discussions and class information were also disseminated. Students seeking answers from the class or wishing to discuss class-oriented topics could use this listserv as a forum for feedback from the entire class. Listserv communication provided opportunities for shared group interaction in an asynchronous medium.

Students also used the listserv to meet the class requirements. On a weekly basis, they were required to post a journal for the assigned readings and to respond to at least one other student’s posted journal. To take full advantage of the class discussions, they also
had to read all of the instructor's feedback on the journals and responses. Students could also obtain transcripts of the MOO sessions and reply to these weekly MOO discussions via the listserv.

The asynchronous nature of the listserv meant that participants' postings could be separated by minutes, hours, or even days, depending on the speed of the recipient's response and his/her service provider. This resulted in conversations that could extend for the entire week of the listserv postings or into the following week. Also, determining the exact time the message was sent was not possible from the data available. The date and time shown on the posting reflected the day and time the message was received by the researcher's server, not the day and time the message left the sender's computer.

Electronic Mail

Another asynchronous electronic medium, e-mail, was also an important component in this virtual classroom. In addition to using e-mail for personal communication with other students, students needed to use it for class activities.

Each student's midterm assignment essay was exchanged via e-mail with peer evaluation group members (usually three or four members) for feedback and constructive criticism prior to student submission of the assignment to the instructor. The peer evaluation group changed with both assignments, the midterm and the final. Members of the groups for the midterm assignment were assigned by the instructor via the class listserv. The listserv was later used to inform students of the new group composition for the final assignment. The final assignments were also facilitated by interactions on e-mail with the peer evaluation group. On the final assignment, students were permitted to request to work with or not to work with particular fellow students. The student's role in
this evaluation process both as a submitter and as a reviewer were part of the grade the student received for the assignment.

E-mail was used to submit the essays to the instructor and for the instructor to return the graded essays with his comments to the students. In addition, it was used for personal communication between the instructor and students and for student-to-student communication.

Individual student questions were handled in various ways. During the MOO sessions and on the listserv, questions were addressed with the entire group. If the student wanted a more private dialogue with the instructor, the individual student questions were addressed via e-mail. Instructor office hours were posted on the course syllabus web page in case a student desired telephone or face-to-face interaction.

**Multi-user Domain, Object Oriented (MOO) Sessions**

A MOO is a type of Multi-user Dialog/Dimension/Dungeon/Domain (MUD), which is a form of synchronous CMC. MUDs are text-based virtual environments that enable groups to interact in real-time (Ellsworth, 1994; LeNoir, 1998). These on-line environments were originally used for adventure games using role playing; hence the name Multi-user Dungeons (LeNoir, 1998).

Several types of MUDs have evolved from these role-playing adventure games. They are used for a variety of activity, including socialization, games, and research. The various types of MUDs - MUSHs (Multi-User Shared Hallucinations), MUSEs (Multi-User Simulated Environments), and MOOs (Multi-user Domains, Object Oriented) share common characteristics (LeNoir, 1998). They are all housed on computers that can be accessed by using the Telnet command, which is also used for accessing the Internet.
They are managed by one or more *wizards* and *gods*. A wizard is a programming assistant and a god is the chief administrator, who is usually the owner of the MUD (LeNoir, 1998). Server connections to the site are usually local. Therefore, accessing MUDs is free.

The MOO is a MUD based on an object-oriented programming language. This is a more complex environment than other types of MUDs (Ellsworth, 1994). MOOs allow participants, called players, to construct their own rooms, where others may visit and communicate. This tends to make players view the environment more as if they were entering a room for class or other activity and is closer to face-to-face situations. Players may also create objects within their environment with which players can interact. These objects may be chairs, benches, slide projectors, etc. Players may log in and choose a name for themselves. In this way, they can remain anonymous, if they desire. All players must be on-line simultaneously and, with a few exceptions, each can see what all others are seeing as it is posted, if they are in the same room. The following section discusses some of the more common commands used in the MOO.

**Communicating with MOO Commands**

The following commands, descriptions, and adapted examples were obtained from the DaMOO site at the Learning Resource Center at California State University in Northridge, the site that hosted the Survey of Literature class MOO sessions in the spring of 1999.

The `say` command is the most used command. It is used to talk to other people who are in the same room.

Example:

EmerilF types: say Hi, everyone.
EmerilF sees: You say, “Hi, everyone”.

Others in the room see: EmerilF says, “Hi, everyone”.

Instead of typing the word say, the user can begin the posting with a double quote, such as: “Hi, everyone. It is not necessary to include the ending quote. A posting that begins with a double-quote is treated as a say command (Learning Resource Center at California State University, 2000).

The *emote* command is also widely used. It is a way to send non-verbal communication to others in the same room. This is useful for signaling body language or performing an action in this text-based virtual environment.

Example:

EmerilF types: emote waves.

EmerilF sees: You wave.

Others in the room see: EmerilF waves.

As an alternate way to initiate the emote command, the user can precede his action with either one or two colons (i.e., : or ::) instead of typing the word emote (Learning Resource Center at California State University, 2000).

The *whisper* command is used to talk privately to someone in the same room. Unlike the say and the emote commands, only the intended recipient of the message sees it. All others are not aware the posting was made.

Example:

EmerilF types: whisper “How are you?” to BettyA.

EmerilF sees: You whisper to BettyA “How are you?”

BettyA (ONLY) sees: EmerilF whispers, “How are you?” to you.
The DaMOO site also includes a help command. This useful feature is initiated by typing in the word *help* followed by the name of the command for which help is needed. Information on the command and its use is then shown on the requester's screen only. Some of these commands and their descriptions are shown in Table 5.

Use of these commands and the experience of communicating in the virtual environment of the MOO can be better understood by actually logging in and interacting in the environment. Appendix E provides insight into this activity by describing the initial processes participants followed to log onto the MOO and begin communicating in the Nevada Tar Pits, the Survey of Literature class' room on DaMOO.

Data Collection

Because this distance education course primarily made use of electronic media for communications, it also provided a variety of data sources for research. According to Spradley (1980), three types of information are necessary to make inferences about a culture: (a) cultural behavior (i.e., what people do), (b) cultural artifacts (i.e., what people make and use), and (c) speech messages (i.e., what people say).

What the teacher and students in this distance education class said and what they did was available through the transcripts of teacher-student e-mail, group listserv communication, and group MOO sessions. What they made and used was available through the journal and response assignments on the listserv and the web sites they created.

Transcripts of selected instructor-student e-mail and all class listserv communication were saved on disk and archived. Individual student to individual student e-mail was not
### Table 5

**Descriptions of Some Common MOO Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>@describe</td>
<td>sets up a description for what others will see when they use the look command with your name.</td>
</tr>
<tr>
<td>@name</td>
<td>changes your name for this session. This will show on your messages.</td>
</tr>
<tr>
<td>@quit</td>
<td>to logout of the MOO session</td>
</tr>
<tr>
<td>@who</td>
<td>lists all the currently connected players, how long they have been connected, how long they have been idle, and their location in the MOO, including other rooms</td>
</tr>
<tr>
<td>help</td>
<td>to get help on any of the MOO commands</td>
</tr>
<tr>
<td>look</td>
<td>shows the description of an object</td>
</tr>
<tr>
<td>north, south, west, etc.</td>
<td>to leave the current room and go in a specific direction to another room</td>
</tr>
<tr>
<td>out</td>
<td>takes the player out of the current room and to another room</td>
</tr>
</tbody>
</table>
made available to the researcher. However, transcripts of the interactions of the individual students on both the listserv and in the MOO sessions were captured and used in this study. The MOO software was used to save a transcript of the fourteen chat sessions on disk and archive them.

Data of students choosing not to participate were not used in this study. Their postings in the instructor-student e-mail, the listserv communication, and the MOO sessions have been eliminated from all presentation of data.

Steps were also taken in this study to keep participating students' identities unknown. The media used by this on-line class provided the opportunity for a class member to be referred to by three different names: his/her real name, e-mail and listserv name, and MOO name. For this study, the researcher changed each of these names to one common pseudonym for each participant. For example, the original data may show a student whose name is Tom Lithgow referred to as IM123456 @address.com in e-mail and on the listserv, and as TomL_guest in the MOO. In this example, the researcher would use the pseudonym MatthewS to refer to Tom Lithgow in all the data presented. To keep the identity of the professor and the college unknown, the real address of the class web pages and all associated college references were changed. The professor's name in all data presented has been changed to Prof.

In addition to the on-line transcripts used in this study, a student survey was completed during the students' orientation session, which was prior to the first distance education class. Students who were late enrolling and students who did not attend the orientation completed the survey on-line via e-mail with the researcher. Appendix B contains a copy of this survey which consisted of questions about prior experience with
computer-mediated communications, prior participation in distance education classes, age

group, gender, ethnic background, and other factors that may affect student perceptions of

belonging to a community of distance education learners. These questions were asked in

an open-ended manner, so as not to influence the responses of the informants. Forms for

student permission (Appendix C) were also completed at the students’ orientation session

prior to the first class or via e-mail where necessary. As mentioned, if a student chose not

to participate in this study, his/her data were not used.

A debriefing survey (Appendix D) to obtain student perceptions of the course was

distributed via the listserv in week fourteen. Questions were open-ended and the data

were also saved on disk and archived. This survey addressed students’ perceptions of the

norms, expectations, and the construction of their classroom culture/community.

In summary, data sources consisted of a pre-class survey, a debriefing survey, and

electronic transcripts of teacher-student communication on e-mail, the class listserv

postings, and the fourteen MOO sessions conducted during the semester.

Data Analysis

Interactional ethnography is a conceptual framework that can be used to study the

culture of a classroom from both a macro level and a micro level. “Through Interactional

Ethnography the researcher can trace what actions and practices become patterned ways

of being over time, as well as illustrate how these patterned practices are crafted in the

moment to moment interactions of participants” (Putney, 1997, p. 65).

Several different types of data analyses were conducted in this study. Table 6 shows

the analytical tools used and their source. This table also lists both level one and level two

...
tools. Level one tools were created directly from the data; while level two tools were created from the level one tools to facilitate their use. This section will describe these tools and how they were constructed. Chapter 4 will then present findings from these data analyses, providing examples of the data as the tools revealed the characteristics of life in this classroom community.

Table 6

Level One and Level Two Analytical Tools and Their Source

<table>
<thead>
<tr>
<th>Created from transcripts of selected</th>
<th>Level 1 analytical tool</th>
<th>Level 2 analytical tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOO sessions</td>
<td>1... Domain Analysis</td>
<td>1... Indexes of Event Maps</td>
</tr>
<tr>
<td></td>
<td>2... Event Maps</td>
<td>2... Indexes of Potentially Divergent Sub-events</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3... Table of Key Events</td>
</tr>
<tr>
<td>Listservs</td>
<td>1... Domain Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2... Indexes of listserv Postings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3... Table of Key Events</td>
</tr>
<tr>
<td>Instructor-student E-mail</td>
<td>1... Domain Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2... Table of Key Events</td>
<td></td>
</tr>
</tbody>
</table>

Domain and Taxonomic Analysis

Domain and taxonomic analyses were instrumental in looking at the community as a whole from an ethnographic perspective. Members of a community must develop an understanding of the elements of the culture and the relationships among these elements. Domain and taxonomic analyses (Spradley, 1980) were used to identify these elements and
the patterns of their relationships. These two methods, as they were applied in this study, are discussed below.

**Domain Analysis**

"[Analysis] refers to the systematic examination of something to determine its parts, the relationship among parts, and their relationship to the whole. Analysis is a search for patterns" (Spradley, 1980, p. 85). In analyzing the construction of this on-line community, Spradley’s domain analysis was used. This analytical tool seeks to uncover cultural patterns of practice and their relationships within a particular group. It tries to answer the questions of who can do or say what, to or with whom, for what purpose, under what conditions, when and where, and with what outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997). This presumes that one can view the class as acting as a culture (Collins & Green, 1990, 1992). Spradley’s technique organizes the elements of cultural activity into cultural domains. Cultural domains are categories of cultural meaning that include other smaller categories.

As Spradley (1980) indicated, the way to classify the elements of a culture is by asking ethnographic questions. He presented three major kinds of ethnographic questions: broad descriptive, structural, and contrast.

Ethnography begins with broad descriptive questions that seek to discover who is in a social situation, what they are doing and what the physical setting looks like. The researcher then uses these descriptive questions to guide his/her observations and, after analyzing the initial data, moves on to structural and contrast questions. These latter questions help the researcher organize the elements that exist in the data into domains and discover their relationships.
“Every culture creates hundreds of thousands of categories by taking unique things and classifying them together. Domains, as cultural categories, are made up of three basic elements: cover term, included terms, and semantic relationship” (Spradley, 1980, p. 89).

An example of these three basic elements in a domain analysis is shown in Table 7.

Table 7

Example of A Semantic Relationship in Domain Analysis

<table>
<thead>
<tr>
<th>Included terms</th>
<th>Semantic relationship</th>
<th>Cover term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading web pages for the weekly assignment</td>
<td>Reading preparatory materials</td>
<td></td>
</tr>
<tr>
<td>Reading assigned stories from the text</td>
<td>Are stages in</td>
<td></td>
</tr>
<tr>
<td>Reading story-related web pages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading task-related web pages</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 8, the different semantic relationships of domain analyses can be used to investigate many elements of a culture. By grouping like cultural elements (included terms) into cultural domains (cover terms) and identifying the type of relationship that exists among them, the elements observed within the community can be organized and their relationship to the culture can be further analyzed.

As Spradley (1980) suggested, the search for cultural domains in this study was initiated by selecting a semantic relationship as a starting point. After selecting this
Table 8

Examples of Various Semantic Relationships in Domain Analysis

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Form</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strict Inclusion</td>
<td>X is a kind of Y</td>
<td>kinds of sharing, kinds of events, kinds of Big Signs, kinds of interactional spaces, kinds of student choices, kinds of MOO participants</td>
</tr>
<tr>
<td>Function</td>
<td>X is used for Y</td>
<td>ways to test students’ knowledge, ways to get information</td>
</tr>
<tr>
<td>Rationale</td>
<td>X is a reason for doing Y</td>
<td>reasons for leaving the MOO early, reasons for arriving late to the MOO</td>
</tr>
<tr>
<td>Sequence</td>
<td>X is a stage in Y</td>
<td>stages in completing scheduled weekly activities, stages in attending MOO discussions, stages in responding to MOO discussions via listserv</td>
</tr>
<tr>
<td>Means-end</td>
<td>X is a way to do Y</td>
<td>ways to initiate discussion of a reading in the MOO, ways to compensate for lack of face-to-face verbal cues, ways to react to visitors in the MOO, ways to direct conversation to an individual in the MOO, ways to access class resources</td>
</tr>
</tbody>
</table>
relationship, a domain analysis worksheet, similar to Table 7, was created by identifying possible cover terms and included terms that fit the semantic relationship chosen. Table 7, for example, was constructed by asking the structural question: What are all the stages in reading preparatory material?

The search for cover terms and included terms was then repeated for cultural domains using different semantic relationships. Past data were continually reviewed as new data were collected and analyzed and new semantic relationships were revealed. Conducting a domain analysis is a reiterative, ongoing process.

Wherever possible, folk terms such as Big Sign (see Table 8 - Strict Inclusion) were used rather than analytic terms. Folk terms are those names used within the community to label the behavior or domain (Spradley, 1980). When a folk term did not exist, the researcher created a name for the domain or behavior. Spradley refers to these researcher-created names as analytic terms.

**Taxonomic Analysis**

As discussed in the last section, domain analysis was used to organize the elements of the community's culture (i.e., the included terms) into cultural domains. As Spradley (1980) suggested, a taxonomic analysis followed the domain analysis and looked for the relationships among the included terms of a cultural domain. The domain analysis identified the relationship of one included term to the domain. The taxonomic analysis identified the relationship among several included terms in the same domain. This is the major difference between the domain analysis and the taxonomic analysis.

An important feature of taxonomies is that as the different relationships are discovered, different levels of organization can be seen. For example, reading web pages
for the weekly assignment is a stage in the cultural domain of reading preparatory materials (see Table 7). This represents a first level of relationship. Further domain analysis revealed that reading preparatory materials was itself a stage in a larger cultural domain. Reading preparatory materials was a stage in completing the weekly activities and completing the weekly activities was a stage in completing the semester activities.

Table 9 shows a segment of the taxonomy of completing the semester activities. Establishing the relationships among the included terms at the various levels provided an overview of the elements of the culture and relationships that existed within it.

Table 9

<table>
<thead>
<tr>
<th>Reading Preparatory Materials</th>
<th>Are Stages in</th>
<th>Is a Stage in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posting Journals</td>
<td>Completing Weekly Activities</td>
<td>Completing Semester Activities</td>
</tr>
<tr>
<td>Responding to Journals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completing and Submitting Quiz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Instructor Responses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participating in MOO Sessions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responding to MOO Sessions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Organizing the elements of the culture with domain and taxonomic analyses facilitated identifying the attributes of this community that developed throughout the semester. Spradley's domain and taxonomic analyses were used to identify the major activities that occurred throughout the semester and the steps that were accomplished to complete these activities. This provided an ethnographic perspective of the cultural environment within which the actions and interactions of the community members occurred.
Although the examples provided in this section have focused on the activities within the semester, these analyses were also instrumental in identifying other elements of the culture and the relationships among them. See Table 8 for other examples of domain analysis.

**Event Maps**

The next analytical tools to be discussed are the event maps that were created from transcripts of the interactions on selected MOO sessions throughout the semester. These maps show the events that were jointly constructed through members’ interactions. Like the domain and taxonomic analyses, they were an important source of findings in the analysis. They were used to organize activities into phases, sub-events, and events. It was also at this level that the identification of non-verbal techniques employed by participants became more evident.

This first level of analysis of the real-time MOO sessions represents the sequential flow of the activity within the MOO session and oriented the researcher to the overall patterns developing within the session (Putney, 1997). By comparing the events in multiple mappings that occurred throughout the semester, patterns of activity or practice that related to student perceptions and participation were constructed. Events and activities that were identified as key events were recorded in a table for further analysis. (See Tables of Key Events as follows).

Table 10 presents a segment of the event map from the beginning of the first MOO in the semester. This was the first time the members participated in the MOO as a collective. The first column labels the event and the second column indicates the line number(s) within this MOO. The events are divided into sub-events which, in turn, are divided into
Table 10

Segment of an Event Mapping from the Beginning of the First MOO

<table>
<thead>
<tr>
<th>Event</th>
<th>Line no.</th>
<th>Sub-event</th>
<th>Phase</th>
<th>Action</th>
<th>&quot;Potentially divergent&quot; sub-event</th>
<th>Explanation/notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>la. Onset of Community</td>
<td>22</td>
<td>la... Entering the MOO</td>
<td>1-normal</td>
<td>Std logs in</td>
<td></td>
<td>o CarrieM logs in</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2-italics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3-underline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4-bold</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>2a Experimenting with MOO commands</td>
<td></td>
<td>Use Emotes-sits and eats</td>
<td></td>
<td>o Carrie &quot;sits on a bench and eats her pizza&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o Shows she is just waiting for someone else to login</td>
</tr>
<tr>
<td>25-27</td>
<td></td>
<td>1b Getting started</td>
<td></td>
<td>Std logs in</td>
<td>o EmerilF logs in</td>
<td>o CarrieM and EmerilF exchange greetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Std logs in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stds greet each other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28-31</td>
<td></td>
<td>2b Experimenting with MOO commands</td>
<td></td>
<td>Intro @describe</td>
<td>o CarrieM introduces new MOO command</td>
<td>o CarrieM munchs on her pizza and teases EmerilF about wanting some</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Coin new words</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Use Emotes-munches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td></td>
<td>1c Getting started</td>
<td></td>
<td>Std logs in</td>
<td>o Samantha logs in</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>2c Experimenting with MOO commands</td>
<td></td>
<td>Use Emotes hands</td>
<td>o CarrieM hands some of her pizza to EmerilF</td>
<td></td>
</tr>
</tbody>
</table>
phases and actions. The members in this community did not refer to nor label their own behavior within the MOO. Analytic terms (Spradley, 1980), such as Getting Started and Onset of Community, identify events, sub-events, and phases within the event maps.

The labels in the event, sub-event, and phase columns are sequenced with both a number and a letter. The number represents the numerical sequence of the event. The letter represents the occurrence of the event in the transcript. For instance, in line 22, 1a represents the first time the phase of Getting Started has occurred; in lines 25-27, 1b represents the second time the phase Getting Started has occurred, and in line 32, 1c represents the third time Getting Started occurred.

Phases are composed of related actions. Sub-events are composed of related phases and are marked by a change in the focus of the phases. As indicated in the phase heading, phase 1 is shown in normal font, phase 2 is italicized, phase 3 is underlined, and phase 4 is bolded. This pattern of marking holds true for the event and the sub-event columns also. This facilitated locating interspersed events, sub-events, and phases throughout the mapping.

Occasionally a participant posted a message about an entirely new topic. This new topic was completely unrelated to the current or past conversations and could potentially move participants off-topic. The Potentially Divergent Sub-event (Green & Wallat, 1979) column was used for any posted dialogue that was unrelated to the current or any previous topic. On occasion these postings/sub-events were taken up by the participants and the focus of the conversation changed. Usually, potentially divergent sub-events were ignored and the ongoing conversation continued as if uninterrupted. Entries in the last column,
Explanation/Notes, provided additional data on the action that occurred and were used for research notes on the situation.

The segment of the mapping presented in Table 10 shows that the Onset of the Community began with members *Entering the MOO* and performing actions necessary for Getting Started (i.e., logging in and greeting each other). The sub-event of Entering the MOO in the first 33 lines of the transcript had two phases - 1a Getting Started and 2a *Experimenting with MOO commands*. For example, after the student(s) logged in, one began experimenting with the MOO commands.

She used the `emote` command to build an imaginary scenario of eating and sharing her pizza, she introduced the new word, *kewl* (cool), and she introduced the `@describe` command to the other student who was logged in. This level of mapping introduced the researcher to the actions of the participants in the MOO and made it possible to identify emerging patterns. The intertwining of the two phases was indicative of a common pattern of communication in the MOO in this community and was an accepted practice.

The concept and design of these mappings were based on studies conducted by the Santa Barbara Classroom Discourse Group, particularly the studies of Putney (1996, 1997) and Floriani (1997). The foundation of these mappings relies on the theories and methods of Spradley (1980), Green and Wallat (1979) and Green and Meyer (1991).

These mappings also represent a form of domain analysis (Floriani, 1997). The events taken as a whole represent a sequence relationship (i.e., *X* is a stage in *Y*) of the stages/events in attending and participating in the MOO discussion. Entries in each column represent a strict inclusion relationship (i.e., *X* is a kind of *Y*) in the interactions of the participants. Onset of Community is a kind of event and Getting Started and
Experimenting with MOO commands are kinds of phases within this event. Entries in each row represent semantic relationships, such as strict inclusion (i.e., X is a kind of Y) and means-end (i.e., X is a way to Y). Students logging in is a way to participate in Getting Started, Entering the MOO, and the Onset of Community event. Getting started is a kind of phase within Entering the MOO and Entering the MOO is a kind of sub-event within Onset of the Community.

This first level of mapping contained threaded dialogue involving multiple topics as the conversations on-line unfolded. This feature of on-line synchronous communication tended to make the cohesion of individual events, sub-events and phases hard to discern. To assist the researcher in focusing on the events and their component sub-events and phases, two types of indexes were created from these event maps. Descriptions of these indexes of event maps and indexes of potentially divergent sub-events will be presented in the following sections.

**Indexes of Event Maps**

This second level of mapping, created from the event maps of the MOO sessions, also shows the events, sub-events, phases, and actions. However, the design of these indexes removed the multiple occurrences of events, sub-events, phases, and actions and made the analysis and interpretation of the events less complicated by eliminating the interspersed multiple-topic conversations.

The indexes served as an orienting device for the MOO event maps to look for common patterns of practice across events that reflected cycles of activity within this community. Cycles of activity are composed of events in different time frames that are tied together (Green & Meyer, 1991; Putney, 1997). Table 11 illustrates a segment of the
<table>
<thead>
<tr>
<th>Event</th>
<th>Line No.</th>
<th>Sub-event</th>
<th>Phase</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1a. Onset of Community | 22 | 1a... Entering the MOO | 1a Getting started | - Student logs in  
- Students exchange greetings  
- Verify MOO postings okay  
- Verify in right MOO |
| 24 | | 2a Experimenting with MOO commands | - Use emotes  
- Coin new words  
- Use @ commands |
| 124-141 | | 3a Process-oriented Q & A’s | - Connection Q&A’s  
- Listserv Q&A’s  
- MOO Q&A’s  
- Getting name right with @name |
| 762-763 | | 4a Curriculum Task-oriented Q & A’s | - Assignment Q&A’s  
- Group Q&A’s  
- MOO response Q&A’s |
| 241-246 | 2a..Discussion about babies/family | 1a Personal instructor baby/family Q & A’s  
(Instructor sharing) | |
| 254-255 | | 2a Std-focused baby/family Q & A’s  
(Student sharing) | |
| 2a. Discussion of Young Goodman Brown (YGB) | 334-343 | 1a Starting on-task behavior | 1a Choosing the reading | |
| 367-414 | 2a. Analyzing YGB | 1a. Dream or not? | |
| 421-426 | | 2a. The symbolism of the pink ribbon | |
| 436-459 | | 3a. YGB’s wife - Faith, innocence, and meaning of the story | |
index map for the first MOO session and shows the first two events that occurred in this community.

In this index of the mapping, the representation of the events, line numbers, sub-events, phases, and actions follow the same criteria as for the original mapping, but the intertwining of the multiple occurrences of events and their components has been eliminated. At this level of mapping, it is easier to see the various events, the sub-events that compose them, and the phases and actions that are a part of each sub-event. For instance, this segment of the mapping index indicates two of the patterns of events that occurred in the MOOs: Onset of Community and *Discussion of the Weekly Reading, Young Goodman Brown*. The line number column helped the researcher to visualize the patterns in a more concise manner without the distractions of the overlapping phases. For example, the interruption in the sequential ordering of the line number with 4a Curriculum task-oriented questions/answers highlights the late arrival of a student who is, at lines 762-763, undergoing the actions constituting the Entering the MOO sub-event. This pattern of late arrivals became an accepted pattern of practice within this community. The majority of students arriving late provided other members with an explanation as a courtesy. In Chapter 4 more of the patterns of practice revealed by the mappings of the MOO sessions are discussed.

**Indexes of Potentially Divergent Sub-events**

These indexes were also created from the event maps. They served as an orienting device for the MOO event maps to look for sub-events that were in conflict with the current or past dialogue and to view how they affected the roles and relationships, norms, and expectations of the members. These indexes used the same format as the indexes of
the event maps, but only listed those actions that were contrary to the current or past
dialogue. On occasion, these potentially divergent sub-events developed into the main
topic of the conversation. However, many were merely brief interruptions.

Indexes of Listserv Postings

After the event maps and the subsequent indexes of event maps and potentially
divergent sub-events, the next analytical tools to be discussed are the indexes of the
listserv postings. Table 12 shows a segment of an index of the listserv postings from the
first week of class. The subject, sender, date, and time of the listserv postings were
automatically provided when each message was received on-line by the researcher. An
image of these data were captured and enhanced to include the starting line number of
each posting, type of posting (i.e., journal, response, etc.), recipient, and researcher
comments. This index was used to identify the type, timing, and frequency of postings and
to locate key events for recording in a table of these selected interactions. All references
to students not participating in this study have been removed. A discussion of Tables of
Key Events follows.

Tables of Key Events

The tables of key events were constructed from the transcripts of selected MOO
sessions, listserv postings, and instructor-student e-mail communication. How the
culture’s patterns of practice were constructed by the moment-to-moment interactions of
its members was investigated by applying discourse analysis to key events chosen during
the ethnographic phase of this study. Cases chosen by the researcher are, by nature,
subjective, and represent a small part of the discussions of this semester-long
communication. According to Ochs (1979), constructing transcripts (in face-to-face

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Table 12

<table>
<thead>
<tr>
<th>Subject</th>
<th>Sender</th>
<th>Date &amp; time</th>
<th>Starting line no.</th>
<th>Type of posting</th>
<th>Recipient</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test to Confirm Connection</td>
<td>CarrieM @address.edu</td>
<td>1/23/99 7:00PM</td>
<td>1</td>
<td>Other</td>
<td>The List</td>
<td>Confirms Connection</td>
</tr>
<tr>
<td>Journal wk1</td>
<td>EmerilF @address.edu</td>
<td>1/24/99 7:23PM</td>
<td>10</td>
<td>Journal</td>
<td>The List</td>
<td></td>
</tr>
<tr>
<td>Journal Entry for 1-26-99</td>
<td>CarrieM @address.edu</td>
<td>1/24/99 7:57PM</td>
<td>38</td>
<td>Journal</td>
<td>The List</td>
<td></td>
</tr>
<tr>
<td>Re: response to Goodman Brown Journal</td>
<td>CarrieM @address.edu</td>
<td>1/24/99 8:38PM</td>
<td>52</td>
<td>Response</td>
<td>EmerilF</td>
<td></td>
</tr>
<tr>
<td>Re: response to Goodman Brown Journal</td>
<td>EmerilF @address.edu</td>
<td>1/24/99 9:26PM</td>
<td>85</td>
<td>Response</td>
<td>CarrieM</td>
<td></td>
</tr>
<tr>
<td>txt.journal for clarity? I hope</td>
<td>CarrieM @address.edu</td>
<td>1/24/99 9:37PM</td>
<td>154</td>
<td>Journal</td>
<td>The List</td>
<td>Used Emeril's suggestion</td>
</tr>
<tr>
<td>test from Prof</td>
<td>Prof</td>
<td>1/25/99 8:53AM</td>
<td>168</td>
<td>Other</td>
<td>The List</td>
<td>Testing e-mail addresses</td>
</tr>
<tr>
<td>Re: Journal entry #1</td>
<td><a href="mailto:AliceA@aol.com">AliceA@aol.com</a></td>
<td>1/25/99 12:28PM</td>
<td>182</td>
<td>Journal</td>
<td>The List</td>
<td></td>
</tr>
</tbody>
</table>
studies), is a theoretical act. This is also true of identifying key events. "What is included, what is left out, and how talk and actions are represented in a transcript is up to the theoretical position of the analyst" (Putney, 1997, p. 106).

As discussed earlier, the two types of on-line media used by the participants in this study were asynchronous (e.g., e-mail and listserv postings) and synchronous (e.g., MOO sessions). The interactive nature of the synchronous communications provided conversations that were more akin to face-to-face dialogue than the asynchronous communications. This resulted in slight differences in how the tables were designed. These two types of media communication and the tables that were created for each are discussed next.

Tables from Synchronous Communication

This table was constructed from the transcripts of the MOO sessions using the event maps to guide the researcher in choosing events. It was used for the discourse analysis to investigate member interactions as they occurred on a moment-to-moment basis within the various MOO sessions. It was useful in identifying techniques employed by the participants to compensate for the lack of visual and non-verbal communication present in face-to-face dialogue. It also helped to identify participant techniques used in this community to direct messages to individual persons when group communications were seen by all. These techniques will be discussed further in Chapter 4.

The discourse analysis conducted on these exemplar messages investigated the community on a micro level. After the overall ethnographic features were discovered through the other analytical tools, the discourse analysis was applied to identify the
construction of insider knowledge that built the norms and expectations, rights and responsibilities, and roles and relationships of the community and its members.

A key event from the MOO session in the fourteenth week of class is presented in Table 13. Each entry in this table provided the source of the data (e.g., MOO Week 14), the date of the occurrence, the line number, the name(s) of the member(s) communicating, and the content of the communication. Columns were provided for recording non-verbal substitutes used, researcher comments, and coding.

In addition, each entry was broken down into its component message, action, and interaction units (Green & Wallat, 1979; Floriani, 1993; Putney, 1996, 1997). The message units, action units, and interaction units within each event are indicated as follows. Each line number denotes a message unit. Action units are separated by a single underline. Interaction units are separated by a double underline. To keep the MOO's intertwined dialogue intact, the message units being analyzed are foregrounded in bold. The intertwined, overlapping dialogue is gray and backgrounded when focusing on the key event under analysis.

Message units were the smallest unit identified. In face-to-face discourse, message units are "linguistically marked by contextualization cues" (Green & Wallat, 1979, p. 164). Both verbal and non-verbal cues signal to the listener the boundaries of the smallest unit of what is being transmitted as a message. In on-line discourse, the non-verbal cues and the voice intonations that signal the boundaries of a message are absent. However, verbal pauses, indicated by the punctuation (i.e., commas, dashes, and periods), signaled the message unit boundaries in these messages. Where no punctuation was included in the message, the message units were defined by the end of the words transmitted. When the
Table 13

Table of Key Events from Week 14 MOO Session

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Dialog MOO week 14 Lines 326-341*</th>
<th>Comments</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>MarthaC</td>
<td>001. walter mitty would have done good in the war</td>
<td>(While discussing the story, a student seems to make an insider joke)</td>
<td>Humor</td>
</tr>
<tr>
<td></td>
<td>002. &gt;Venus_Guest teleports in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DonnaP</td>
<td>003. nods to MarthaC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof (to)</td>
<td>004. guess we can't tell until we know them afterwards. &quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BettyA</td>
<td>005. Too funny MarthaC</td>
<td>(BettyA acknowledges original remark with - Too funny)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>006. BonnieL teleports in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof</td>
<td>007. walter mitty</td>
<td>(Intertextual reference because tying one story to another)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>008. --thinks--</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>009. he would have done well in a war</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BarbaraK</td>
<td>010. yes,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>011. MarthaC,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>012. I'll bet Walter Mitty been a five star general,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>013. and had a thousand confirmed kills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TammyK</td>
<td>014. hi</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>015. Bonnie</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BarbaraK</td>
<td>016. in his own mind.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>017. A satellite from the 'Keep space clean' department picks up Deed to get it back to the right orbit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BettyA</td>
<td>018. You got it BarbaraK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prof (to)</td>
<td>019. exactly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BettyA (to BarbaraK)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Each line number equals a message unit. Message units tie as an action unit. (Single line separates action units.) Action units tie as an interaction unit. (Double line separates interaction units.)

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sender paused in the communication and sent the words he/she had typed, the message unit was considered bounded.

Message units were then grouped together into action units (Putney, 1996) which “signal what is happening, what is in the making of the message” (p. 133) and represent the meaning communicated by the speaker. Action units are a way to show how a speaker ties “individual bits of talk (message units) together to accomplish an action (e.g., to ask a question, to give directions, etc.) within turn” (Putney, 1997, p. 9).

As the speakers in the communication took turns exchanging groups of message units, interaction units were formed. “Interaction units illustrate the clusterings of messages which signal interaction on the part of speakers. . . The end of one interaction unit and beginning of another can then be determined from the completion of an actual turn-taking” (Putney, 1996, p. 133). “An interaction unit, then, is a chain of action units that include exchange of turns or completed topics within a turn” (Putney, 1997, p. 107).

As mentioned earlier, the tables of key events selected from the MOO sessions (synchronous) differed from those tables created for the asynchronous communication of the listserv and the e-mail communication. The following section presents and describes how the tables of key events from the asynchronous communication were created and used.

Tables from Asynchronous Communication

These tables were created to investigate patterns of interaction that occurred in the community’s listserv and instructor-student e-mail communications. They contain subjectively selected communications that were chosen to exemplify key events and dialogue that illustrate how the attributes of this on-line class were being constructed.
They represent selected parts of the e-mail and listserv transactions and are, therefore, taken out of the whole to investigate in a more detailed manner.

The e-mail communications were the only private interactions existing in this study and revealed patterns of interaction, roles and relationships, and interactional spaces occurring between instructor and student. The listserv communications included transcripts of the interactions of members, both instructor and students, as they posted and responded to each other’s journals and posted other messages for the whole class to read.

Several different patterns of communication were present in the listserv and e-mail transcripts. The tables of asynchronous communication discussed in this section were designed to accommodate these different patterns, which were basically a variation of the number of participants (one, two, or three) and the method of the response. The response was either an entirely separate part of the message or it was intertwined within the original message. These variations are discussed below.

The simplest form of communication was the original student posting of a journal to the listserv. This form consisted of only one transmission. It did not constitute an interaction with other members, except for the fact that all postings to the listserv were available to all members of the class and could be read and responded to by anyone. Single transmissions of this type were not presented in the tables per se. However, they were incorporated as part of interaction units that built upon these transmissions as members responded to them. The analytical equivalent to this type of communication in the e-mail medium occurred when a student originally sent a message to the instructor. The only difference between the e-mail and the listserv communication at this level was that the e-mail was private. It was not seen nor available to anyone other than the
intended addressee. The second pattern of communication existed when only two members of the community interacted. This occurred when a student responded to the original journal posting of another, the instructor responded to a student’s e-mail, or the instructor commented on an original student journal posting.

The third pattern of communication existed when a third member entered the communication. This occurred when a student commented on the instructor’s comment on an original student journal posting or when the instructor commented on a student’s response to an original student journal posting.

When there was more than one participant in the conversation, it was common practice for the responder to include the message or messages being responded to in the transmission. This provided two different ways for the second and/or third participant’s message to be provided. The respondent could put his/her response at the beginning of the message and the message to which they were referring at the end of the message. Alternatively, the messages could be intertwined. The technique used most commonly by the instructor in the listserv was to incorporate his comments within the original posting so that the messages were intertwined. This provided a more conversational interaction and facilitated identifying the parts of the original message to which the instructor was commenting.

A key event from the listserv postings in the first week of the class is presented in Table 14. Each entry in this table provided the source of the data (i.e., listserv, week 2), the date of the transmission (bolded), the line numbers within the data source (underlined), the name(s) of the member(s) communicating, and the content of the communication. Although this table only shows the dialog of those communicating, it must be remembered
Table 14

Excerpt from Table of Key Events from Listserv Week 2

<table>
<thead>
<tr>
<th>Sender/date/line numbers</th>
<th>Comments</th>
<th>Prof/date/line numbers</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal(normal) Reply(italicized)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LindaM/Jan27 4430-4453</td>
<td></td>
<td>Prof/Jan28 4418</td>
<td></td>
</tr>
</tbody>
</table>

001 The Birthmark, by Nathaniel Hawthorne

002 The idea I see expressed here is a failure to be content with what one has, and to look/ask for more than is needed.

003 Georgiana was lovely.

004 Had Aylmer left it alone, he and Georgiana would probably have had many happy years together.

005 Georgiana lost her life, Aylmer lost his wife — all over little or nothing.

006 The birthmark did not make her ugly, did not detract from her intelligence or her abilities.

007 My question would be should we be content with what we have?

008 I agree that Aylmer shouldn’t have pushed his wife to have the birthmark removed, and that he should have been more accepting of his wife.

009 Instead, Aylmer left it alone, he and Georgiana would probably have had many happy years together, raised a large family and been content with their lives.

010 Summary

011 As always, I’ll be playing the devil’s advocate in my responses.

012 My question would be should we be content with what we have?

013 Professor explaining his role

014 Explaining his answer

015 Reiteration

016 Again though, do we just stop where we are and say, “Okay,”

017 good enough.

018 No more”?

019 Question

020 Signature

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that communication on the listserv was public. That is, listserv messages were sent to everyone on the listserv subscriber list and could be accessed and read by all of the class.

As in the table of synchronous key events presented in the last section, each entry in this table was further broken down into message units, action units, and interaction units. The method of identifying each is the same as for the synchronous communication. Message units are sequentially numbered in bold and tie together to make an action unit. Action units are separated by a single underline. Action units combine to make interaction units. Interaction units are separated by a double underline. Because of the asynchronous style of communication, the action units, message units, and interaction units vary slightly from that of the synchronous communication presented in the previous section. Message units are still represented by a sequential line number and groupings of message units still form action units. However, a series of action units in these communications can extend for the entire dialogue of each speaker without interruption by the other. The asynchronous nature of the communication necessitates that senders post their entire thought (i.e., action units) before another speaker can answer. The interaction units are composed of both the initial message and the response because turn-taking must be completed as part of an interaction.

Providing individual columns for each participant in the communication worked well when responses were incorporated in their entirety at the beginning of the message and the message being responded to was at the end of the message. However, for the communication in which the respondent intertwined his/her response within the original message, another feature was added to this table. As Table 14 shows, the respondent's interspersed comments are shown in the flow of the communication where they occur (i.e.,
within the original message). To facilitate separating the original message from the respondent's comments, the latter is presented in italics.

This section of the methodology has addressed, in detail, the various methods and tools of the data analysis. The following section presents the various methods of triangulation employed that served to support the researcher's methods, findings, and decisions within this study.

**Triangulation**

Triangulation of the data was accomplished in several ways. First, various kinds of data collection were used in this study "so that data collected in one way can be used to cross-check the accuracy of data gathered in another way" (LeCompte & Preissle, 1993, p. 48). Student surveys, instructor-student e-mail, the debriefing survey, and communication on both the class listserv and during the MOO sessions were used to triangulate the data. For example, the student perceptions of the community and the processes that built it, which were obtained from the debriefing survey, served to triangulate the researcher's data analysis of interactions on the various media used throughout the semester.

In addition to using various data sources, triangulation was achieved by discussing and reviewing the findings and data of this study with others. First, it was discussed and reviewed with a fellow researcher. This researcher not only provided another perspective, but was familiar with the college setting of the study, ethnography, and on-line education at the postsecondary level. Other consultants were members of the College of Education faculty at a nearby four-year university. They reviewed and discussed the data and data
analysis with the researcher throughout the study. Their expertise and knowledge of computer-mediated communication, postsecondary education, distance education, and the use of interactional ethnography in the classroom were instrumental in ensuring the researcher's data collection and analysis yielded findings that were reliable, well-founded, complete, and pertinent.

The instructor of the on-line Survey of Literature class also provided triangulation by reviewing the findings and analyses of the researcher. He has had extensive experience providing on-line and traditional education and has researched, written, and presented many papers on distance education. As a member of this class's community, he provided an excellent source of feedback on the perceptions, analysis, and findings of the researcher.

Interactional ethnography itself provided a method of triangulation. The interactional ethnographic methods used viewed the data from both an ethnographic perspective (macro level) and a sociolinguistic perspective (micro level). After identifying an insider's knowledge of what was constructed by the community over time, sociolinguistic analyses then provided a closer look at the discourse to discover how this knowledge was constructed.

Interactional ethnography seeks to answer the guiding questions of who can do or say what, to or with whom, for what purpose, under what conditions, when and where, and with what outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997). The methods used supported the macro-level answers to these questions with the members' own moment-to-moment discourse. This reinforced the findings of the analyses and thus was another method of triangulation.
Summary

This chapter served to identify the environment of the study in order to orient the reader to how the study was conducted and under what conditions. It presented data on the research design used, the participants involved, the materials available, the methods of data collection, and the methods and tools of data analysis.

The research design was based on the qualitative methodology of interactional ethnography. Interactional ethnography is based on the concept that each classroom is a culture or community in which students and teacher interact to jointly construct what is important within the classroom, to determine what counts as knowledge, and to create the opportunities to learn within these classroom interactions. Interactional ethnography goes a step beyond an ethnographic study of a culture/community.

This conceptual framework provided the organizational approach of first looking at the on-line community under study at a macro level to find the norms and expectations, roles and relationships, and patterns of practice that identified this on-line community to its members. After identifying what attributes of the classroom community were constructed on an ethnographic level, the methodology sought to identify how the discourse built these attributes by the interactions of the members of the community.

The participant section identified who was involved in the study. Thirty-seven of the fifty-five students enrolled in an on-line postsecondary freshman level Survey of Literature class participated in this study. These students represented both genders, various age and ethnic groups, and a variety of experiences and concerns. See Table 3, Ethnicity, Gender, and Age Group of the Participants within the preceding section for more data.
The materials used within this study were also discussed in this chapter. With the exception of a pre-semester orientation, all other class communication was on-line. The on-line materials used within this class included the World Wide Web, a class listserv, e-mail, and MOO sessions. The methods of data collection discussed in this chapter included a pre-class survey, a debriefing survey, and electronic transcripts of instructor-student e-mail, class listserv, and MOO communication.

In the data analysis portion of this chapter, the analytical tools used were identified and discussed. Table 6 shows the level one and level two analytical tools used and how they are related to the various data collected. Event maps, domain and taxonomic analyses, tables of key events, and indexes of event maps and potentially divergent sub-events were individually discussed. In the next chapter, the results of the analyses and the findings of this study are presented.
CHAPTER FOUR

LIFE IN THE VIRTUAL CLASSROOM COMMUNITY

Life in the classroom is a complex set of interrelationships and understandings that must be acquired by the members who are to exist in that classroom environment. Students wishing to be insiders must know who can do or say what, to or with whom, for what purpose, when and where, under what conditions, and with what potential outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997). This study investigated how an on-line classroom constructed these patterns of activity without the use of face-to-face interactions.

The overriding research question addressed in this study was: How do the interactions of a class's participants over time lead students to define themselves as part of a distance education community? This question was subdivided into three research questions:

1. How do the interactions of the participants in an on-line classroom construct the social culture of a distance education classroom?

2. Are there any particular on-line activities or features that compensate for the lack of visual and non-verbal interactions that are used in traditional classrooms?

3. What other environmental, pedagogical, or demographic factors play a role in construction of the distance education class' social environment?

Findings of the data analyses follow, organized by these three research questions.
Constructing the Social Culture of a Distance Education Classroom

The social culture of this classroom was created by the over-time interactions of the class participants. The patterns of practice that were constructed from the ongoing activities of the class served to identify the community that developed in this on-line environment. The participants in this community met the criteria for membership put forth by Collins and Green (1990). They:

(a) acquired knowledge of the meaning of the words, actions, and objects of the classroom; (b) learned to predict the events that would occur; (c) came to understand the norms and expectations for participating in these events; (d) were able to determine the roles and relationships among members of the group and (e) fulfilled the rights and obligations of group membership. (Collins & Green, 1990, p. 73)

In order to answer this first research question, interactional ethnography was used to investigate the interactions within this on-line class. This methodology enabled the researcher to view the community from both a macro level and a more focused micro level. Interactional ethnography combines the anthropological theory of culture (Spradley, 1980), which provides a methodology for investigating the culture over time, with interactional sociolinguistics (Green & Meyer, 1991; Green & Wallat, 1979; Gumperz, 1982) which provides a more focused analysis of the moment-by-moment interactions of the culture.

The ethnographic analyses revealed the patterns of life in the classroom that were built by the members' actions and interactions with class resources and each other throughout the semester. The interactional sociolinguistic analyses revealed how these patterns
of actions, interactions, and use of resources were created in and through the discourse
(Green & Dixon, 1993; Tuyay, Jennings & Dixon, 1995).

This perspective of classrooms as cultures and learning as a social activity drives the
investigation of this community. Understanding the actions and interactions that
constructed the norms and expectations, roles and relationships, and understandings of the
meaning of words, objects, and actions within this community requires a perspective that
this development of community is continuous, the events occurring in-the-moment are
historically related to both past and future events (Collins & Green, 1992).

Interactional ethnography provides a means to examine this continuity of experiences
within the community by: identifying the structure of the activities that occur over time
(i.e., cycles of activity), looking at daily life to understand meaning construction and how
shared understanding is established (i.e., onset of community), and identifying the cultural
elements and the interrelationships among them over time by making these connections
(i.e., patterns of practice and the interactional spaces) (Collins & Green, 1992).

Several terms specific to a social constructionist perspective that were instrumental in
constructing the social and academic dimensions of this on-line classroom will be used
throughout this study: cycles of activity, patterns of practice, interactional spaces,
interertextuality, and intercontextuality. These terms were discussed in Chapter 2, are in
Appendix A, and will be explained again when encountered in the text.

This study’s findings are reported relating to the identification and completion of the
cycles of activity (i.e., the semester and weekly activities), the Onset of Community (i.e.,
the coming together of the collective in a real-time environment), the development of the
patterns of practice, and the interactional spaces constructed by the community members.
Additionally, a discussion of an event in the MOO which challenged the developing norms of this community will conclude this section.

**Cycles of Activity**

Certain activities and events that students accomplish and participate in in-the-moment are tied to other activities and events occurring at different moments in time. "To be part of a cycle of activity, events must be tied together by a common task or serve a common purpose" (Green & Meyer, 1991, p. 150). Cycles of activity are the building blocks that are planned into the curriculum to assist students through various stages of learning.

The structure of the activities which grouped to form the cycles of activity within this class were pre-designed by the instructor. However, both the social structure and how the class members acted and interacted within that social structure influenced what opportunities for learning were available, how these opportunities came about, and what resulted from participating in these weekly and semester activities.

The data collected from this on-line classroom were analyzed to identify the tasks the members were required to complete in order to accomplish the semester and the weekly activities. These analyses served to orient the researcher to the environment within which class members created the social rules for who could do or say what, to or with whom, for what purpose, under what conditions, when and where, and with what outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997).

Spradley's (1980) domain and taxonomic analyses were used to identify these activities and show the relationship among them. See Chapter 3 for more detail on these analytical tools. The domain and taxonomic analyses (Spradley, 1980) revealed several
stages in completing the semester and the weekly activities. Table 15 presents a taxonomy of the semester activities and shows the relationships among the parts of each activity.

Similar to the stages involved when one enters a store to purchase groceries (Spradley, 1980), this class had a sequential series of events or stages that were involved in accomplishing the course requirements for the semester.

<table>
<thead>
<tr>
<th>Preparatory Activities</th>
<th>Completing Weekly Activities</th>
<th>Short Fiction Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscribe to Class Listserv (Listserv)</td>
<td>Reading Preparatory Materials (Web Pages, Text)</td>
<td>Obtain Peer Group Assignment (Listserv)</td>
</tr>
<tr>
<td>Obtain Text (In-person)</td>
<td>Post Journal (Listserv)</td>
<td>Create/Submit for Peer Group Evaluation [Assgn1 (E-mail); Assgn2 (Web Site)]</td>
</tr>
<tr>
<td>Attend Orientation (In-person)</td>
<td>Respond to Journal (Listserv)</td>
<td>Respond to Peer Group Assignments (E-mail)</td>
</tr>
<tr>
<td></td>
<td>Complete/Submit Quiz (Web Pages)</td>
<td>Final Assignment to Instructor [Assgn1 (E-mail); Assgn2 (Web Site)]</td>
</tr>
<tr>
<td></td>
<td>Read Instructor Responses to Journals &amp; Responses (Listserv)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Participate in MOO (MOO)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Respond to MOO (Listserv)</td>
<td></td>
</tr>
</tbody>
</table>

The semester activities were composed of the preparatory activities, the weekly activities, and the short fiction assignments. A further analysis of these activities revealed
the stages in completing each. For instance, column three of Table 15 shows that there were seven stages in completing the weekly activities.

Completing the weekly activities for weeks two through fifteen were basically the same sequential stages/events. The two main differences for each week were the content of the journal required and the focus of the activity for the week, which are shown in Table 16.

Table 16

<table>
<thead>
<tr>
<th>Week(s)</th>
<th>Journal content</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 and 3</td>
<td>Precis Summary</td>
<td>Personality Traits Influencing Actions of the Protagonist</td>
</tr>
<tr>
<td>4 and 5</td>
<td>Descriptive Summary</td>
<td>Personality Traits Influencing Actions of the Protagonist</td>
</tr>
<tr>
<td>6</td>
<td>Submit Four Questions</td>
<td>Protagonist and Antagonist</td>
</tr>
<tr>
<td>7 through 11</td>
<td>Submit Four Questions</td>
<td>Theme</td>
</tr>
<tr>
<td>12 through 14</td>
<td>Submit Four Questions</td>
<td>Point of View</td>
</tr>
<tr>
<td>15</td>
<td>Submit Four Questions</td>
<td>All elements of the stories</td>
</tr>
</tbody>
</table>

The journal consisted of a precise summary (i.e., a brief description of the main ideas of the story) in weeks two and three, a descriptive summary in weeks four and five, or the submission of four questions in weeks six through fifteen. The weekly activities also
varied by the element of the literature that was the focus of the week’s readings (i.e., personality, theme, point of view). This provided the students with the opportunities for learning these elements and building on their interactions and understandings of the previous weeks’ experiences. For example, when members were completing the activities in week seven, they were following the same procedures as they did in week two. The focus in week two was for the students to use that week’s readings and have the opportunity to learn about how personality traits of the antagonist influenced his/her action in the story. In week seven, the student used that week’s readings and had the opportunity to learn about the theme of the stories. Using what was learned about functioning in one context (i.e., week two) and applying it to functioning in other contexts (i.e., weeks three through fifteen) demonstrates intercontextuality (Floriani, 1997).

The events that occurred over time combined to create a cycle of activity (Green & Meyer, 1991). The learning about the components of literature and how to read, discuss, and analyze the aspects of them (i.e., protagonist, theme, etc.) was built upon throughout the semester. The weekly activities served as building blocks to offer the students opportunities to learn the knowledge and skills they needed to complete the semester activities and meet the goals of the class.

Column three of Table 15, the taxonomy of the semester activities, also shows the media used in each of the stages of preparatory activities, completing the weekly activities, and completing the assignments. Each of these media (i.e., listserv, MOO, textbook, etc.) provided different ways for students to interact: private or public communications; on-line or off-line; delayed time or real-time; individual, dyad, small group, or whole group. In any given week, the members of this community interacted in several different media, but
discussed the topic of that week (i.e., protagonist, theme, etc.). Interactions on these different media provided students with various opportunities for learning both social and academic knowledge.

As the students participated in the activities that comprised the stages in the semester and the weekly activities, they came to develop norms and expectations of how to participate in these stages and what roles and relationships were expected of students to complete them.

Students developed norms and expectations of how to participate in the listserv communications and the results of this participation. For instance, they came to understand what it meant to create and post a journal to the listserv and to respond to other students' journals. They also acquired the knowledge of both the methods and the results of reading the instructor's and other student's responses to their posted journals. An insider's knowledge of what it meant to access, complete, and submit the weekly online quiz and to participate in the MOO sessions was also an integral part of belonging to this community. Within each of these stages/events were sub-events that community members built an understanding of over time. They came to know what was involved and expected when participating in these sub-events. For example, to participate in the MOO, students understood how to log in and how to greet each other in the accepted way. They also had common ways of initiating the discussion of and analyzing the readings in the MOO. Even the manner in which the community members reacted to visitors in the MOO, became a common and accepted practice that developed by the members over time. A description of the processes class members followed to access and begin participation in the MOO are presented in Appendix E.
Findings presented in this section have focused on identifying the cycles of activities undertaken by class members to complete the requirements of this on-line class. The physical structure of these activities defined the parameters within which the social interactions of this class occurred. How, within the framework of these cycles of activity, members of this class developed the norms, expectations, roles, and relationships that became common in this on-line environment will be addressed in the following section.

Onset of Community (Putney, 1997)

The construction of the class as a social group begins in a traditional classroom when the teacher and students come together for the first time as a collective. Community building does not end when this first day of class ends, but continues to be shaped and reshaped by interactions among class members throughout the semester (Collins & Green, 1990, 1992; Putney, 1997). In the on-line environment, determining the exact set of interactions that represented the beginning of community construction, resulted in selecting the first on-line meeting of the students and teacher in a real-time environment. This event was chosen as that moment in time when the dynamic process of class members interacting to build the community officially began. The face-to-face pre-semester orientation was not chosen as the beginning of community construction because it did not provide member opportunities for interactions in the environment in which the majority of classroom life came to be conducted, nor were the events resources for all class members.

Prior to the on-line encounter chosen, students had met in the delayed time (asynchronous) medium of the listserv to post and respond to journals and read the instructor's feedback and had completed the weekly on-line quiz via a hyperlink in the web pages. Neither of these media required that all class members be on-line simultaneously.
The synchronous nature of the MOO session required that all who desired to participate had to be on-line at the same time to post to and read the discussion.

The first meeting in the MOO seemed more like the first day in a traditional classroom when students and teacher come together as a collective for the first time. This first encounter represents the beginning of the construction of the culture of this classroom and was only the onset of the dynamic community building process which was to continue throughout the semester. Therefore, these interactions have been labeled the Onset of Community (Putney, 1997).

Event mapping (Green & Meyer, 1991; Green & Wallat, 1979; Putney, 1997) provided a means to look at the activities that were occurring within the semester and weekly activities. These activities, over time, constructed the attributes of life in this community. As Collins & Green (1992) tell us, life in the classroom is holistic. “Life is not viewed as a series of discrete bits but as a continuous ebb and flow of activity in which some events are recurrent, others are closely related or overlapping, and still others are separate” (Collins & Green, 1992, p. 87). For members to build the skills and knowledge needed to participate in this particular on-line classroom they needed to build on events that occurred throughout the semester.

Mapping of the Onset of Community provided a way to see the sequential flow of these in-the-moment events and was the beginning of the over-time patterns of practice that developed. Discourse analyses revealed the intertextual (Bloome & Bailey, 1992; Bloome & Egan-Robertson, 1993; Putney, 1997) and intercontextual (Floriani, 1997; Putney, 1997) relationships that developed. “An example of intertextual relationships would be making a comparison of the actions of one story’s character with the actions of a
different story’s character” (Putney, 1997). The dialogue in Table 17 shows how intertextuality was used when class members were discussing a story of war and compared what they had learned in an earlier event about the character from The Secret Life of Walter Mitty to the actions of the characters in The Things We Carry.

Table 17

Intertextuality in the MOO

<table>
<thead>
<tr>
<th>Interaction Unit</th>
<th>Speaker</th>
<th>Dialogue in Message Units/Action Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students and</td>
<td>Martha C</td>
<td>001. walter mitty would have done good in the war</td>
</tr>
<tr>
<td>instructor jokingly</td>
<td>Donna P</td>
<td>002. (nods to Martha C)</td>
</tr>
<tr>
<td>link Walter Mitty's</td>
<td>Betty A</td>
<td>003. Too funny candice</td>
</tr>
<tr>
<td>daydreaming to</td>
<td>Prof</td>
<td>004. walter mitty</td>
</tr>
<tr>
<td>the soldiers in The Things We Carried</td>
<td></td>
<td>005. —thinks—</td>
</tr>
<tr>
<td></td>
<td>Barbara K</td>
<td>006. he would have done well in a war</td>
</tr>
<tr>
<td>Intertextuality</td>
<td>Betty A</td>
<td>007. I'll bet Walter Mitty would've been a five star general,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>008. and had a thousand confirmed kills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>009. in his own mind</td>
</tr>
<tr>
<td></td>
<td>Prof to Barbara K</td>
<td>010. You got it Barbara K</td>
</tr>
<tr>
<td></td>
<td></td>
<td>011. exactly</td>
</tr>
</tbody>
</table>

In this discussion, students are using the text of their interactions in Week 10 of The Secret Life of Walter Mitty to enhance their current discussion in Week 14 of The Things We Carried. Since text does not just refer to textbooks, intertextual relationships occur when interactions of an earlier event are used to inform interactions in the present event. This intertextuality offers students opportunities for learning by applying what they learned from prior interactions of the group to the current activity.
The intercontextual relationships would be evident when members utilized a context of practice previously constructed to inform a new context. In intercontextuality, members were "invoking the actions and ways of being with text that they took during the prior event, and were applying them to the present activity" (Putney, 1997, p. 87).

Intercontextuality is at work in Table 17 in the way the members were discussing and analyzing the reading in Week 14. They were working with their own knowledge and experiences the same way they had discussed and analyzed prior readings in the MOO. Not only were they discussing the story with apparent humor and an air of familiarity with each other, but they were also working with this understanding through their conversation with the collective in real-time communication.

A segment of the event mapping from the Onset of the Community is presented in Appendix F. This segment begins from the point at which the instructor first joined the students in the MOO (line 96) and ends when the students and the instructor began sharing personal data and experiences about their families and babies (line 246). Chapter 3 contains more detail on the construction of the event maps. Note that the interthreaded dialogue of the MOO session is kept intact.

The first column in Appendix F contains the line numbers of the activity. The second column contains two sub-events that composed the event, Entering the MOO and Discussion About Babies and Family. In column three, these sub-events are further subdivided to represent the phases that combined to create them. The actions constituting each phase are shown in column four. Column five contains the potentially divergent sub-events that occurred and column six contains more detailed explanations of what was occurring.
As shown in Appendix F, the sub-event, Entering the MOO, consisted of three phases that were intertwined throughout the dialogue. The first phase, *Getting Started*, included interactions in which the students and the instructor were logging on and exchanging greetings. The second phase, *Experimenting with MOO Commands*, included the students' actions as they experimented with the environment of the MOO. The third phase, *Process-oriented Questions and Answers*, included the exchange of questions and answers pertaining to how to accomplish some of the activities necessary to meet the requirements of the class, such as how to post journals and/or responses to the listserv and how to post dialogue to the MOO.

Looking closer at the events occurring in lines 96 through 123, one can see two phases (i.e., Getting Started and Experimenting with MOO Commands) and several activities were going on at once. Interactions in the text-based MOO environment were difficult to follow because several conversations were occurring simultaneously. When these simultaneous conversations were posted in a sequential manner, multiple postings were intertwined and shown on the participant's screens.

The instructor logged in and he and the students exchanged greetings. Some of the students were already present in the MOO and some continued to log on as the session progressed. A student checked that her MOO posting was appearing correctly to the others, other students affirmed that it was, and she thanked them for helping. As shown in the following dialogue, the instructor and some students recognized each other from prior on-line classes in which they have participated and they exchanged friendly comments.

```
TerryP
CarrieM
DeeJ

Hiya Prof
present and accounted for Professor
DeeJ teleports in
```
In the next phase of Entering the MOO, Process-oriented Questions and Answers, was intertwined with the actions of Getting Started (i.e., logging in and exchanging greetings). The intertwining of these phases shows how the students continued to log in and exchange greetings with their classmates even as the Process-oriented Questions and Answers phase continued. Shortly after the instructor logged in, the students began asking him questions about posting their journals and responses to the class listserv. The instructor provided possible reasons for the posting problems. During this time students also mentioned new words, such as ISP and the Great Divide. When students asked for definitions of these terms, the instructor and others provided them. Unrelated intertwined postings have been removed from the dialogue that follows.

In lines 170 through 198, the Getting Started phase and the Process-oriented Questions and Answers phase were still intertwined. A student asked whether a fellow student was enrolled in this class. This action was termed potentially divergent because it
was not related to either of the two phases underway, and, therefore, had the potential to
divert the talk to a new topic. However, after the instructor informed this student she was
not enrolled, the normal stream of conversation continued. The instructor also asked a
new log in for information to ascertain she was in the right class and affirmed this as
shown in the following dialogue.

HelenaA teleports in
HelenaA (Exclaims) hey everybody!
Prof (Asks) hi Helena, are you in 111?
HelenaA yes, I'm in 111
Prof (Asks HelenaA) what's your last name?
HelenaA Anderson
Prof (Says to HelenaA) thanks, I found you on
the list

Two other process-oriented actions, which were initiated by more experienced
students, occurred in the following lines. First, a student asked about using the MOO
commands to build objects, such as a chair, for use in the on-line MOO sessions and the
instructor informed her she could not.

CarrieM Oh, are we allowed to build chairs or other
items
Prof not in this space, you can't build. but you can
get a space of your own where you can build
whatever you want

The other action occurred when a student focused the group's attention to a MOO
command that creates a description of the participants, @describe.

CarrieM DeeJ your describe is cute
DeeJ what is my describe?
CarrieM laughs
HildaT what IS a describe?
CarrieM it says you see a player who should type
@describe me as...
In lines 199 through 238, Getting Started continued to be intertwined with the Process-oriented Questions and Answers phase. The instructor entered the MOO command to show a Big Sign to the MOO participants. As can be seen in the following example, this sign was text that was posted in a block-style format.

```
Prof holds up a big sign:

| if you type '@examine player name' any players name, you get to see their description, if they have one. try
| '@examine prof' without the quotes and see
```

In this sign, he explained to the students how to use the `@examine` MOO command to see the results of the `@describe` command. After one student checked her own description and found out that it said she was awake, he explained that that was the default if a description has not yet been created by the `@describe` command. He also told students it was a good idea for them to use the `@describe` command and create descriptions for themselves on-line.

As shown in the following dialogue, students looked at the instructor’s description and joked about it. One student used the MOO `emote` command to show she was grinning and another wanted to set up her own description.

```
CarrieM  (laughs)
DeeJ      wow that is a trip
CarrieM   that was cute Prof
Prof      (Asks CarrieM) and what are you laughing at?
DeeJ      how do I do that, I have never set a description of myself that I can remember
```
The dialogue that follows was an integral component of the beginnings of the personal sharing and friendly atmosphere that identified much of life in this class throughout the semester. Discourse analysis of this example made visible the implications of applying Bloome and Egan-Robertson’s (1993) criteria for intertextuality to a potentially divergent event to ascertain whether or not such an event would change the conversational topic. Based on their criteria, the event must be proposed, recognized, acknowledged, and socially significant before the topic of conversation is changed.

LindaM Prof, somehow that description seems apt
LindaM (Grins)
DeeJ how is the wife prof?
LindaM didn’t you just have a baby ... or did she? or are you due soon?
Prof she’s 32 weeks pregnant and in class right now
LindaM our class?
DeeJ well what are we hoping for?
Prof no, she’s in a class at unlv, in a doctoral program
LindaM good for her!
Prof (First baby) and last—we were hoping for a girl, but we got our second choice
LindaM hey ... ten fingers, ten toes, that’s what counts
GinaJ Hi Prof
DeeJ I only wanted one and five years after the first had another
Prof hi GinaJ glad to see you make it
LindaM hi GinaJ
HildaT hey...boys are great.
I have 4 grandsons
GinaJ Prof is your wife having a boy?
LindaM I had my first grandchild (son) last Monday
CarrieM I have two boys that seem like six
The potentially divergent sub-event that interrupted the ongoing conversation and proposed a new topic of conversation occurred when DeeJ asked: “how is the wife prof?” (The immediately preceding postings have been backgrounded in gray and are included to show how this potentially divergent event interrupted the ongoing conversation.) This event was recognized by LindaM by her posting: “didn’t you just have a baby ... or did she?” The acknowledgement occurred when the instructor responded to the questions: “she’s 32 weeks pregnant and in class right now”. This event was socially significant because the members were building relationships and the topic was a socially acceptable way to establish rapport among the members. This potentially divergent event resulted in a change of topic to a new sub-event, Discussion About Babies/Family. This new sub-event expanded to include the instructor and the students sharing their personal experiences and information about their children and families and ended when a student proposed, with apparent humor, that they focus on what they were in the MOO to learn - analyzing the weekly readings. Over time, these off-task personal conversations fulfilled social expectations, were instrumental in building common bonds among the members, and laid the foundations for student identification with this community of learners.

The data analyses of this segment of the first MOO session revealed how interactions within the events were creating the attributes of this community. Class members were establishing norms and expectations, roles and relationships, and an understanding of the meaning of words, actions, and objects used in this on-line class. Over time the practices that began in this first MOO session came to be part of the group knowledge acquired by the members of this on-line community.
In the following paragraphs, Onset of Community will be discussed with an eye to making visible how the interactions were creating the norms and expectations, roles and relationships, and an understanding of words and objects of this community.

Norms, expectations, roles, and relationships for working together in the MOO were being created prior to the instructor joining the collective. When he logged in, the students were already conversing in the MOO. The instructor made it a practice over the semester to log in before the arranged MOO meeting time and set the software to record the postings in the evening's MOO. He later sent this log to all students via the listserv. He also allowed pre-class time for the students to interact before he logged back in and joined the collective conversation.

After the instructor joined the students, the ways they would work together in the MOO began to take shape. The norm and expectations of entering the MOO included logging in and exchanging friendly greetings with those already in the MOO. Another norm being established was the way questions were posed and answered. Students were willing to ask questions and provide answers to others. In this first group meeting, students asked questions about their postings, ISP, the Great Divide, and computer connection problems. All postings were seen by the group. The instructor and students alike were free to respond to these questions. Both the new terminology and the problems were intertwined in this part of the MOO.

DeeJ  I seem to be having trouble posting responses to the journals, I do not remember having so much trouble before, what am I doing wrong?

Prof  I remember seeing a couple from you. the mail server wasn't working well last night. I think that might have been the problem
Students were developing an understanding of the words, actions, and objects of the classroom as they interacted in the MOO. As students posted messages to the MOO and tried out various emoticons, emotes, and commands such as @describe, they came to see the results of their actions in this on-line environment. As they interacted and built new understandings such as these, they were creating a language of the classroom (Lin, 1993). Language of the classroom, as defined by Lin, is a “socially and interactionally constituted system of discourse and social actions constructed through the actions and interactions of teachers and students” (p. 370).

Within the Onset of Community was the first use of a Big Sign by the instructor. Throughout the semester he used a Big Sign as a signal to direct students’ attention to a topic and to provide them with information. How members built common knowledge of the norms and expectations regarding this signal and the roles and relationships of the instructor and the students when the Big sign was used will be discussed in the Patterns of Practice section.
The instructor played the role of facilitator to the students' learning. Although the instructor did set the rules (i.e., no building chairs in this MOO), he encouraged students' use of the MOO commands that enabled them to build rapport and understanding (i.e., @help, @examine, and @describe). Thus, the instructor provided an opportunity for the students to learn by encouraging experimentation with MOO commands.

The instructor also signified that changing each student's name in the MOO to a recognizable one was important. When students first logged in, the MOO software assigned each a machine-generated name, such as Jupiter_Guest or Leo_Guest, but the instructor needed to know who was participating to give proper credit for attending. He questioned a student's identity when he did not recognize her and then verified she was enrolled in the class. Students observed this instructor-student interaction and saw that he was cognizant of who was present and participating in this session.

Another event reinforcing the importance placed on changing student names occurred throughout lines 275 to 507. Although changing her name was difficult, with the help of the instructor and her peers, she succeeded. As is common in the MOO, this dialogue was intertwined with other postings. Line numbers have been retained in this example to show the number of intervening postings that occurred during this event.

```
275. >Leo_Guest teleports in.
356. >Leo_Guest hi bonnieL
371. >Leo_Guest I didn't really understand goodman brown.
406. >Leo_Guest what about the man knowing his grandfather?
415. >Prof (Asks Leo_Guest) who is that? can you get your name changed?
417. >Leo_Guest how?
420. >GinaJ @ name ... Your name
427. >GinaJ Without the quotes and dots
```
Over time, changing one's name became a common pattern of practice for students to complete when they first logged into the MOO.

The norm and expectation of working collectively in a light, friendly environment in the MOO sessions was also initiated in this first MOO meeting. The students and the instructor joked about being on-line together before and began to build the language of the class (Lin, 1993) by using emotes (e.g., grins), emoticons (e.g., :o), and acronyms (e.g., lol, laughing out loud) to convey body language, facial expressions, and moods.

There was a friendly, open, personal atmosphere established in this first MOO session that over time built trust among the collective and led the students and the instructor to share their personal situations, feelings, thoughts, and concerns openly. The development of patterns of sharing in both off-task informal dialogue and on-task analyses of the readings will be discussed further in Patterns of Practice.

An understanding of the process of how to participate in the MOO sessions was also developed. Building on these first MOO interactions, the class members over time developed an understanding of how to participate in the on-line real-time interactions of the MOO. These insiders learned how to interact in the multiple conversational floors that were the norm in the MOO sessions. Communication in the MOO contained interwoven conversations that on occasion consisted of four or five distinct conversational strands. Members of this community developed an ability to understand these divergent trains of

---

112
481. >Leo_Guest  leo is TammyK but I can't change it
487. >Prof (To Leo_Guest) type '@name
TammyK' without the quote marks
488. >DeeJ type @name and then your name
503. >TammyK thanks!
507. >Prof  good work Tammy
thought. This would have been very difficult for outsiders unaccustomed to the
established patterns of communication on the MOO. The following exemplar from MOO
communication in week 15 demonstrates the interweaving of conversations which was
common to the majority of interactions on the MOO. Roman Numerals are used to
denote the different conversational strands, I, II, etc.

254. >MarthaC says, “prof, how come we didn't read 'a rose for
255. emily'? I thought that story was every english teacher's favorite” I
256. >prof says to HildaT, "that's a good point" II
257. >CarrieM says, "but when the girl said the sentence about the wind
258. >being quiet" III
259. >prof says, "bye BettyA"
260. >TammyK says, "goodnight DeeJ"
261. >BettyA has disconnected.
262. >The housekeeper arrives to remove BettyA IV 263. >CarrieM says, "HildaT that was an excellent way to describe it" II
264. >DonnaP asks, "didn't we read that one last semester?"
265. >prof says to MarthaC, "everyone's but me I think. I've never
266. >like it all that much is about all I can say. I'm selfish in that I
267. >set the course up around stories and writers I like" I

The above example shows four topically different conversations being conducted
concurrently. The first conversation is discussing reading A Rose for Emily. The second
is referring to an earlier student comment made regarding the weekly reading. The third
conversation adds a comment to the earlier discussion of the weekly reading. The fourth
conversation occurs as students and the instructor exchange farewells and students leave
the MOO session. Community members over the semester developed the ability to follow
these interwoven conversations and they came to be accepted as the normal way to
participate in the MOO sessions.

In summary, several important characteristics of this community were being
established and shaped in the first collective meeting in the MOO. These norms and
expectations, roles and relationships, and knowledge of meanings of words and actions for working together in the MOO included:

- norms and expectations for ways questions were posed and answered and the roles and relationships of instructor and students in these situations;
- norms and expectations for entering the ongoing conversations in the MOO (i.e., exchange greetings as new member logged in);
- norms and expectations for naming oneself was marked by the instructor as important and required;
- norms and expectations and roles and relationships for sharing personal data, knowledge, experiences, and concerns in both on-task and off-task events;
- knowledge of the meaning of such words as ISP, the Great Divide, @describe, etc.;
- norms and expectations, roles and relationships tied to the use of an explicit signal (e.g., the Big Sign);
- expectations and understanding of how to participate in the threaded conversations of the MOO;
- roles and relationships between the instructor and the students (i.e., instructor as a facilitator and a rule-setter); and
- connection of members of this community to the larger community of the outside world. This was evidenced by students joking about being on-line together before, student asked about another’s presence and instructor seemed to recognize the student’s name, and two students asked the instructor about his and his wife’s expecting a baby.

The findings reported from the analyses of the Onset of the Community have made visible how the in-the-moment dialogue of the participants was beginning to construct the
attributes of this on-line community. The dynamic construction of the community began with the in-the-moment member interactions in this first real-time meeting of the collective, but it continued to be shaped and re-shaped by the continuous and on-going interactions that occurred throughout the semester. Findings providing evidence of the historical dimension of life in this on-line class will be addressed in the sections which follow: Patterns of Practice and Interactional Spaces.

Patterns of Practice

The characteristics of this distance education class were built through members’ interactions throughout the semester. A few of these characteristics, categorized by Collins and Green’s (1990) criteria for membership, are presented in the domain analysis of Table 18.

Categorizing the characteristics into individual criteria is not intended to imply that any particular event, action or interaction only created one attribute of the community. The construction of the community’s characteristics was interwoven and events and actions often developed multiple community characteristics.

Once the data analyses identified what community characteristics were constructed throughout the semester, the data were then subjected to discourse analyses to make visible how the attributes of the on-line community were developed. Patterns of practice which developed from the interactions of the participants throughout the semester will be presented in this section.

An important pattern of practice that developed over the semester was the way in which these students interacted in the MOO prior to the instructor joining them and officially beginning the class. As they continued to meet and participate in the MOO
Table 18

Excerpts from Domain Analysis of Membership Criteria

<table>
<thead>
<tr>
<th>Membership Criteria</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Develop understanding of the meaning of actions, words, and objects of the classroom | o meaning of words and the actions which accompanied: @describe, @quit, @name  
  o writing a precis summary  
  o using emoticons to show body language and feelings on-line  
  o using a Big Sign in the MOO  
  o actions to compensate for lack of face-to-face conversation cues |
| Learn to predict future events                                                      | o when Big Sign was used  
  o during student-only pre-class time in the weekly MOO sessions  
  o after the instructor joined them prior to starting the on-task readings  
  o when sending e-mail to instructor (he responded promptly)  
  o when posting a journal on the listserv  
  o when responding to a journal on the listserv |
| Understand the norms and expectations for participating in future events           | o access and participate in the interwoven conversations of the MOO  
  o access the class web pages and follow hyperlinks to other web sites  
  o post journals and respond to journals on the listserv  
  o access, complete, and submit the on-line weekly quiz  
  o analyze the weekly readings in the listserv and MOO discussions  
  o greet and be greeted by others in the MOO sessions |
| Determine members’ roles and relationships within the group                         | o when initiating discussion of readings in the MOO and choosing reading to analyze  
  o instructor as facilitator during on-task reading analysis, as gatekeeper against intrusion by outsiders, setter of rules, as source of technical information on Internet, protector against violations of cultural norms, as creator and user of Big Sign  
  o students as sources of assistance and sharing, as chooser of next reading, as resources for discussing and interpreting the readings from the text, as resources for peer evaluation of essay assignment |
| Meet the rights and responsibilities of group membership                            | o read weekly story from text and on-line  
  o post and respond to journals on the listserv  
  o complete and submit the weekly quiz  
  o follow the workshop ground rules for courteous interactions  
  o change name in the MOO  
  o participate in the MOO sessions or comment on them in the listserv  
  o discuss and argue interpretations of the text on the MOO sessions |

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sessions, the students' opening activities became a regular procedure that could be anticipated by the members of this on-line society.

Each weekly MOO session began in basically the same way. Prior to the scheduled meeting time, the instructor logged into the MOO site, set the automatic logging feature on, and logged off. He did not log on again until students had had time to engage in informal pre-class interactions.

Once students were logged in, the norm was to greet each other in a friendly manner. They used this before-class time to ask and answer each other’s task-oriented questions (i.e., about activities required for the course) and process-oriented questions (i.e., about how to accomplish processes such as using the MOO commands), and to discuss their class-oriented concerns (i.e., quiz answers). When students have the opportunity to talk to each other informally before and/or after class, this helps to build rapport among them and to decrease feelings that they are isolated in an on-line environment (Wolcott, 1996).

One stage in completing the weekly activities, was participating in a discussion of the weekly readings in the synchronous environment of the MOO. In order to accomplish this task, students had to change the off-task sharing of personal data to the on-task discussion of the weekly readings, negotiate choosing the reading with which to begin, and discuss and analyze the readings. Findings relating to the development of the patterns of practice that developed over time to accomplish these events are presented next.

How Members Changed the Topic and Chose a Reading

When the instructor joined the collective in the ongoing MOO session, greetings were exchanged and then students began to ask him questions. Building in class time for students’ questions and answers is another on-line technique that can be used to enhance
interaction among the class participants (Wolcott, 1996). On many occasions, this question and answer phase was followed by off-task informal dialogue in which both students and instructor shared personal experiences and thoughts. Although sharing experiences and using student’s experiences to draw them into discussions can decrease student feelings of isolation (Wolcott, 1996), dialogue eventually was shifted to the task at hand, discussing the weekly readings. First, members had to change the focus of the dialogue from the off-task sharing to the on-task discussion of the first reading of the week.

Analysis of selected dialogue from the first MOO session of the semester makes visible how the focus of the off-task dialogue in the MOO was changed to the on-task behavior of discussing the weekly readings. This dialogue is presented in Table 19 by indicating the message units (line numbers), action units (single underline), interaction units (line across the columns), and speakers. (A discussion of these components is presented in Chapter 3.) Dialogue chosen as key events are a part of the larger transcript of the postings in the MOO sessions and, therefore, have been taken out of context.

As can be seen in Table 19, a student proposed the change of focus from off-task sharing of personal experiences and family data to the on-task activity. Prior to this segment, the students and teacher were discussing families and babies. When this focusing request was posted, it was a potentially divergent event (Green & Wallat, 1979). That is, it had nothing to do with the current nor any previous conversational topic in this MOO session. (See Chapter 3, Event Map, and Onset of Community in this chapter for further discussion.) At this point in the conversation, the collective had the option of ignoring the divergent event or responding to it. In face-to-face conversations, verbal and non-verbal
Table 19

Focusing on On-task Behavior - Week 2

<table>
<thead>
<tr>
<th>Interaction unit</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggests changing focus to the</td>
<td>CarrieM</td>
<td>001. so what are we learning?</td>
</tr>
<tr>
<td>readings</td>
<td></td>
<td>002. To Mooooo</td>
</tr>
<tr>
<td></td>
<td></td>
<td>003. To MUShhhh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>004. to do a little dance?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>005. CarrieM dances</td>
</tr>
<tr>
<td>Editing and restating the request</td>
<td>Prof</td>
<td>006. (holds up a big sign)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>007. how about we talk a little bit about this</td>
</tr>
<tr>
<td></td>
<td></td>
<td>week's readings?</td>
</tr>
<tr>
<td>Students respond</td>
<td>CarrieM</td>
<td>008. YES</td>
</tr>
<tr>
<td>Agrees</td>
<td></td>
<td>009. YES</td>
</tr>
<tr>
<td>Challenges the change</td>
<td>DianaJ</td>
<td>010. YES</td>
</tr>
<tr>
<td>Agrees</td>
<td>DeeJ</td>
<td>011. Are you bored with babies already????</td>
</tr>
<tr>
<td></td>
<td></td>
<td>012. ok</td>
</tr>
</tbody>
</table>

Communications influence gaining access to the floor. In on-line communications, the participants gain access to the floor only if the communication is responded to by another on-line participant. Postings that are not recognized by the group do not gain the floor (Topper, 1997). In the Onset of Community discussion, Bloome and Egan-Robertson’s (1993) criteria for intertextuality was used to determine whether or not a potentially divergent event gained the floor. Specifically, the criteria used was that it must be proposed, recognized, acknowledged, and have social significance (Bloome & Egan-Robertson, 1993). Changing the topic of conversation was proposed when CarrieM posted her request.

In the action unit following the proposal of a topic change, the instructor supported this conversational shift by editing the student’s request and restating it. This served to
recognize and acknowledge the request and direct student attention to the proposed change in the focus of the conversational topic.

Students then began to respond to the original request, beginning with an affirmative reply from the requesting student. Another student seemed reluctant to leave the previous topic when she asked if the collective was ready to leave the preceding conversation on babies. A third student okayed the shift in focus.

The dialogue in Table 19 was socially significant in that the collective now changed the focus of the conversation to the on-task analysis of the weekly readings. This analysis was an important part of the instructional design of the class. The group interactions in this real-time environment were designed to provide students opportunities for learning to appreciate and understand reading literature.

In addition to the discourse that suggested the shift and responded to it, other attributes of this community were being constructed. The instructor used a MOO command to create a Big Sign to direct students' attention to the readings. This object was used throughout the semester by the instructor as a signal to capture and direct the student's attention. Within this community, only the instructor used a Big Sign. Over time, this object of the classroom came to be recognized as a signal that a topic of importance was about to be addressed. A more in-depth discussion of the Big Sign appears in a later section.

One student used the on-line technique of capitalizing text to indicate shouting her answer as: "YES YES YES". The use of capital letters to indicate shouting is a common on-line technique. By using this form to show her enthusiasm for starting the readings,
CarrieM incorporated it into the tools this community used and came to accept as a norm. It became part of the language of the classroom (Lin, 1993).

The use of emotes, MOO software commands that can be used to show body language and other non-visual conversational cues, was also present. When CarrieM posted dances to the MOO, the group participating saw CarrieM dances. This form of on-line body language accompanied her request to focus on the on-task reading discussion.

Key events showing intertextuality are also present in Table 19. For instance, when CarrieM used an emote to dance, she was using knowledge she had gained either from her past MOO experiences or from what she had read in the MOO help of DaMoo that explained how to emote and what it does to produce the text using the emote on the MOO. The image she created was one of a figure dancing as she said, “so What are we learning? To MOoooo To MUShhhhh to do a little dance?” She accompanied this message with an emote that told others she was dancing. This served to soften her message so others did not take it as a stern comment to get on-task.

When CarrieM capitalized her response to the instructor’s Big Sign (YES YES YES), she was also using intertextuality. She used the text of what she had previously learned from on-line reading and/or experiences about capitalizing to show shouting and combined it with the text of what was said in the MOO to produce this new text that reflected her emotions about starting the on-task readings.

The instructor also used the text of his knowledge and past experience of using objects in the MOO to produce the text of the Big Sign. He had used this signal in past MOO’s as a focusing device to gain student attention and elicit compliance.
Once the conversational focus was changed to the on-task activity, members had to decide which reading to discuss. Table 20 contains this dialogue. The continuing message unit numbering pattern shows the continuity of the dialogue.

### Table 20

**Deciding Which Reading to Discuss - Week 2**

<table>
<thead>
<tr>
<th>Interaction unit</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrees and Expands</td>
<td>LindaM</td>
<td>013. if you insist...</td>
</tr>
<tr>
<td>Agrees(ties back to</td>
<td>HildaT</td>
<td>014. where do you want to start?&quot;</td>
</tr>
<tr>
<td>012)</td>
<td></td>
<td>015. ya think</td>
</tr>
<tr>
<td>Teacher gives</td>
<td>Prof</td>
<td>016. where do you all want to start?&quot;</td>
</tr>
<tr>
<td>students choice</td>
<td>CarrieM</td>
<td>017. Goodman Brown?</td>
</tr>
<tr>
<td>Students and teacher</td>
<td>DeeJ</td>
<td>018. explain the fall of the house of</td>
</tr>
<tr>
<td>negotiating reading</td>
<td>Prof</td>
<td>019. we can do goodman brown</td>
</tr>
<tr>
<td>to start with</td>
<td>CarrieM</td>
<td>020. yes both</td>
</tr>
<tr>
<td>Controlling the replies</td>
<td>Prof</td>
<td>021. how about one at a time.</td>
</tr>
<tr>
<td>Teacher and student</td>
<td>DeeJ</td>
<td>022. where do we start?</td>
</tr>
<tr>
<td>negotiate who chooses</td>
<td>Prof</td>
<td>023. you are the teacher</td>
</tr>
<tr>
<td>Focusing on ygb</td>
<td>HelenaA</td>
<td>024. which is why I get the big</td>
</tr>
<tr>
<td>Tying back to</td>
<td>DeeJ</td>
<td>025. so was goodman brown a dream or</td>
</tr>
<tr>
<td>negotiating who</td>
<td>Prof</td>
<td>026. That part confused me</td>
</tr>
<tr>
<td>chooses</td>
<td></td>
<td>027. looks like your choice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>028. but you guys can decide--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>029. seems we're going ygb</td>
</tr>
</tbody>
</table>

As the direction toward the on-task activity was followed, another student focused the discussion on which reading should be first. HildaT’s comment signifies her acceptance of the change in focus and ties back to message unit 012.

It was at this point that the instructor gave the students the opportunity to choose the reading they wanted to do first. Two students suggested different readings. The
intertwined messages in this synchronous medium may have resulted in the response of the instructor agreeing with the first posting, probably before the second posting reached him.

The timing of the postings is lost in the text-based MOO logs. The best way to appreciate the fast scrolling that sometimes occurs when messages are quickly posted one after the other is to be there. The instructor’s comment in message unit 021 appears to be an attempt to control the quick replies and is followed by his second request for the students to choose where to begin.

The instructor and a student negotiate who chooses until HelenaA uses a reading-specific question to focus the discussion on Young Goodman Brown (ygb). When a student indicated it was the same as the instructor’s choice, he responded that it was the students’ decision and it looked like Young Goodman Brown had been chosen.

Providing students with choices is suggested as a student-centered activity that can be used to build rapport among on-line class participants (Wolcott, 1996). The instructor gave students the role and the right to choose the reading to discuss. This opportunity was taken up by a student who took action and posted a reading-specific question. This decided that Young Goodman Brown would be the first reading to be discussed. Typically, choosing a reading would be the instructor’s role. It was being taken up by the students in this on-line community.

The preceding discussion focused on the beginnings of patterns of practice that occurred when the conversation was changed and the reading was chosen. It also noted other developing practices such as: student choices, student and instructor roles and relationships in starting the on-task activities, use of a Big Sign, emotes, and capitalization in the MOO environment. Analysis of this first MOO session is only the beginning step in
making visible how the participants' interactions constructed the characteristics of this class, such as the roles, relationships, rights, and responsibilities of its members. As these activities were encountered in similar events over time, they were shaped and reshaped by the interactions of the class members. The dialogue presented in Table 21 began when the instructor logged into the MOO in week eight. The students had already met their responsibility of focusing on the weekly readings in general. The instructor once again assumed the role of facilitator in the discussion and choice of a specific reading. His comments in message units 002 and 011 solicited individual feedback on the students' thoughts about the stories: "what did you come up with?", "what did you dislike...". In message unit 022, he facilitated focusing the discussion on Metamorphosis and encouraged student involvement by again using personal pronouns: "let (us) get beyond the giant bug part and see what you think".

Several other characteristics of members' roles, relationships, rights, and responsibilities can be seen in this dialogue. In this conversation, DeeJ assumed the role of spokesperson for the group. She informed the instructor of what they were doing, told him we didn't care for Metamorphasis, and responded to HildaT's comment which was directed to the instructor. When her use of "we" was questioned by MarthaC, she backed up her statement by expressing her own dislike of cockroaches. She used her personal experience/knowledge of cockroaches when reading and discussing the reading from the text (life-to-text intertextuality) to inform her comments in this situation. Students had the right to voice their opinions of the stories and the responsibility to let others do so too. Their relationship enabled an open discussion of their individual choices as it did in many other situations.
## Table 21

### Deciding Which Reading to Discuss - Week 8

<table>
<thead>
<tr>
<th>Interaction units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are</td>
<td>DeeJ</td>
<td>001. we were just talking about which stories we liked and didn't like</td>
</tr>
<tr>
<td>generically</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussing</td>
<td>Prof</td>
<td>002. and what did you come up with?</td>
</tr>
<tr>
<td>the readings</td>
<td>MarthaC</td>
<td>003. I liked all of them this week</td>
</tr>
<tr>
<td>when the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>instructor logs in</td>
<td>SusanS</td>
<td>004. metamorphosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>HildaT</td>
<td>005. disliked</td>
</tr>
<tr>
<td>discussing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metamorphosis</td>
<td>DeeJ</td>
<td>006. I liked the rest</td>
</tr>
<tr>
<td></td>
<td>Prof</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>007. metamorphosis was weird...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>008. bliss was ruined by an extra-marital affair...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>009. garden party was good though</td>
</tr>
<tr>
<td></td>
<td>HildaT</td>
<td>010. we didn't seem to care for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metamorphosis</td>
</tr>
<tr>
<td></td>
<td>DeeJ</td>
<td>011. what did you dislike about Gregor and his situation?</td>
</tr>
<tr>
<td></td>
<td>Prof</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>012. (HildaT exclaims) a giant cockroach...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>013. ick!</td>
</tr>
<tr>
<td>Students</td>
<td>DeeJ</td>
<td>014. bliss,</td>
</tr>
<tr>
<td>discussing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bliss</td>
<td></td>
<td>015. should not have surprised anyone by the way she described her relationship with her husband</td>
</tr>
<tr>
<td></td>
<td>MarthaC</td>
<td>016. what's this 'we' business?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>017. I liked the story from the first paragraph</td>
</tr>
<tr>
<td>Text to Life</td>
<td>DeeJ</td>
<td>018. anything cockroach is not good to me</td>
</tr>
<tr>
<td>intertextual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relationship</td>
<td>HildaT</td>
<td>019. no,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>020. bliss was not a surprise,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>021. I just didn't like it</td>
</tr>
<tr>
<td>Expanding to</td>
<td>Prof</td>
<td>022. let's get beyond the giant bug part and see what you think</td>
</tr>
<tr>
<td>more in-depth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>analysis of Bliss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>by facilitating</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In week 11 the instructor used a Big sign to get the students to change the conversational topic, as he did in the first MOO. The dialogue showed that a student accepted the responsibility of choosing the reading to discuss when she said: “Yes, let's start with Bingo, the ending was strange.”

In the last MOO session, the students freely chose Matchimanito to discuss as shown in the dialogue of Table 22. As in earlier MOO sessions, a student initiated the discussion, the instructor facilitated student input and discussion, and students freely expressed their opinions and thoughts.

Table 22

Deciding Which Reading to Discuss - Week 15

<table>
<thead>
<tr>
<th>Interaction unit</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Student focuses on readings and gives thoughts</td>
<td>CarrieM</td>
<td>001. Did anyone else see the hidden meaning in both of our last stories...</td>
</tr>
<tr>
<td>-Prof facilitates</td>
<td>Prof</td>
<td>002. I thought they were really symbolic</td>
</tr>
<tr>
<td>-Ties to previous discussion</td>
<td>DonnaP</td>
<td>003. (Prof asks CarrieM) symbolic of what?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>004. well,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>005. my favorite stories for the semester were the Horse Dealers Daughter and the last one Matchimanito or whatever it's called</td>
</tr>
<tr>
<td>-Students answer</td>
<td>CarrieM, MarthaC</td>
<td>006. of life of strength</td>
</tr>
<tr>
<td></td>
<td></td>
<td>007. I saw LOTS of hidden/symbolic things in amy tan's story</td>
</tr>
<tr>
<td>-CarrieM continues focusing on Matchimanito</td>
<td>CarrieM</td>
<td>008. for instance the wind</td>
</tr>
<tr>
<td></td>
<td></td>
<td>009. and the bear</td>
</tr>
</tbody>
</table>

A pattern of practice developed for this event which shaped and was shaped by the ways members interacted over the semester. The roles and relationships of students and teacher in similar events became accepted practice.
Initiating the on-task behavior of discussing the readings was usually the role of the students. The instructor would facilitate this topic change, sometimes with the use of a Big Sign. The instructor gave students the choice of the reading with which to begin and students came to assume this responsibility without urging as the semester progressed. Comparing the discourse of these activities over time made visible the construction of the patterns of practice which became recognized by class members within this on-line community. These patterns were insider knowledge that assisted participants in knowing who can do or say what, to or with whom, for what purpose, under what conditions, when and where, and with what outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997).

Once the topic was changed, students could begin to accomplish the core opportunity for learning: discussing and analyzing the weekly readings. The stories' plots, characters, themes, and settings were each discussed and gave the students opportunities to learn and practice discussing and analyzing these components of literature. Through these interactions and those conducted on the listserv (i.e., exchanging journals and responses), students supported their understanding of each story's characters (weeks two through six), theme (weeks seven through eleven), and point of view (weeks twelve through fourteen).

**Discussing and Analyzing the Weekly Readings**

Students did not share personal experiences when they analyzed the first readings in the MOO. Mainly students were trying to figure out what was happening in the story and looking at how the characters and events created the main idea of the stories. The student and teacher roles and relationships for discussing these readings and working together in a
group learning environment were just being built. As this section will discuss, these first in-the-moment interactions grew into patterns of practice for discussing the readings by sharing personal knowledge, concerns, and experiences.

The discussion of Young Goodman Brown is underway when the following dialogue begins. The interwoven dialogue has been omitted to facilitate the reading.

<table>
<thead>
<tr>
<th>HildaT</th>
<th>001. I think he would have turned back except for the pink ribbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>LindaM</td>
<td>002. I mean lark in a sense that he thought he was going to have an adventure,</td>
</tr>
<tr>
<td></td>
<td>003. taste a little of the wild side and then go home to his wife</td>
</tr>
<tr>
<td>Prof</td>
<td>004. and I'm with HelenaA,</td>
</tr>
<tr>
<td></td>
<td>005. I don't think it matters whether the experience in the woods was a dream or real.</td>
</tr>
<tr>
<td></td>
<td>006. I don't think that is what Hawthorne is trying to get at with the story</td>
</tr>
<tr>
<td>DeeJ</td>
<td>007. he is on this path out in the wood and sees what I think to be a coven of witches, correct?</td>
</tr>
<tr>
<td>CarrieM</td>
<td>009. This is an allegory therefore everything had to represent something else</td>
</tr>
<tr>
<td>Prof</td>
<td>010. (To LindaM) that could be</td>
</tr>
<tr>
<td>GinaJ (Leo_guest)</td>
<td>011. I think he meant to go on the trip because the devil said I was expecting you</td>
</tr>
<tr>
<td>Prof</td>
<td>012. what about the man knowing his grandfather?</td>
</tr>
<tr>
<td></td>
<td>013. (To CarrieM) don't make too much of it.</td>
</tr>
<tr>
<td></td>
<td>014. that's why we are doing precis for the journal.</td>
</tr>
<tr>
<td></td>
<td>015. let's look at the surface first before we dig deeper</td>
</tr>
<tr>
<td>DeeJ</td>
<td>016. I am listening go on</td>
</tr>
<tr>
<td>Prof</td>
<td>017. that's a good point HildaT.</td>
</tr>
<tr>
<td></td>
<td>018. many see the man in the woods as the devil</td>
</tr>
</tbody>
</table>
whether or not it was a dream, the importance was that he realized that no one is innocent

I agree with you HelenaA, I thought that was the real message

Prof

he thought his life would be better and it turned out just the opposite and to tie tina's comment about the ribbon and the precis assignment together,

how might that scene fit with the precis of the story?

The class members are generally discussing the actions of the character and symbolism in the story. The instructor's facilitation of the discussion, the ways he was building rapport with the students, and building their confidence in discussing and analyzing the reading were the key points of this first reading discussion.

In message unit 15, the instructor guided the students to “look at the surface first before we dig deeper. In message unit 17, he praised HildaT’s contribution about the pink ribbon and, in message unit 24, guided them to focusing on the symbolism of the ribbon and how it related to the facts of the story. He directed praise and guidance to students by name (in message units 4, 10, 13, 17, and 24) with such comments as: “I agree with you HelenaA” and “that's a good point HildaT”.

As this discussion continues below, he solicited feedback when he pointedly asked: “so did faith, figurative and literal, let him down?” Even though he directed his question to LindaM, many students responded. In this group environment where all postings were seen by the collective, the norm was that all messages, even those directed to an individual, could be replied to by anyone.

(Asked LindaM) so did faith, figurative and literal, let him down?

I think so
In week three, when students discussed *Bartleby, the Scrivener* and *Death of Ivan*, they were beginning to reshape and expand on the way they interacted in the previous MOO and many connected the stories to personal knowledge, experiences, and feelings. In the dialogue in Table 23, students were making connections between their personal experiences and knowledge and the story and the actions of the character in *Bartleby, the Scrivener*.

**Table 23**

**Sharing in *Bartleby, the Scrivener*, Week 3**

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Posting</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BarbaraK</td>
<td>we all ignore the homeless, the mentally ill, etc. It’s the human condition!</td>
<td>BarbaraK uses life experiences to try and understand why Bartleby wouldn’t work. (life-to-text)</td>
</tr>
<tr>
<td>CarrieM</td>
<td>Bartleby was mentally ill I think and so are many other lonely lost persons. The Lawyer just realized it at the end</td>
<td>She reflects on Bartleby’s character and relates this to others (Text-to-life)</td>
</tr>
<tr>
<td>AliceA</td>
<td>I think we’re all victims in one way or another</td>
<td>The character in the text causes her to reflect about life (Text to life)</td>
</tr>
<tr>
<td>TammyK</td>
<td>I think we as a society create the Bartleys</td>
<td>Using society’s actions to understand the character’s action. (Life to text)</td>
</tr>
</tbody>
</table>
A heated discussion of Bartleby’s problem gets students involved in interpreting the story.

BarbaraK: Bartleby was no different than the able-bodied bums the street, he wanted something given to him.

Prof: So if someone just gives up in the face of depressing odds, despite what they see as the rightness of their cause, they are stupid or mental or something?

BarbaraL: What was it Bartleby asked for?

SusanS: If he wanted a handout he would of went home with the Mr. B.

LindaM: Mentally ill, depressed.

AliceA: No but why should they be treated specially.

Prof: I'm with SusanS. Bartleby asked for nothing but to be left alone.

HildaT: But he wanted to be left alone in someone else's space.

HelenaA: I think he went farther than giving up. He was being insubordinate, and he was living there for pete sake!

BarbaraK: Bartleby wanted the narrator to allow him to live in his offices and refused to leave, refused to earn his keep, etc.

As this discussion continued, the instructor used questions, as he did in week two, to guide the discussion and assist the students in understanding the story. He offered a suggestion for the author’s purpose in writing Bartleby, the Scrivener to facilitate more discussion.

Prof: Maybe this is the sort of discussion Melville wanted to get started. Here we have Bartleby who didn't fit with the evolving and rapidly expanding business world, one that was very new to him and the whole of his society, and we're ready to kick him into the street because he doesn't fit in: ah humanity?
The heated discussion resulted in students posting their messages so quickly that some students were having trouble following the conversations as they scrolled by on their screens. (The interwoven dialogue, on a different topic, is backgrounded in gray.)

GinaJ this is going so fast, is it just my computer?
HannaL I thought that Bartelby worked well until he was asked to do something that he could not do.
BettyA no mine too
AliceA no they are all talking

After the conversation moves on to the Death of Ivan Ilych, the students discuss Ivan’s wife and the actions of the characters as shown in the following dialogue. The students posted their opinions of Ivan’s wife and how her actions influenced both Ivan and herself in the story. In the last posting, the instructor helped them to relate and understand the story by using knowledge of the times it was set in.

HannaL Does anyone know if Ivan's wife was just a witch, or did something happen to make her so nasty?
MarthaC neither
GinaJ Just a witch
EmilyN she knew he didn't love her
BarbaraK she was a materialistic, ladder-climbing, gold digger!
WadeL Ivan and his wife were the same
Prof so what did you like or dislike about Ivan?
BarbaraK and she met the perfect guy for it!
SusanS I think Ivan's wife made him the person he became in the end!
EmilyN I think that is what made her so bitter
CarrieM a business agreement was what I thought of their marriage
BarbaraK Ivan made himself the way he was!
AliceA I thought it was sad
TerryP I felt bad for Ivan, he made bad choices, but look at the people in his life!
Prof watch the gold-digging notion. women of her day didn't have the luxury (?) of a career, they had to marry well to live well

Table 24 contains the individual comments that occurred later during the discussion of The Death of Ivan Ilych. The message unit numbering begins anew since the dialogue is not continuous. Students continued to connect the story to real-life and to use life experiences to understand the story. For example, SusanS interpreted the message of the story to a message about life.

In summary, the discussion in week three generated more personal involvement and text-to-life and life-to-text intertextual connections (Cochran-Smith, 1984) than in the first MOO. As the students continued to interact by discussing and analyzing the readings in the cycles of activity throughout the semester, they had opportunities to develop an understanding and appreciation of these stories. The students were developing a pattern of practice for using their own life experiences and knowledge to understand the story. They also continued to learn how to use the intertextual references from text-to-life and life-to-text (Cochran-Smith, 1984) situations to understand the stories.

In week eight, the relationship between the married characters in Bliss was being discussed and members shared their personal feelings about marriage to help understand the relationship in the story. In this dialogue, the instructor shared his personal feelings about marriage, just as the students did. Members were using these shared experiences as resources to help understand the actions of the story’s characters.

TammyK maybe she saw them as buddies some married people are
MarthaC my hubby and I are buddies
DeeJ mine too, he is my best friend
Table 24

Sharing in The Death of Ivan Illych - Week 3

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Posting</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CarrieM</td>
<td>001. too many men let the business give them the rewards</td>
<td>Extends her opinions of business men to Ivan’s character</td>
</tr>
<tr>
<td></td>
<td>002. and marry the business to escape what’s really important in a relationship time and understanding</td>
<td></td>
</tr>
<tr>
<td>BarbaraK</td>
<td>001. it is a lesson about having ‘stuff’ over having an emotionally fulfilling life</td>
<td>She sees author’s purpose as a lesson in life</td>
</tr>
<tr>
<td>BarbaraK</td>
<td>001. his materialism was his downfall.</td>
<td>Sums up her analyses</td>
</tr>
<tr>
<td></td>
<td>002. The symbolism of his reaching the top of the physical ladder and falling,</td>
<td>As she ties together the physical actions of the character to his fall in politics.</td>
</tr>
<tr>
<td></td>
<td>003. coincided with his reaching his pinnacle of the political ladder and falling</td>
<td></td>
</tr>
<tr>
<td>SusanS</td>
<td>001. we need to learn about our own limits in ourselves and what our driving force is</td>
<td>Connects Ivan’s story to a personal message for life (text-to-life)</td>
</tr>
<tr>
<td></td>
<td>002. and what can happen if we let things affect us in the wrong way</td>
<td></td>
</tr>
<tr>
<td>Prof</td>
<td>001. I don’t think Ivan is all that different from a lot of people today—</td>
<td>Instructor’s opinion Ties Ivan in his times to real life today</td>
</tr>
<tr>
<td></td>
<td>002. equating material wealth with success,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>003. judging by appearances</td>
<td></td>
</tr>
<tr>
<td>CarrieM</td>
<td>001. having it all doesn’t necessarily bring happiness.</td>
<td>Sums up her opinions by tying story to her personal knowledge/experiences</td>
</tr>
<tr>
<td></td>
<td>002. Money helps but a rotten relationship stinks</td>
<td></td>
</tr>
<tr>
<td>BarbaraK</td>
<td>001. my husband and I used to be very materialistic, and didn’t want children,</td>
<td>Sees a connection to the materialistic side of Ivan</td>
</tr>
<tr>
<td></td>
<td>002. etc.,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>003. we are getting a little older now,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>004. and kids are in the near future</td>
<td></td>
</tr>
</tbody>
</table>
Prof  married people should be buddies,
but I didn't get married to be a buddy,
I know that.
and I don't think harry would have either,
but I don't know
HildaT  my husband is my best friend...
but that is where we started

SamuelM connects the story in a broader sense to society in the following dialogue.
Note that the intervening postings have been omitted.

SamuelM  And isn't that the way our whole "modern" society operates.
We get caught up in working two jobs to buy the best toys but we're not around to share them with the kids.
We focus all our attention on what ought to be the trivia,
and we trivialize or ignore the meaningful.

In each weekly discussion now, students freely contributed their personal experiences and knowledge to the conversations. The on-task sharing provided opportunities for students to use their own historical knowledge and experiences and the historical knowledge and experiences of other class members as resources to understand and appreciate the literature.

In the dialogue of week fourteen, shown in Table 25, class members were discussing The Things We Carried, a war story, and juxtaposing personal experiences, knowledge, and feelings to issues and feelings that this story evoked. In this table, the intertwined messages were left intact to show how these students were accustomed to maintaining several conversations at once while sharing personal experiences and knowledge. This ability was developed over time through their continuing interactions on the MOO.

Reading, interpreting, and participating in the intertwined dialogue would be more difficult for an outsider unaccustomed to this practice. In dialogue from message units 8

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Table 25

Intertextual Relationships While Discussing The Things They Carried (Week 14)

<table>
<thead>
<tr>
<th>Interaction Unit</th>
<th>Speaker</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
</table>
| Ties life to war story   | DeeJ          | 001. it is just when you see these poor children on the news lately,  
|                           |               | 002. it breaks my heart,  
|                           | BettyA        | 003. then they show the POW's....  
| Agrees                    | BarbaraK      | 004. Sorry all I tend to get on a soapbox when it comes  
| Life to text              | MarthaC       | to Vietnam  
| Using emotes and joking   | TammyK        | 005. yes indeed!  
| Student joke with the use of emoticons, and acronyms | BarbaraK | 006. the only thing my dad really talks about is the last  
|                           | MarthaC       | stand of the american embassy when he was escaping  
|                           | BettyA        | off the roof  
|                           | DeeJ          | 007. everybody who has been to war probably  
|                           |               | 008. (pushing BettyA off her soapbox)  
|                           |               | 009. it's all right,  
|                           | BarbaraK      | 010. BettyA  
|                           |               | 011. (laughing)/ 012. Ha,  
|                           |               | 013. ha!  
|                           | MarthaC       | 014. LOL  
|                           | BettyA        | 015. Quit it BarbaraK LOL :)  
|                           | DeeJ          | 016. be right back,  
|                           | BettyA        | 017. my dinner is burning  
|                           |               | 018. oh no DeeJ  
|                           | BarbaraK      | 019. okay.  
|                           | MarthaC       | 020. LOL  
|                           | Prof          | 021. I have a friend who told me about being in firefights,  
|                           |               | 022. about hiding behind corpses of friends for cover,  
|                           |               | 023. about being ashamed for doing that to stay alive.  
|                           | BarbaraK      | 024. wow. what a choice to have to make.  
|                           | DonnaP        | 025. that was a great story this week,  
|                           | BettyA        | 026. I enjoyed it.  
|                           |               | 027. My brother was there during the worst years 1967-68  
|                           |               | 028. My friends told me about coming back state side to be called baby killers-  
|                           |               | 029. it stinks to see a grown man cry  
|                           | Prof          | 030. does the story provide some insight into those who were there and what was going on?  
|                           | MarthaC       | 031. are there good years in war?  
|                           | EmilyN        | 032. I guess you would go to any extent to save your own life  

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through 20, students were using emotes, acronyms, and emoticons to convey body
language and moods as they joked, as if they were in a face-to-face class. Several students
were engaged in both the serious and the lighter dialogue.

In message units 21 through 23, the teacher took on the role of the student as he
shared personal knowledge on a level with them. In message unit 30, he again assumed
the role of discussion facilitator and teacher by asking students to consider how the story
made the circumstances of war more visible.

The following dialogue occurred in the same MOO as the discussion of The Things
They Carried in Table 25. Sharing personal thoughts about the recent shootings at
Columbine High School and the conditions in Kosovo as they related to conditions of the
war in this story helped the students to make meaning of this reading through
intertextuality.

BarbaraK here we sit with this tragedy at Columbine
High
when there is no war,
and there are men over in Kosovo expected
to kill

BettyA Very ironic
Prof its becoming a sick world
did you hear how one of the kids in CO just
was rejected by the marines?

EmilyN sends kinda a mixed message,
in one case it is ok to kill,
in another it is not.
its difficult to tell in some peoples minds
when it is "okay" to kill and when its "not
okay" to kill"

BarbaraK didn't hear that Prof
DonnaP that's very interesting, do you know why he
was rejected?

This discussion of how members of this on-line class developed patterns of practice for
discussing and analyzing the weekly readings has provided evidence of the role of
Intertextuality in providing opportunities for learning. Intertextuality has the potential to assist learners in making meaning of new knowledge by interactionally exchanging socially significant experiences and knowledge with others. As evidenced by examples in this discussion, this potential was continually nurtured and encouraged by the instructor. His facilitation encouraged students to use the resources available.

Discussion within the last two sections focused on how this community constructed particular patterns of practice for their interactions in the text-based, real-time MOO environment: changing the conversational topic, choosing a reading, and discussing and analyzing the weekly readings. The findings were used to demonstrate how the in-the-moment interactions of the participants were shaped by past interactions to develop these patterns. This continuity of experiences and interactions with each other throughout the semester provided class members with an insider's view of life in this class and how to participate in that life.

Another pattern of practice that was constructed with the continuity of experiences in this culture was the development of a referential system (Collins & Green, 1992), sometimes referred to as the language of the classroom (Lin, 1993). That is to say that members developed an understanding of the meaning of words, actions, and objects within this community (Collins & Green, 1990; Spradley, 1980). The historical dimension of classroom life is further evidenced by investigation of the practices these class members developed for one of these objects, the Big Sign.
Development of the Use of a Big Sign

Identifying what people do (cultural behavior), what people say (speech messages), and what people make and use (cultural artifacts) is necessary to make inferences about a culture (Spradley, 1980).

Evidence of a cultural artifact created on the MOO, the Big Sign, helped students to acquire a knowledge of the meaning of an object in this culture. A Big Sign consisted of block-formatted text separated from other postings by a top and bottom border of a line of dashes. The instructor posted a Big Sign whenever he wanted to focus student attention on something, such as how to accomplish a task, time to end the MOO session, starting a reading, etc.

Expectations of how both the instructor and the students were to participate in the event developed over time. The role of creating and using a Big Sign was exclusively the instructor’s role; students never created a Big Sign. Although in other instances students took up the role of the instructor, in this instance they did not do so. Students acquired the knowledge that when the instructor held up a Big Sign in the MOO he wanted to direct their attention to something and they should follow his directions. The instructor expected that the students would heed the information in the Big Sign and act accordingly.

The following example from week three is typical of a Big Sign that would signal the end of the MOO. When students saw this posting, they began the practice of exchanging farewells and logging off of the MOO. The normal postings have been made gray to show how they were interrupted by the Big Sign. In the last line of this example, EllieT, the teacher of the following class in the MOO, is talking to one of her own students.
> CarrieM says, "well the symbolism is the discovery you mentioned earlier"

> it's time for the 111 class to go as

> another one is coming in and we're

> infringing on their time

> EllieT says, "We'll start in just a few minutes, JoanF."

The previous example showed how the Big Sign was used to focus student attention on leaving the MOO. As this next example shows, a Big Sign was also used to provide instructions to the students on how to accomplish this task. By using this Big Sign, the instructor directed students' attention to his directions. Students who needed to know how to leave the MOO could now act on this information and use the appropriate command.

The housekeeper arrives to remove CarrieM

> Prof holds up a big sign: to get out type @quit

> Victory. Guest teleports in.

The preceding examples made visible some of the ways members of this on-line class constructed an understanding of the meaning of a Big Sign and its use through patterns of practice that occurred over time.

Using discourse analysis to focus on the use of a Big Sign in the MOO sessions made visible the purposes for which it was used and the pursuant student actions. It also made visible the roles and relationships taken up in this situation. Questions asked were: What are all the purposes of using a Big Sign? and What are all the student actions which follow the use of a Big Sign? Answers to these questions provided the basis for a domain
analysis (Spradley, 1980) of Big Sign use throughout the semester. Selected examples of these uses are in Table 26. By participating in these interactions, students developed expectations and an understanding of members' accepted roles and relationships when a Big Sign was used in the MOO sessions.

**Rights and Responsibilities**

Fulfilling the rights and responsibilities of group membership became an important attribute of this on-line community. The groundwork for some of the rights and obligations of membership in this community was provided by the instructor. He made the students aware of their obligations prior to the beginning of the semester by posting them on the syllabus on the class web page. An example follows.

As members of the class, you are required to completely read all material as assigned prior to listed discussion dates, to have posted completed journals to the class mailing list so you may take part in discussions, and to write well developed argumentative essays that focus on the readings and topics under discussion. (Class web pages)

Several student responsibilities for class participation were clearly stated in the syllabus. The instructor was very clear that journals had to be submitted when they were due. Students were also advised it was their responsibility to avoid plagiarism and collusion in this course.

Rights and obligations go hand in hand. When one has the right to do something, one also has the obligation of allowing others to do the same thing. The two major assignments were group projects. The first assignment required the students to write an argumentative essay to make a point supported by evidence and participate in peer review.
Table 26

**Creating Patterns of Practice For Using a Big Sign**

<table>
<thead>
<tr>
<th>Week</th>
<th>Purpose of Big Sign</th>
<th>Student actions following use</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Direct attention and instruct on use of @examine command</td>
<td>Students use @examine prof to view instructor’s description and comment on it</td>
</tr>
<tr>
<td>2</td>
<td>Direct attention and change focus of conversation to on-task readings</td>
<td>Focus changes and they begin to choose a reading. (This dialogue was presented earlier in Table 19)</td>
</tr>
<tr>
<td>2</td>
<td>Announce is time to leave the MOO</td>
<td>Students immediately exchange farewells and log off the MOO</td>
</tr>
<tr>
<td>3</td>
<td>Announce is time to leave the MOO</td>
<td>Students immediately exchange farewells and log off the MOO</td>
</tr>
<tr>
<td>3</td>
<td>Instructs on how to leave the MOO with @quit (Given in response to student query.)</td>
<td>Student thanks instructor, tells all goodnight, and logs off of the MOO with the @quit command.</td>
</tr>
<tr>
<td>4</td>
<td>Announce is time to leave the MOO</td>
<td>Students immediately exchange farewells and log off the MOO</td>
</tr>
<tr>
<td>7</td>
<td>Announce is time to leave the MOO</td>
<td>Students exchange parting comments and farewells and log off.</td>
</tr>
<tr>
<td>11</td>
<td>Direct attention and change focus of conversation to on-task readings</td>
<td>A student immediately chooses a reading to start on and topic of conversation is changed</td>
</tr>
<tr>
<td>13</td>
<td>Direct attention to change focus of conversation to next on-task reading. (Suggested by a student earlier)</td>
<td>Instructor supports student’s request to change to next reading. After use of Big Sign, students make a few more comments and then begin discussing new reading.</td>
</tr>
</tbody>
</table>
of each other's essays prior to submitting their own for credit. The second assignment required the students to collaborate in groups of three or four to create a web site devoted to making clear some relationship between a particular writer and the time in which he/she lived. Students had the right to expect equal participation by all group members and the responsibility to do so in kind. Other rights and obligations of membership in this community included the right to voice their personal opinions on matters ranging from whether or not to analyze the stories in the MOO to whether the student agreed with the instructor's answers on the weekly quizzes.

The instructor used the web page syllabus to establish five ground rules for successful group membership.

**Workshop Groundrules**

1. We will listen to and respect what others say.
2. We will offer and accept positive comment and criticism.
3. We will participate in group work and do our share.
4. We will use our experience to make ideas useful.
5. We will take risks

Members were not forced nor intimidated to attend the MOO from beginning to end. They had the right to choose if they attended or not, but a responsibility to compensate for not attending. If a student missed the MOO completely, he/she could submit a response to the MOO on the listserv. Members seemed to realize they each had other obligations to fulfill and all had the right to decide their own priorities for participation.

Analyses of the data revealed that a sense of community developed in this on-line class which may have been partly due to the way they treated each other, both on the listserv.
and in the MOO. They were courteous and considerate in their actions. They did not seem to challenge other’s opinions and rights. They shared personal values, concerns, and experiences with each other.

Their courtesy and consideration were evident in the positive feedback they provided each other and in the polite expressions of gratitude on many occasions. Students and the instructor developed a norm of giving reasons for leaving the MOO early, arriving late to the MOO, and temporarily leaving the MOO discussion. The following key event is taken from week three.

HelenaA  Sorry to leave so soon but I've got to go to work.
See ya next week everybody!

Changing their names in the MOO sessions became an established pattern of practice that, over time, students came to understand why this was important and how to accomplish this task. Participation in the MOO earned the student credit. In order for the instructor to recognize who was participating, the original names given by the MOO software, such as Libra_Guest and Leo_Guest, had to be changed with the @name command to reflect the student’s real name. Over-time reminders by both the instructor and students resulted in class members establishing a pattern of being sure their real name was reflected in their MOO postings. As the following exemplar shows, it was not always the instructor who helped students to know how to change their names, at times the students took on this role.

Prof  (Leo_guest)who is that?
can you get your name changed?
Leo_Guest  how?
GinaJ  @ name ... Your name
Roles and Relationships

In addition to fulfilling the rights and obligations of group membership, participants also developed an insiders' knowledge of the roles and relationships that existed in their community. Interactions within the various media used during the cycles of activity constructed these roles and relationships.

The students' experiences on the listserv, where they posted weekly journals, responded to others' journals, and read the instructor's comments on these activities, helped them build relationships with others. Students helped each other by exchanging ideas and comments and providing feedback on the contributions that would increase members' knowledge. In so doing they developed a sense of each other's values, concerns, and feelings. The role of the instructor in these listserv activities was to comment on the journals and journal responses and to provide feedback, direction, and opportunities for learning to the students. He did this in a non-threatening way and in a timely manner. An example of these roles and relationships on the listserv from week two is presented in Table 27. In this table, the instructor and students were discussing the events occurring in Young Goodman Brown and how they affected the main character and the outcome of the story.

The message units, action units, and interaction units are represented as described in chapter three. In the listserv, participants' messages could be separated by minutes, hours, or even days, depending on the speed of the recipient's response and the listserv subscriber's service provider. The asynchronous nature of the listserv necessitated a way to indicate interaction units that occurred at different times. This could occur whenever three or more postings were involved in the interactions. A line of dashes was used to
### Table 27

**Roles and Relationship on the Listserv - Week 2**

<table>
<thead>
<tr>
<th>Interaction units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summarizes events of the story</td>
<td>DonnaP 198-228 1/25/99 4:31 p.m.</td>
<td>001. Young Goodman Brown leaves his new wife at an unusual hour to run an errand in the woods which will keep him most of the night. 002. He meets a man in the woods who appears to be of an evil nature and trying to lead Young Goodman Brown into temptation. 003. Brown recognizes the other voices in the woods as other members of the church and residents of the town including the voice of his wife Faith. 004. He cries out to his wife and in the next instant he finds himself alone in the woods.</td>
</tr>
<tr>
<td>Explains how it affected main character</td>
<td>LindaM 869-885 1/26/99 9:02 p.m.</td>
<td>005. The effects of the incident on Brown were to make him distrustful and stern until his sad death. 006. Patricia. 007. I like your interpretation. 008. Short and to the point. 009 you see the same things I did. 010. YGB is surprised to learn that those he supposed were &quot;good&quot; actually had succumbed to temptation.</td>
</tr>
<tr>
<td>Confirms and agrees</td>
<td></td>
<td>011. This destroyed his &quot;faith&quot; in his church and his wife Faith, 012. and those around him.</td>
</tr>
<tr>
<td>Builds on idea</td>
<td></td>
<td>013. Unable to accept the fallibility of his fellow citizens, 014. he becomes unhappy and makes every one around him unhappy.</td>
</tr>
<tr>
<td>States how events affected him</td>
<td></td>
<td>015. The irony is that he doesn’t seem to see his own fallibility in all of this.</td>
</tr>
<tr>
<td>Summarizes</td>
<td>Prof 4553-4590 1/28/99 9:20 a.m.</td>
<td></td>
</tr>
</tbody>
</table>

---

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indicate interaction units that were related to the same topic, were completed at an earlier
time, and did not complete the current interaction unit. In the key event of Table 27,
DonnaP's journal was posted in lines 198 through 228 of the week two listserv on January
25, 1999 at approximately 4:31 p.m. LindaM posted her response to this journal on the
next day, January 26, 1999 at approximately 9 p.m. The interaction of the journal posting
and the response to it constitute the first interaction unit and are indicated by a line of
dashes. The professor posted his response to these two messages two days later, on
January 28, 1999 at 9:20 a.m. (As mentioned in the listserv discussion in the
Methodology section, these times reflect the day and time received by the researcher's
server, not necessarily the day and time they were sent.) Since the professor's posting
completed this interaction unit, a double solid line is used to indicate the completion of the
entire set of interaction units that occurred in this delayed time medium.

The roles and relationships varied in different situations on the MOO. Students at
times played a task-oriented role when analyzing the literature and participated in a free
exchange of experiences and thoughts on an equal basis. See Discussing and Analyzing
the Weekly Readings in this chapter for further discussion. In other interactions, a student
assumed the role of teacher by instructing fellow students on how to use certain
commands on the MOO or where to find the best web server for their sites.

The role of the instructor also varied depending on the interactions. At times, he was
the information provider and problem solver students looked to for answers. On other
occasions, such as when the readings were being discussed and analyzed, he played a more
facilitative role, supporting student learning, but not lecturing to them. Further examples
of the roles and relationships which developed in e-mail, the listserv, and the MOO will be discussed in the following section on interactional spaces.

The concept of a community as a culture in which the members' experiences are continuous (Collins & Green, 1992) requires a look at how the in-the-moment interactions of the students were shaped and reshaped over time by future and past interactions to develop the characteristics that made this class unique. The results of applying an interactional ethnographic methodology to the data allowed the researcher to make visible this over-time development. This section provided examples of how students learned how to participate in community activities, such as how to change their name in the MOO, use MOO commands, respond to journals in the listserv, and negotiate understanding through instructor feedback on the listserv. In addition, a micro level view of the over time development of four community events that were historically shaped were presented: changing the topic of the MOO conversation to the on-task readings, choosing a reading to discuss in the MOO, discussing and analyzing these readings in real-time, and the implications of using a Big Sign in the MOO. Some of the rights, responsibilities, roles, and relationships that developed within this community were also discussed.

**Interactional Spaces**

Throughout the semester, academic and social knowledge were constructed by community members through their interactions in the interactional spaces of the on-line media: e-mail, listserv, and the MOO. Interactional spaces consist of the organizational patterns, purpose, task, and patterns of discourse in the communications (Heras, 1994). By looking at these different interactional spaces and the roles and relationships, norms
and expectations that developed within them, the different ways the members of this culture communicated and the opportunities they had for learning can be seen.

Participants interact from different positions which define their roles and relationships, rights and obligations, and norms and expectations. What it means to be a teacher or a student in a particular interaction, at a particular time, for a particular purpose or task is defined by the patterns of interaction that have become established over time. For example, the student can take on the role of the teacher in a particular time and place. The roles and relationships of the members of the class are interactionally defined (Heras, 1994).

In the listserv interactions shown in Table 28, for instance, students often facilitated the understanding of other students, as a teacher would normally do. In the dialogue of Table 28, students were discussing The Necklace and the actions of the characters. LindaM's response supports Sleeper's analysis of the character's actions and continues on to provide her own point of view to expand this analysis.

Another example of students taking on the role of the instructor is presented in the dialogue of Table 29. Although the class had not officially begun (i.e., the instructor was not yet on-line in the MOO), students in week four were helping another student understand what happened in The Notorious Jumping Frog of Calaveras County. The student's original interpretation of giving the frog a shot was of alcohol and getting the frog inebriated so he would not win the jumping contest. Other students explained that shot was referring to ammunition and the frog would be too heavy to jump with shot inside of him. The negotiation of her new interpretation was done in a positive manner as the group helped her to understand.
Table 28

Facilitating Understanding in the Listserv - Week 4

<table>
<thead>
<tr>
<th>Interactional units</th>
<th>Speaker</th>
<th>Dialogue in message units /action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>States idea of The</td>
<td>Sleeper</td>
<td>001. An idea that I see developed in this story is that of stupidity.</td>
</tr>
<tr>
<td>Necklace</td>
<td>2/9/99</td>
<td>002. I don't understand how people can grow up and get past the age of 10 and not realize that to be honest and truthful can prevent 75% of anyone's problems.</td>
</tr>
<tr>
<td>Explains his view</td>
<td></td>
<td>003. Why would you lie and try to deceive someone if they are your friend and took the chance of loaning you a piece of jewelry?</td>
</tr>
<tr>
<td>point</td>
<td></td>
<td>004. I absolutely,</td>
</tr>
<tr>
<td>Summarizes</td>
<td>LindaM</td>
<td>005. Tell the truth,</td>
</tr>
<tr>
<td>Agrees</td>
<td>2/10/99</td>
<td>006. you usually come out okay in the long run,</td>
</tr>
<tr>
<td></td>
<td>10:06 a.m.</td>
<td>007. especially with this kind of important stuff.</td>
</tr>
<tr>
<td>Expands</td>
<td></td>
<td>008. I admit,</td>
</tr>
<tr>
<td>Gives own view</td>
<td></td>
<td>009. not everything should be told,</td>
</tr>
<tr>
<td>point</td>
<td></td>
<td>010. especially if you are going to hurt someone's feelings needlessly,</td>
</tr>
<tr>
<td>Expands on view</td>
<td></td>
<td>011. but this was important.</td>
</tr>
<tr>
<td>Retional for beliefs</td>
<td></td>
<td>012. even if it was a real necklace,</td>
</tr>
<tr>
<td>Summary</td>
<td></td>
<td>013. As it is,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>014. she could have made arrangements to pay for it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>015. she could have saved herself 10 years of struggle and heartbreak.</td>
</tr>
<tr>
<td>Interaction unit</td>
<td>Speakers</td>
<td>Dialogue in message units/action units</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CarrieM misinterprets</td>
<td>CarrieM</td>
<td>001. I thought it was funny that his frog got drunk</td>
</tr>
<tr>
<td>the word “shot”</td>
<td>WendyM</td>
<td>002. Drunk?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>003. Did I miss a part?</td>
</tr>
<tr>
<td>Others help her</td>
<td>CarrieM</td>
<td>004. yep the guy he bet fed him a strong shot of booze</td>
</tr>
<tr>
<td>to understand</td>
<td>EmilyN</td>
<td>005. I thought the story of the frog was very entertaining</td>
</tr>
<tr>
<td></td>
<td>WendyM</td>
<td>006. No,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>007. he put shot in his mouth...</td>
</tr>
<tr>
<td></td>
<td>EmilyN</td>
<td>008. he was give a quail shot</td>
</tr>
<tr>
<td></td>
<td>EmerilF</td>
<td>009. quail shot into his mouth to weigh him down</td>
</tr>
<tr>
<td></td>
<td>CarrieM</td>
<td>010. right that's what was funny</td>
</tr>
<tr>
<td></td>
<td></td>
<td>011. he forced it down the frogs throat</td>
</tr>
<tr>
<td></td>
<td>WendyM</td>
<td>012. (She) laughs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>013. Shot is pellets...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>014. like bee-bees.</td>
</tr>
<tr>
<td></td>
<td>LindaM</td>
<td>015. I think you misunderstood,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>016. I got the impression he put ammunition (quail shot) in the frog to make him to heavy to jump</td>
</tr>
<tr>
<td></td>
<td>CarrieM</td>
<td>017. no he got him drunk</td>
</tr>
<tr>
<td></td>
<td>WendyM</td>
<td>018. That's correct LindaM...</td>
</tr>
<tr>
<td></td>
<td>CarrieM</td>
<td>019. hrmrnm maybe I need to read it again...</td>
</tr>
</tbody>
</table>

Table 29

Facilitating Understanding in the MOO
Interactional spaces developed in both private (e-mail) and public (listserv and the MOO) on-line conversations. Private on-line conversations occurred between two people and were not made publicly available to everyone in the group by the listserv or on the MOO. On the other hand, public on-line conversations included messages posted to the class listserv and to the MOO, whether the posting was directed to one person or to the group at large (Topper, 1997). The private e-mail communication and the public listserv communication are asynchronous, while the public MOO communications are synchronous.

Interactional Spaces on the Listserv

In an effort to understand the ways in which student interactions influenced opportunities for learning, how students negotiated common tasks on the class listserv—Responding to Journals and Reading Instructor Responses—was examined. Data for this analysis were selected from key events occurring in the class listserv during the second week of the class (Jan 25, 1999), which was the first week the students were given tasks to complete.

The listserv events chosen are Events 3 and 5 in the sequence of completing the weekly cycle of activity. In the taxonomic analysis, Table 15, the sequential relationship of these stages/events to the weekly activities was shown. These events will be referred to as Protagonist because the focus of the precis summary to be completed in week two was on identifying the personality traits of the protagonist that influenced his/her actions in the story. (The journal content and the focus of the activities by week can be seen in Table 16.)
As shown in Table 15, the stages/events in completing the weekly activities were:

Stage/Event 1 - Reading preparatory material.
Stage/Event 2 - Posting a journal to the listserv
Stage/Event 3 - Responding to another's journal on the listserv
Stage/Event 4 - Complete/submitting weekly on-line quiz
Stage/Event 5 - Reading Instructor's responses to student journals and responses
Stage/Event 6 - Attending/participating in the MOO discussion
Stage/Event 7 - Posting a response to the MOO discussions

The stages focused on here are stages three and five, both occurring on the listserv. Prior to these events, students have completed Event 1 (the readings) and have created and posted a summary as a journal to the listserv in Event 2. Completing and submitting the quiz on-line is event four. This stage occurs between the examples that follow, but it involves no student interaction. The key events selected for presentation met the criteria set forth by Tuyay, Jennings, & Dixon (1995): (a) they were representative of the type of discourse patterns and collaborative tasks observed throughout the semester, (b) communication of the self-selected respondents to the original journals and the instructor responses to original journals and respondents helped to make visible the teacher and student roles and relationships in the process of knowledge construction, and (c) they were representative of the patterns of co-construction of knowledge found within and across the range of interactional spaces constructed in this community.

The interactions, collaboration, and discourse patterns which occurred during the chosen Protagonist events were representative of the type of discourse patterns and
collaborative tasks made visible by the analyses throughout the semester. These analyses uncovered a range of interactional spaces constructed by the members of this class over time. "As students move in and out of these varied interactional spaces their ideas about a common task are shared and reshaped" (Brillant-Mills, 1993, p. 311).

Like Tuyay, Jennings, and Dixon (1995), this study found patterns of interaction in which (a) individual students commented on or critiqued the work of another, (b) individual students contributed candidates for inclusion in the work of another, and (c) a non-copresent other commented, critiqued, or contributed to the work of others. The examples that follow are from the listserv interactions of Events 3 and 5 for the Protagonist cycle of activity.

Table 30 is an example on the listserv where an individual student commented on or critiqued the work of another. A requirement of the course was to respond to a journal posted by another student on the listserv. The journal responded to could not be on the same reading as the one on which the respondent had created his/her journal.

In Table 30 the response posted by AliceA represents an individual student commenting on the work of another (TerryP). They are discussing *The Birthmark* by Nathanial Hawthorne. This interaction is socially significant in that posting a journal and responding to it is an acceptable activity and fits in with the community's norms and expectations (i.e., responding to the journals is part of the structure of the weekly cycle of activity).

The response in Table 30 also follows the workshop ground rules posted on the web by the instructor. Such interactions (i.e., responding to a journal and offering positive comments or criticisms) became a pattern of practice over time. This interactional unit of
### Table 30

**Individual Commenting On or Critiquing the Work of Another**

<table>
<thead>
<tr>
<th>Interactional units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>States purpose of character’s life</td>
<td>TerryP 485-488 1/26/00</td>
<td>001. Aylmer’s purpose in life was to try to make things better, 002. like the invention of electricity.</td>
</tr>
<tr>
<td>Explains how it affected him</td>
<td>00:51:32</td>
<td>003. It became his flaw, 004. however, 005. when he stopped seeing the good in things and just saw how he could make them better. 006. He would never be able to be happy with anything that way.</td>
</tr>
<tr>
<td>Summarizes</td>
<td>AliceA 570-573 1/26/99 12:05 p.m.</td>
<td>007. I liked your response to the question of the idea of the story. 008. I agree with your response that you need to see beauty in everything. 009. If only more people followed that saying, 010. wouldn’t the world be a better place? 011. I think Hawthorne’s point really came across in this story.</td>
</tr>
<tr>
<td>Confirms and agrees</td>
<td>Prof 4218-4225 1/28/99 08:58 a.m.</td>
<td>012. I’m going to disagree here with this. 013. I don’t think there can be beauty in everything. 014. Somethings are inherently ugly (or use another word of your choice). 015. If we look for the ‘beauty in everything’ in Almeyer’s actions, 016. then we have to look for the beauty in how his obsession and lack of acceptance made his wife a lab experiment that resulted in her death. 017. I just can’t bring myself to see any beauty in that. 018. It wasn’t love that drove him, 019. but it was obsession and lack of acceptance.</td>
</tr>
</tbody>
</table>

---

Journal Posted

Response Posted

Instructor Feedback

Teacher disagrees

Gives explanation

Expands his statement and ties back to plot of story

Summarizes
Table 30 also demonstrates intertextuality. When TerryP posted her journal to the listserv, she was proposing it; AliceA then recognized and acknowledged it by reading it and replying to it. It is also socially significant.

Table 31 contains an example of an individual student contributing a candidate for inclusion in the work of another. SamuelM was responding to CarrieM's journal about *Young Goodman Brown*. This was also a common pattern of practice that was socially significant and shaped by over time interactions.

Table 32 (and Table 30) demonstrate a pattern of social construction wherein a non-copresent other (the instructor) commented, critiqued and/or contributed to the interactional space of the dyad discussion. The initial interactions occurred between two students: one who posted the journal and one who posted the response. When the instructor provided feedback to these postings, his responses constituted a non-copresent other commenting, critiquing, or contributing to the original interaction. This interaction was also acceptable and a common pattern throughout the listserv communications during the semester. Members developed expectations about the instructor's responses (i.e., timing, tone, content, etc.). Whenever the instructor responded to a student’s journal or a student’s response to a journal, the instructor’s communication was available to all on the listserv. This provided an opportunity for all students to learn from these postings. By taking the time to access the listserv and read the instructor’s feedback on the weekly postings, students could take advantage of this opportunity to learn.

It is interesting to note that multiple interactional spaces may coexist on the listserv. Multiple groups can work on individual or common tasks at the same time, or individual students can interact with peers while simultaneously participating in the whole class event.
Table 31

Individual Contributing a Candidate for Inclusion in the Work of Another

<table>
<thead>
<tr>
<th>Interactional units</th>
<th>Speaker</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>States message of the story</td>
<td>CarrieM 51-59</td>
<td>Journal Posted 001. People are not always what they appear to be 002. Some acclaimed Christians are worse than the agnostics.</td>
</tr>
<tr>
<td>Expands</td>
<td></td>
<td>003. The pious persons from our churches could we be the evil person who in the name of God persecutes and punishes the innocent, 004. or those who don't agree with their faith.</td>
</tr>
<tr>
<td>Summarizes</td>
<td>SamuelM 1639-1651</td>
<td>005. This is not real Christianity. 006. Real Christianity is not prejudice</td>
</tr>
<tr>
<td>Agrees and expands</td>
<td></td>
<td>Response Posted 007. You picked up on what to me is a crucial theme of the story: 008. the hypocrisy that is so prevalent among religious zealots.</td>
</tr>
<tr>
<td>Connects author's background to plot of story</td>
<td></td>
<td>009. Considering Hawthorne's Quaker background, 010. I wonder whether he wasn't making a statement about the Church as an institution rather than individual members.</td>
</tr>
<tr>
<td>Expands on author's purpose</td>
<td></td>
<td>011. Moreover, 012. I wonder whether the author's resolution of the story wasn't a testament to the extraordinary power of religious indoctrination: 013. apparently Brown never even attempts to resolve his muddled understanding of the events that so dramatically altered his belief system and his life, 014. not confronting even his own wife.</td>
</tr>
<tr>
<td>Tie back to story</td>
<td></td>
<td>015. Instead, 016. he carries the burden of his uncertainty alone, 017. even as the same &quot;faith&quot; that had once ennobled and emboldened him now destroys him.</td>
</tr>
<tr>
<td>Summarizes</td>
<td></td>
<td>018. &quot;Don't ask question&quot; has always been Rule No. 1 for religious enslavement.</td>
</tr>
</tbody>
</table>
Table 32

Non-copresent Other Commenting on Work of Others

<table>
<thead>
<tr>
<th>Interaction units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>States purpose of character’s life</td>
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<td>001. Aylmer’s purpose in life was to try to make things better,</td>
</tr>
<tr>
<td>Explains how it affected him</td>
<td>00:51:32</td>
<td>002. like the invention of electricity.</td>
</tr>
<tr>
<td>Summarizes</td>
<td></td>
<td>003. It became his flaw,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>004. however,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>005. when he stopped seeing the good in things and just saw how he could make them better.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>006. He would never be able to be happy with anything that way.</td>
</tr>
<tr>
<td>Confirms and agrees</td>
<td>HelenaA 500-504 1/26/00</td>
<td>007. What you said in #2 was interesting.</td>
</tr>
<tr>
<td>Builds on idea</td>
<td>08:57:12</td>
<td>008. He didn’t see everything as it was,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>009. he only saw how he could make it better,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>010. which became his flaw.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>011. Ironic how in his search for perfection,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>012. he made himself imperfect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>013. I think that maybe because all of his other experiments weren’t as great as he wanted them to be,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>014. he had to make up for them by creating the perfect woman.</td>
</tr>
<tr>
<td>Teacher reinforces and summarizes</td>
<td>Prof 4132-137 1/28/00</td>
<td>015. It’s the flaws of this sort that make fiction interesting and worth reading.</td>
</tr>
<tr>
<td>Expands concept to broader view of literature</td>
<td>08:55:50</td>
<td>016. If these two had a good marriage,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>017. and Almeyer was more accepting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>018. we wouldn’t have this great allegory for the notion that the things that drive man to progress,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>019. at least technologically.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>020. can also be the things that bankrupt his soul.</td>
</tr>
</tbody>
</table>
The weekly listserv postings were interwoven and represented multiple journal postings, journal responses, and instructor responses. Individual students interacting with a peer were simultaneously presenting their communication on the listserv for the entire class. An example of an index of the weekly listserv postings is discussed in Chapter 3.

Typical interactional spaces used throughout the semester and over time developed into patterns of practice for the community. Through these interactions, members contributed to the construction of each other's knowledge and tasks. Through their online communications, students had the opportunities to enhance and modify their thinking and improve their writing and understanding of literature. They negotiated social relationships, acquired norms and expectations, and took on the roles and relationships of participants interacting in this community.

Analysis of the indexes of weekly listserv postings (See Chapter 3 Data Analysis) revealed a few ways members of this class interacted with one another on the listserv. These indexes illuminated the patterns of discourse in particular interactional spaces that the class members used to communicate. The members over time considered it a normal practice to learn through tasks that were created individually and negotiated online with others, with the instructor, or with the whole group (i.e., Instructor comments were read and could be commented on by all.) They expected to give and receive comments or critiques on student work, contribute and receive candidates for inclusion in the work, and learn from each other.
Interactional Spaces in the E-mail

The communications that occurred in this on-line classroom defined what it meant to be a student or a teacher within a particular set of interactions, with a particular group of participants, for a particular purpose or task, and in a particular time and space. Although both the listserv and the e-mail media are asynchronous, the interactional spaces and the social rules for participating in them differ. Unlike the listserv and the MOO sessions, e-mail offered private communications to the participants of this class. This privacy spawned different purposes for the communications and different characteristics of the interactional spaces as to who could do or say what, to or with whom, for what purpose, when and where, under what conditions, and with what potential outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1997). The organizational patterns and patterns of discourse within the interactional spaces varied by purpose and mode of communication.

The literature indicated that private conversations conducted on e-mail were similar to side conversations in face-to-face discourse, but not as disruptive as the latter can be (Topper, 1997). Although this analogy may be true of some of the students' private e-mail, the instructional design of the class required the use of e-mail for many task-oriented activities throughout the semester. For example, in the first essay assignment, the instructor assigned three or four students to peer groups tasked to provide feedback on each other's essays prior to submitting them to the instructor for credit. The instructor then provided the students with feedback on their essay and allowed them to redo and resubmit the essay within a specified time frame and receive credit for the resubmission. All of these tasks were completed using e-mail. The e-mail communication among assigned peer group members was designed to be task-oriented and occurred
asynchronously therefore, it was not disruptive to the interactions of other class members. It provided additional opportunities for student learning because the students interacted with their peers and the instructor to shape and reshape their understandings of the assigned readings. This development of a student's knowledge by interactions with others has the potential to increase that student's knowledge beyond what he/she could accomplish alone. This is an example of the application of Vygotsky's zone of proximal development. Chapter 2 contains a more thorough discussion of the zone of proximal development.

Private student-to-student e-mail was not available to the researcher, but its use was designed to provide the opportunity for individual students to comment or critique the work of another, to contribute candidates for inclusion in the work of others, to collaborate on assignments, and as a forum for personal exchanges that built rapport and nurtured student feelings of belonging in the virtual classroom.

In addition to receiving, commenting on, and critiquing the student's work, the e-mail communication between the instructor and individual student provided interactional spaces in which he provided assistance in working out the technical problems with the media, provided help and advice on learning the course concepts, and listened to and addressed students' personal concerns and problems. Although at times the instructor sent e-mail to several students with one message, the majority of the e-mail was one-on-one. The nature of these individual student encounters with the instructor varied by purpose, organizational pattern, and patterns of discourse. An example of the use of e-mail for technical problems is shown in Table 33.
Table 33

Technology-related Instructor-student E-mail

<table>
<thead>
<tr>
<th>Interaction units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address Prof</strong></td>
<td>BettyA</td>
<td>E-mail Sent                                                                                           001. Hi Prof,</td>
</tr>
<tr>
<td><strong>State Problem</strong></td>
<td></td>
<td>002. I have tried to submit journal #1 several times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>003. Can't figure it out</td>
</tr>
<tr>
<td><strong>Evidence of problem</strong></td>
<td></td>
<td>004. It does not appear that you all have received it.</td>
</tr>
<tr>
<td><strong>Suggest temporary solution</strong></td>
<td></td>
<td>005. I am e-mailing you my journal responses direct and am going to try the journal entry to</td>
</tr>
<tr>
<td><strong>Requests help</strong></td>
<td></td>
<td>the whole class one more time.</td>
</tr>
<tr>
<td><strong>Signature</strong></td>
<td>Professor</td>
<td>006. Any suggestions??</td>
</tr>
<tr>
<td><strong>Address Student By name</strong></td>
<td></td>
<td>007. BettyA</td>
</tr>
<tr>
<td><strong>Jan 29</strong></td>
<td>BettyA</td>
<td><strong>Professor Feedback</strong></td>
</tr>
<tr>
<td><strong>8:23 a.m.</strong></td>
<td></td>
<td>008. BettyA</td>
</tr>
<tr>
<td><strong>Lines 121-130</strong></td>
<td></td>
<td>009. I'm not sure what the trouble might be.</td>
</tr>
<tr>
<td><strong>Saw no problem</strong></td>
<td></td>
<td>010. I did receive your response to someone else's journal,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>011. so I assume you just hit 'reply' on that one.</td>
</tr>
<tr>
<td><strong>Suggests cause of problem</strong></td>
<td></td>
<td>012. This could mean you are sending the journals to the wrong address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>013. Just in case,</td>
</tr>
<tr>
<td><strong>Gives possible resolution</strong></td>
<td></td>
<td>014. here is where the journals should go:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>015. <a href="mailto:e111@profcollege.edu">e111@profcollege.edu</a>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>016. If that's not the problem,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>017. I'm not sure what might be going on.</td>
</tr>
<tr>
<td><strong>States other steps he took to resolve problem</strong></td>
<td></td>
<td>018. I checked your information on the list and it seems to be correct,</td>
</tr>
<tr>
<td><strong>Suggests resolution</strong></td>
<td></td>
<td>019. so that's not the problem.</td>
</tr>
<tr>
<td><strong>Requests feedback</strong></td>
<td></td>
<td>020. Try the address as I have it above and let me know how it goes.</td>
</tr>
<tr>
<td><strong>Signature</strong></td>
<td></td>
<td>021. Prof</td>
</tr>
</tbody>
</table>
Students used e-mail to get assistance from the instructor for personal problems encountered with the technology (Table 33). The instructor assisted in the problem resolution by giving her the response address again, verifying her listserv information was correct, and asking for feedback on problem resolution.

**Interactional Spaces in the MOO**

Interactional spaces in the MOO and on the listserv were never really individual to individual since all messages in these media were viewed by the collective group. In other words, multiple interactional spaces coexisted. An individual directed a message to an individual while simultaneously sending the message to the collective (Heras, 1994). In this situation, the class norm allowed anyone to answer any posting or message they observed on the listserv or the MOO. This resulted in members directing communication to an individual and getting responses or help from others. This common pattern of practice was characteristic of the open communications that were the norm in this community.

**The Structure of the Interactional Spaces**

To focus on the structure of the participants' interactions, the analyst used questions adapted from Shultz, Florio, and Erickson (1982). These questions investigated interactions by looking at the number of people talking at one time, the kinds of roles played by the participants, and the number of distinct conversations occurring at the same time. As Shultz, Florio, and Erickson (1982) summarize, either there is one person talking or more than one talking at once; either all persons play equivalent roles or they do not; and either there is only one conversational floor or there is more than one.
Due to the asynchronous nature of e-mail all communications involved only one participant at a time. The medium did not allow for multiple participants interacting simultaneously. The instructor responded to a message sent to him. At times he replied to two or more students by addressing his e-mail to multiple recipients.

The asynchronous nature of the listserv communication was slightly different from the e-mail communication. Messages posted to the listserv were seen by all regardless of the addressee. Therefore, listserv communication involved asynchronous conversations in which participants were merely observers reading the message or they participated in the conversation by posting a response. Journals were posted from one student to all on the listserv. Responses to these journals were usually directed to the individual who posted the journal, but anyone reading the listserv posting was free to comment. Instructor comments were generally directed to a single student, but were to be used by all students as an opportunity to learn from the postings.

The synchronous nature of the MOO sessions provided conversations that resembled face-to-face interactions in many respects. There were a lot of overlapping conversations occurring among the on-line participants. However, there generally was one predominant thread of conversation intertwined among the lesser activities that were occurring. The following examples of the different structures of interactional spaces focus on the variations of these predominant conversational threads and set aside, for now, the fact of intertwined postings.

The first organizational structure of an interactional space in the MOO sessions involved a small group with one student playing a predominant role. An informal conversation was conducted among the students, prior to the instructor’s arrival. As they
logged in and greeted each other, one student seemed to take the leading role, providing
comic relief, initiating conversations, and sharing her knowledge and experience of the
MOO with others. She answered questions, used emotes, and introduced new
terminology. Others participated in the conversation in a friendly manner, getting
acquainted with each other.

CarrieM 001. sits down on the bench to eat her pizza
EmerilF 002. teleports in.
CarrieM 003. waves hi to EmerilF
EmerilF 004. hello
CarrieM 005. EmerilF @describe yourself...
006. kewl
CarrieM 007. continues to munch on her pizza
CarrieM 008. want some
CarrieM 009. pizza that is
CarrieM 010. hands some of her pizza to EmerilF

In the following dialogue, in message unit 13, Bullet_guest joined the group. She
changed her name in message unit 15, checked to see that her postings were appearing on
everyone’s screen (message unit 15), and used an emoticon as she thanked them (message
unit 17).

CarrieM 011. anyone know how to create chairs ect?
CarrieM 012. stands
Bullet_guest 013. teleports in.
CarrieM 014. jumps
TerryP 015. Hi everyone, can you guys see this?
CarrieM 016. yes
TerryP 017. Thanks :)

As can be seen in the following dialogue, LindaM also appears to have prior
knowledge of MOO commands. She logged in after CarrieM had introduced and
explained the MOO command, @describe, to the others. When TerryP had a problem
with using this command, it was LindaM who provided assistance by suggesting a possible
problem resolution.
LindaM 018. teleports in.
CarrieM 019. if you type @describe
20. you can describe what you look like
TerryP 021. Okay
CarrieM 022. then when you type look TerryP
023. it will tell us what you look like.
LindaM 023. Hello everybody
TerryP 024. I tried it and it says it doesn’t understand
LindaM 025. use the @ sign before describe

CarrieM and LindaM carried on the conversation using emotes and discussing other virtual rooms on this MOO. LindaM explained that she does have some prior experience with the MOO, since she attended one of Prof’s classes last semester.

CarrieM 026. pours her diet pepsi in a tall clear glass
TerryP 027. I did
CarrieM 028. would you like some?
LindaM 029. (asks) CarrieM ....
030. have you been exploring?
CarrieM 031. sort of
CarrieM 032. have you
LindaM 033. Merry,
034. I took one of Prof’s classes last semester,
035. so I did look around a little then
LindaM 036. there never seems to be anyone else in the rooms ...
037. except for the punk in the bathroom
CarrieM 038. LindaM
039. isn’t this awesome
LindaM 040. I think it’s great

As they continued their talk of the virtual bar, CarrieM used and explained MOO terminology (i.e., mush).

CarrieM 041. Wow a mush class and did you see the bar
CarrieM 042. laughs
LindaM 043. (asks) mush?
CarrieM 044. I have never drank and I thought it was funny to have a virtual drink
LindaM 045. I did see the bar,
046. but was afraid to order anything but a coke
CarrieM 047. LindaM
048. also called moos they are the same
Carrie 049. Oops,
050. I mean they are also called Moos

The group environment of the MOO made these before-class events and terminology available to all. Those who were not currently logged in and reading it on their screens could read their listserv messages and the MOO log posted there by the instructor shortly after this session.

The second organizational structure of an interactional space in the MOO sessions involved the instructor as the leader and focus of the dialogue in on-task and process-oriented conversation. The events occurring when the instructor first entered the MOO session in week two are shown in Appendix F. In this conversational structure, the role of the instructor was to exchange greetings with the students, answer student class task questions, answer student process questions, provide direction on what constituted acceptable behavior in the MOO (no chair building, okay to set up describe for yourself), verify students were on the class role, give help and instructions on using MOO commands, explain any unusual situations that may have affected student access to the online resources, and, at the end of the MOO, inform students when it was time to end the MOO. The discussion in the Onset of Community section provides more detail on these events.

In this same example, the role of the student was to greet the instructor, ask him task-oriented questions, ask him process-oriented questions, exchange goodbyes, and logoff when the instructor signaled it was the end of the MOO. (See also a detailed description of these activities in the Onset of Community section.) In this interactional space, students were free to answer other students' questions even though they were directed to the
instructor. The instructor asked students for answers to questions with which he was not familiar. Not all students were participating in the conversation. Students that were logged on chose to only observe the conversation or to participate in it. Students and the instructor could also choose to whisper to individual participants without others seeing their messages on-line. In this mode the MOO commands allowed private conversations to occur without the knowledge of the others. These private interactions were not available to the researcher because they were not recorded nor visible with the MOO postings. Only those whisperings in which the researcher was a participant were seen by her.

A third type of structure in an interactional space in the MOO sessions was a conversation in which the instructor and the students participated on an equal level and the topic was socially-oriented rather than task-oriented. The initiation and beginning dialogue of this conversation were presented in the discussion of the Onset of the Community. The instructor and students interacted in the real-time group environment of the MOO and all were free to share personal experiences, feelings, and family matters. The role of the instructor was to build a relationship with the students. To do this he shared data on the upcoming birth of his and his wife's first baby. He did not initiate this topic. It was posed by one of the students. Students then shared their own personal family situations and experiences with babies. The role of the students was to share their own personal experiences and data. Some students did not participate and chose to only observe the dialogue on-line.

The fourth example of an interactional space on the MOO occurred when the students and the instructor were involved in the on-task activity of analyzing the week's readings.
In two sections in this chapter, Changing the Topic and Choosing a Reading, and Discussing and Analyzing the Weekly Readings, an in-depth discussion of how these activities were conducted and shaped both in-the-moment and over time was provided.

In these interactional spaces, the students took on the role of the instructor and initiated the on-task behavior of discussing the readings and choosing the reading with which to begin. Over time they initiated this action even before he joined them in the MOO. During the reading discussions, the instructor continually facilitated the discussion by asking questions designed to encourage students to use their personal knowledge and experiences to understand the story. He provided positive reinforcement and respect for the students’ comments and insights into the stories, monitored that all students got their names changed when they logged in so they could receive credit for MOO attendance, and provided instructions to the students on how to change their names if needed. He also provided the students with opportunities for learning by asking questions that fostered student comprehension and encouraged intertextuality and intercontextuality. In addition, he monitored and addressed any violations of this pattern of interaction. One such violation is discussed in Breaking the Culture (Collins & Green, 1992).

**Breaking the Culture**

Classroom life becomes patterned and invisible to its members until an event challenges the norm (Collins and Green, 1992). Members were discussing readings, providing feedback, comments and insight to others, using the instructor’s questions to understand the stories, participating in the discussion, and asking on-task questions when these developing norms were challenged. The following event occurred in the first MOO when students were discussing *Young Goodman Brown* and was an apparent challenge to
the norm of discussing and analyzing the weekly readings in the MOO by sharing personal experiences and knowledge to understand the literature.

This potentially divergent event was *proposed* when a student asked: "is this what we're going to be doing each Wednesday evening? Seems pedantic". This posting was immediately *recognized* by the response of two students. HildaT posted "pedantic??" and CarrieM posted "EH?". The instructor *acknowledged* this apparent challenge to the norms for discussing the readings when he asked: "how is discussing what we read pedantic?" This potentially divergent event was *socially significant* because of its challenge to the cultural norms. Analyzing this dialogue with an eye to applying Bloom and Egan-Robertson's (1993) criteria makes visible how SamuelM gained the floor and changed the topic of the conversation. It was proposed, recognized, acknowledged, and socially significant. The continuing dialogue is in Table 34.

During this incident, the students reacted to this apparent challenge to the norms (i.e., that discussing the readings was not appropriate) by seeking a definition of pedantic and even looking it up in the dictionary. As the norms were challenged, the students showed their group cohesion by joining together to defend them. The entire collective was discussing this new topic of conversation. This episode demonstrates what Agar (1994) calls a *rich point* in cultural studies. That is, an episode which gives evidence that a fundamental concept is supported. The concept in this situation is that the norms of the community become accepted practice and invisible to the members until an event which challenges them makes them visible.

In the second interactional unit of Table 34 the concern of the group turned to concern for SamuelM. One student used emotes to try and lighten the mood when she let her
<table>
<thead>
<tr>
<th>Interactional units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reacting to the</td>
<td>BonnieL, LindaM</td>
<td>001. what is pedantic?</td>
</tr>
<tr>
<td>event - looking for</td>
<td></td>
<td>002. it's not pedantic,</td>
</tr>
<tr>
<td>a definition</td>
<td></td>
<td>003. we're discussing interpretations of the stories</td>
</tr>
<tr>
<td>Looked up in</td>
<td>CarrieM, HildaT</td>
<td>004. dictionary meaning pedantic</td>
</tr>
<tr>
<td>dictionary</td>
<td>TammyK</td>
<td>005. scratches her head</td>
</tr>
<tr>
<td></td>
<td>HelenaA</td>
<td>006. I can't say either way,</td>
</tr>
<tr>
<td>another definition</td>
<td></td>
<td>007. I didn't really get the story</td>
</tr>
<tr>
<td>Not pedantic</td>
<td>CarrieM, LindaM</td>
<td>008. pedantic basically means sticking to the books,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>009. no original thought</td>
</tr>
<tr>
<td>States reason want</td>
<td>HildaT</td>
<td>010. definitely not pedantic then</td>
</tr>
<tr>
<td>to know meaning</td>
<td></td>
<td>011. pedantic-parading one's learning,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>012. discussing trivial details</td>
</tr>
<tr>
<td></td>
<td></td>
<td>013. hey...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>014. I'm a perfectionist..</td>
</tr>
<tr>
<td></td>
<td></td>
<td>015. rules are my thing!!</td>
</tr>
<tr>
<td>Notices Samuel is</td>
<td>GinaJ, CarrieM</td>
<td>016. What happened to SamuelM??</td>
</tr>
<tr>
<td>quiet</td>
<td>BonnieL, SusanS</td>
<td>017. (she) lets her ferret go on the floor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>018. what happened to the story?</td>
</tr>
<tr>
<td>Proposes topic</td>
<td>GinaJ</td>
<td>019. are we still on the word pedantic</td>
</tr>
<tr>
<td>change</td>
<td>HildaT</td>
<td>020. Can we go to the next story?</td>
</tr>
<tr>
<td>Recognizes proposal</td>
<td>HelenaA</td>
<td>021. it got lost in the dictionary</td>
</tr>
<tr>
<td>proposal</td>
<td>DeeJ</td>
<td>022. ok moving on</td>
</tr>
<tr>
<td>Acknowledges</td>
<td>CarrieM</td>
<td>023. is Prof still in here?</td>
</tr>
<tr>
<td>proposal and tries</td>
<td>LindaM</td>
<td>024. Faith means trust</td>
</tr>
<tr>
<td>to start on ygb</td>
<td></td>
<td>025. right</td>
</tr>
<tr>
<td>Not socially</td>
<td></td>
<td>026. so think of how that really ties this in</td>
</tr>
<tr>
<td>significant yet stay</td>
<td></td>
<td>027. no, let's do another story –</td>
</tr>
<tr>
<td>off-task</td>
<td></td>
<td>(The off-task discussion continues in Table 35)</td>
</tr>
</tbody>
</table>
imaginary ferret run on the floor. One interpretation that could be made of message unit 24 when CarrieM says, "Faith means trust right so think of how that really ties this in" is that she is proposing that Faith (Young Goodman Brown's wife in the story and, by definition, trust) be tied in with the current discussion. She is intertextually tying the reading to the current discussion. There seemed to be some confusion and then GinaJ proposed they go on to the next story (i.e., back to on-task discussion). Several of the students proposed and recognized that they wanted to move on to the next reading, but the suggestion was not immediately acknowledged when it was proposed and it took a couple of tries before the members were able to return to on-task activities.

The dialogue continued and is shown in Table 35. After their initial reactions to what the student had said, they defended his right to have a differing opinion and a right to voice that opinion. Most of the students showed empathy toward the offender and were conciliatory in their reaction to his inappropriate behavior that disrupted the discussion of Young Goodman Brown. Students are compensating for the lack of visual cues by using emotes to jokingly address the situation. Although SamuelM has not replied since the original reaction of the group to his comment, in message unit 33 he uses an emote to express his feelings. He does not post again, he lurks (i.e., listens but does not participate), until he logs off later at the end of the MOO. In the end, students had shown group cohesion, the instructor had addressed the inappropriate behavior and, at the same time, further defined appropriate student behavior while discussing the readings.

Application of domain analysis (Spradley, 1980) revealed several types of interactional spaces (strict inclusion domain) that members in this community encountered. Individual students asked the instructor for help and advice on course concepts, technical issues, and
<table>
<thead>
<tr>
<th>Interactional units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposes change</td>
<td>LindaM</td>
<td>001. no,</td>
</tr>
<tr>
<td>Addresses Challenge</td>
<td>Prof</td>
<td>002. let's do another story</td>
</tr>
<tr>
<td></td>
<td></td>
<td>003. we could,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>004. but I thought SamuelM might want to explain why</td>
</tr>
<tr>
<td></td>
<td></td>
<td>He thought a discussion was pedantic</td>
</tr>
<tr>
<td>Conciliatory</td>
<td>GinaJ</td>
<td>005. Poor SamuelM,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>006. he asks a question and gets jumped on</td>
</tr>
<tr>
<td>Propose topic change</td>
<td>CarrieM</td>
<td>007. time for the House of Usher</td>
</tr>
<tr>
<td></td>
<td>GinaJ</td>
<td>008. I think he ran away</td>
</tr>
<tr>
<td></td>
<td>LindaM</td>
<td>009. no jumping,</td>
</tr>
<tr>
<td>Supports his differing opinion</td>
<td>Prof</td>
<td>010. just differing opinions of what's going on</td>
</tr>
<tr>
<td>Uses emote</td>
<td></td>
<td>011. no,</td>
</tr>
<tr>
<td>Proposes change</td>
<td>HildaT</td>
<td>012. he's here</td>
</tr>
<tr>
<td>Supports Prof</td>
<td>HelenaA</td>
<td>013.(she) laughs</td>
</tr>
<tr>
<td></td>
<td>DeeJ</td>
<td>014. house of usher was hard to follow</td>
</tr>
<tr>
<td>Uses emote</td>
<td></td>
<td>015. I would have liked to know why he thinks that too</td>
</tr>
<tr>
<td>Conciliatory remarks</td>
<td>CarrieM</td>
<td>016. especially since we are tolking opinions here anyway</td>
</tr>
<tr>
<td>humor</td>
<td>GinaJ</td>
<td>017. gives SamuelM a pat on the back</td>
</tr>
<tr>
<td>Makes joking mode visible by using emotes.</td>
<td>CarrieM</td>
<td>018. I want to know too,</td>
</tr>
<tr>
<td></td>
<td>DeeJ</td>
<td>019. but I figured he was out numbered</td>
</tr>
<tr>
<td></td>
<td>BonnieL</td>
<td>020. got us going huh</td>
</tr>
<tr>
<td></td>
<td>HildaT</td>
<td>021. voice your opinions or ideas SamuelM</td>
</tr>
<tr>
<td></td>
<td>CarrieM</td>
<td>022. SamuelM are you there?</td>
</tr>
<tr>
<td></td>
<td>HildaT</td>
<td>023. jokes at SamuelM</td>
</tr>
<tr>
<td></td>
<td>HelenaA</td>
<td>024. its okay SamuelM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>025. we promise not to bite</td>
</tr>
<tr>
<td></td>
<td>HildaT</td>
<td>026. bites SamuelM</td>
</tr>
<tr>
<td></td>
<td>Prof</td>
<td>027. unless of course you bite first</td>
</tr>
<tr>
<td>Proposes topic change</td>
<td></td>
<td>028. well,</td>
</tr>
<tr>
<td>Uses emotes and jokes</td>
<td>HelenaA</td>
<td>029. it seems people want to move on--</td>
</tr>
<tr>
<td></td>
<td>DeeJ</td>
<td>030. to the house of usher?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>031. (exclaims) just kidding!</td>
</tr>
<tr>
<td></td>
<td>SamuelM</td>
<td>032. lol HelenaA</td>
</tr>
<tr>
<td></td>
<td>GinaJ</td>
<td>033. bleeds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>034. Well</td>
</tr>
<tr>
<td>Agrees with Prof</td>
<td></td>
<td>035. Prof</td>
</tr>
<tr>
<td>not pedantic</td>
<td></td>
<td>036. just for the record</td>
</tr>
<tr>
<td>Uses emotes and</td>
<td></td>
<td>037. I don't think it is pedantic</td>
</tr>
<tr>
<td>Jokes with- Ferret</td>
<td>CarrieM</td>
<td>038. ferret runs up to Michael</td>
</tr>
<tr>
<td></td>
<td>Prof</td>
<td>039. put a leash on the ferret please--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>040. can't have it running loose in here</td>
</tr>
<tr>
<td></td>
<td>DeeJ</td>
<td>041. it helps me to clear things up</td>
</tr>
<tr>
<td></td>
<td>LindaM</td>
<td>042. okay guys,</td>
</tr>
<tr>
<td>Supports right to opinion</td>
<td></td>
<td>043. leave SamuelM alone,</td>
</tr>
<tr>
<td>Proposes change</td>
<td>HildaT</td>
<td>044. it's an open forum and he's entitled to an opinion</td>
</tr>
<tr>
<td>Uses emotes and</td>
<td>CarrieM</td>
<td>045. house of usher sounds good to me...</td>
</tr>
<tr>
<td>comdies</td>
<td></td>
<td>046. I love Poe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>047. grasps up her ferret and pets him</td>
</tr>
</tbody>
</table>
conceptual issues via e-mail (individual) and on the MOO (group). They also asked for help on conceptual issues and technical issues from the collective on the MOO (group), and shared personal data and/or experiences with individual(s) and the group on the MOO. This later example was off-task, but was an important component of building rapport in this community. The instructor also shared personal data and/or experiences with individual(s) and with the group on the MOO (off-task, but building rapport). The students worked individually when they created their journals on the listserv and in dyads on the listserv as they exchanged responses. They also worked with the instructor and the group when they read his feedback on the listserv.

In summary, findings that were presented in this section, Constructing the Social Culture of a Distance Education Classroom, related to answering the first research question posed: How do the interactions of the participants in an on-line classroom construct the social culture of a distance education classroom? Discussion and examples within this section addressed the cycles of activity, onset of community, patterns of practice, interactional spaces, and an event of breaking the culture.

In the first section, the activities that composed the semester and the weekly activities (i.e., the cycles of activity) were presented and discussed. The focus of the activities that students participated in weekly and the media they used to accomplish the tasks necessary to complete these activities were discussed. These findings were intended to provide the reader with evidence of the social structure of life in this classroom. As students acted and interacted within these activities, they developed a common knowledge of who could do or say what, to or with whom, for what purpose, under what conditions, when and
where, and with what outcomes (Collins & Green, 1992; Green & Meyer, 1991; Putney, 1991).

*How* the members of the community interactionally created the attributes that characterized life in their on-line classroom was presented next. Findings from the Onset of the Community were intended to provide the reader with evidence of how the interactions of the participants worked together in-the-moment to build the characteristics of this community. These findings were used to make visible how the dynamic construction of the community began with the first real-time meeting of the collective. This first coming together of the collective was the onset of the development of the attributes of this community.

Patterns of practice and interactional spaces were then discussed to provide the reader with evidence of the historical dimension of life in this on-line class. Specific practices were presented with an eye to making visible how the events that occurred in-the-moment and throughout the semester developed into accepted practices for the class: how members changed the topic and chose a reading, how members shared resources to discuss and analyze the weekly readings, and how the members developed an understanding of the meaning of an object of the MOO, the Big Sign. Examples and discussion of the over-time construction of the development of roles and relationships among the members and the development of an understanding of the rights and responsibilities of the participants were presented.

The discussion of interactional spaces focused on the environment within which the members were interacting throughout the semester. This discussion was intended to provide the reader with evidence of how class members engaged in interactions with other
class members in e-mail, the listserv, and the MOO and developed understandings of
community membership requirements through the related cycles of activity in these
environments. Results from the analysis of an event in the MOO in which the students
worked together to maintain the norms and practices were also presented. These findings
were supported with exemplars from the data. A discussion of findings on the structure of
these interactional spaces presented examples relating to the different organizational
structures of the conversations of the participants. This also led to identifying existing
roles, norms, relationships, and expectations of the members of this community.

Compensating for the Lack of Visual and Non-verbal Cues

The review of the literature identified a major difference between on-line and face-to-
face interactions that has the potential to interfere with communication in an on-line
classroom. The traditional face-to-face communication is accompanied by visual and non-
verbal cues, such as body language, verbal pauses, and change in voice inflections. These
cues are non-existent in on-line communications (Hiltz, 1988, 1994; Hiltz & Turoff, 1978,
1994).

Findings of the analyses that show how the members of this on-line classroom
compensated for the lack of visual and non-verbal interactions present in traditional
classrooms will be presented in this section. It will address the second research question
of this study: Are there any particular on-line activities or features that compensate for the
lack of visual and non-verbal interactions that are used in traditional classrooms?

Domain analysis (Spradley, 1980) facilitated identifying the ways class members
compensated for the lack of visual and non-verbal interactions that are present in
traditional classrooms. The means-end semantic relationship (Spradley, 1980), which takes the form X is a way to Y, was used to analyze the data and isolate the techniques used. An example, of the means-end relationship is that exaggerated spelling is a way to compensate for the lack of visual and non-verbal interactions in a face-to-face environment.

Findings are organized into two sections. The first will provide evidence from the data that shows how community members directed conversation to an individual within the group communication of the MOO sessions. The second section will present methods used to compensate for the missing conversational cues of traditional interactions.

**Directing Conversation to an Individual**

Directing a message to an individual in traditional classrooms is customarily accompanied by visual and/or non-verbal cues: looking at the individual, pointing or nodding toward him or her, touching the person, or providing some additional body language, such as turning or leaning toward the individual being addressed. These face-to-face actions are not possible on-line.

In e-mail and in listserv communications (asynchronous media), messages can be clearly addressed to the intended person or persons. E-mail messages are directed to individuals. Listserv messages are received by all. However, the addressee in the message header clearly indicates for whom the message was intended.

In the real-time (synchronous) group communication of the MOO sessions, there is no message header. Participants in the conversation can use a software command to whisper to another and the message will be private. However, all other messages are seen by the collective group on the MOO and later on the listserv when the MOO log is posted there.
Data analyses revealed three ways that members of this community directed their conversations to selected individuals in the group interactions of the MOO sessions: using the MOO software, using the person's name in the message, and inferring recipient by the content of the message.

In the first method, the software provided a way to indicate the recipient. The instructor and the students frequently posted messages such as: The instructor says to *Gina*J, "yeah, that's the same thing" or *Hilda*T says to *Donna*P, "I agree".

Another way that participants directed their messages was by using the individual's name in the posting. In the first MOO session, a student was asking another about her pregnancy when she posted: "How far along *Susan*S?" Others compensated by using student names when they greeted each other, such as "Hi *Carrie* and *Emeril*.". Students also used this technique to seek guidance from the instructor: "Prof, do you think that the actual noises they hear from the storm were from the sister screaming to get out?"

The third method used was less direct. The sender of the message inferred to whom the message was intended by the content of the message. This technique inferred who was the message recipient and kept the message intact even though it was threaded into another conversation. Even with overlapping dialogue, it was still clear who was talking to whom. Table 36 contains an example of this from the dialogue of the last MOO. The dialogue linked together by inference is foregrounded in bold font and the interthreaded conversation is backgrounded in gray.

**Compensating for Missing Conversational Cues**

Results of analyses made visible the techniques that members of this community used to compensate for the missing conversational cues in the MOO. As they used these
Table 36

Inferring Message Recipient

<table>
<thead>
<tr>
<th>Interaction units</th>
<th>Speakers</th>
<th>Dialogue in message units/action units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posts comment on MOO</td>
<td>DonnaP</td>
<td>001. I loved Clan of the Cave Bear and the rest of that series</td>
</tr>
<tr>
<td>Interthreaded conversation</td>
<td>Prof (To MarthaC)</td>
<td>002. getting away from the kids?</td>
</tr>
<tr>
<td>Ties to interthreaded conversation</td>
<td>MarthaC</td>
<td>003. grandparents are here for that</td>
</tr>
<tr>
<td>Replies to DonnaP</td>
<td>CarrieM</td>
<td>004. I don</td>
</tr>
<tr>
<td>Ties to interthreaded conversation</td>
<td>Deep</td>
<td>005. The Clan of the Cave Bear?</td>
</tr>
<tr>
<td>Replies to CarrieM</td>
<td>DonnaP</td>
<td>006. who wrote it?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>007. yes they are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>008. Jane Auel I think</td>
</tr>
</tbody>
</table>

techniques throughout the semester, they were constructing the practices that came to be recognized by insiders as part of the language of this classroom (Lin, 1993). Language of the classroom is defined as the particular phases, actions, and words used by participants in this setting, which build a common discourse (e.g., the use of emotes and emoticons).

The techniques members used are shown in Table 37.

Emotes are verbs that the MOO software commands can include with the message. Participants used exclaims, waves, laughs, bleeds, pouts, smiles, and other emotes to indicate their feelings or show their actions. The message in the posting would appear as: DonnaP laughs or LindaM exclaims.

Emoticons (Rezabec and Cochenour, 1995) are graphics created with keyboard characters that can be read sideways and used to show emotions. These are sometimes referred to as *smilies*, but can show sadness, surprise, and other emotions in addition to
Tables?

Compensate for Lack of Visual and Non-verbal Communication Cues

<table>
<thead>
<tr>
<th>Technique</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotes</td>
<td>laughs, smiles, waves, dances</td>
</tr>
<tr>
<td>Emoticons</td>
<td>:-)  :(</td>
</tr>
<tr>
<td>Capital letters</td>
<td>THANK YOU!!!!!</td>
</tr>
<tr>
<td>Acronyms</td>
<td>IMHO  LOL  BTW</td>
</tr>
<tr>
<td>Exaggerated spelling</td>
<td>sssccaaarrrryyyy!!!</td>
</tr>
<tr>
<td>Inferring a voice inflection</td>
<td>hehehehehe  Gotcha</td>
</tr>
<tr>
<td>Split message</td>
<td>LoriC.....Prof....LoriC</td>
</tr>
<tr>
<td>Explain action in message</td>
<td>Cliche coming  Giving you a hand</td>
</tr>
<tr>
<td>Punctuation indicating pause or end of thought.</td>
<td>001. Tan is good.</td>
</tr>
<tr>
<td></td>
<td>002. At first I avoided her because she was so popular,</td>
</tr>
<tr>
<td></td>
<td>003. but then I gave it a go and she showed why she is popular,</td>
</tr>
<tr>
<td></td>
<td>004. because she tells a story and does a good job of it.</td>
</tr>
</tbody>
</table>

happiness. The emoticons commonly used by these class members were the simple, easy-to-understand, happy face [: -) and : o)] and sad face [: ( and : -[].

Another technique was typing the message in all capital letters to indicate shouting, such as “THANK YOU!!!!” and “NOT like a fiddle”. This method has been used by many in e-mail and listserv communications to show the sender wants to emphasize what they are saying as if they were shouting in real life.

Class members also used acronyms, such as lol (laughing out loud), kewl (cool), BTW (by the way), and IMHO (in my humble opinion) to accompany their messages. This technique has also been used by many in e-mail and listserv communications to accompany their messages.
Three other techniques found in the data were: using exaggerated spelling, using remarks that inferred an inflection in the tone of the student’s voice, and splitting the message as if pausing for a breath in face-to-face communication. In MOO 15, a student expressed her sadness that the semester was ending by using exaggerated spelling: “I don't want it to end..... whaaaaa”. In MOO 11, a student expressed her feelings that going to (Japan) was “sssscccaarrrryyyy”.

Students also used words to infer an inflection in the tone of their voices when they typed: “I warned everyone hehehehehe” and “gotcha!”.

The following example shows how the message was split into separate postings, as if pausing for a breath.

LoriC Prof.....
Prof yeah, LoriC?
LoriC I may be going to (Japan) with my job :-)

The technique of explaining their actions within the message was also used to set the tone of the message. In the following examples the comments have been italicized.

“the wind is very much a (cliche coming) go with the flow kind of thing...”

“Applause (giving you a hand)”

“Chuckling back at LoriC”

The use of message units and action units to analyze the discourse made it apparent that punctuation was important to signify a pause in the speaker’s message and/or a pause at the end of a speaker’s thought. In face-to-face communication these pauses may be accompanied by body language or a change in the tone of the speaker’s voice as he/she finishes a thought. Table 37 contains one example showing the use of periods and
commas. The following excerpt shows the use of an ellipses, commas, and the end of a message as signified by posting it. Each numbered message unit ends with punctuation indicating a pause. An action unit (single underline) represents a group of tied message units that end when the thought is completed.

001. I think in "Rules" it was showing that strength is not always obvious...
002. it is quiet,
003. hidden,
004. not apparent,
005. but nonetheless strength

In summary, this section began by providing evidence from the data that showed how members directed their messages to a specific individual in a group environment. These techniques included using the software command to direct the message, using the individual's name in the posting, and inferring to whom the message was intended by the content of the message.

The last part of the section provided evidence from the data that identified the techniques employed by this community to help ensure on-line communications conveyed the intended message. These techniques (i.e., emotes, emoticons, capital letters, inferring voice inflections, etc.) and examples from the data were presented in Table 37.

Other Environmental, Pedagogical, or Demographic Factors

This section presents results of this study as they relate to the third research question. It is organized into three sections in which the findings on other environmental, pedagogical, or demographic factors that may have had an influence on the development of the on-line community will be discussed.
Environmental Factors.

Distance education offers many environmental benefits to students and instructor alike. Being able to access the course materials and complete course work in one's own time frame and at one's own convenience is a very positive environmental factor. Because of their time constraints and outside personal, social, educational, and professional responsibilities, members communicated from many different locations and in their own time frame. Members of this community reflected an understanding of these other responsibilities and attendance on the MOO was flexible. There was no stigma placed on entering the MOO late, leaving the MOO early, or not attending the MOO at all. If a student was unable to attend the MOO, he/she could post a response to the discussion that was held in the MOO to the listserv and gain the same credit for it. Students that needed to leave the MOO early did so for a variety of reasons: sickness in family, daughter needs computer for school, lab is full, going to work on other homework, going to work, in the middle of a traditional class, and just because she was hungry.

BettyA (exclaims) Lab is full and I need to run. Thanks everyone!" (Week 15)
GinaJ I gotta go I'm hungry. See ya next week.... (Week3)

The strictly on-line environment of this distance education class definitely had an impact on the construction of the community. Data analysis revealed two ways the environment influenced this culture: forming relationships and feelings of belonging to the community and providing different and unique opportunities for learning.
Environmental Influence on Feelings of Belonging

Support for the environmental factors that influenced relationships and feelings of belonging was supplied by the students themselves. Although not all students were looking for or found a sense of a tight community and life-long friendships, those wishing to remain apart still were able to be an important part of the culture. One student desiring to remain apart still played an integral role in the development of the community in many ways. His succinct and helpful comments on the listserv responses, his involvement in the MOO sessions (both challenging and supporting), and his fulfillment of his responsibilities to his fellow group members in completing the group assignments were characteristics of the roles and relationships that developed as the community was constructed throughout the semester.

Were I a full-time student and not working, I would have preferred class meetings for the discussions to the on-line "MOO" sessions. However, inasmuch as getting to class meetings can be burdensome, I find the on-line course to be a completely satisfactory substitute.

As to the matter of "community building," as I presume to understand your meaning, I have not found such to be a prevalent, necessary, or even particularly desirable characteristic of my 70-or-so units of college courses thus far, although I have certainly made friendships incidentally to class attendance. I suppose, therefore, that I entered this course with no expectations in that regard, nor even an awareness of the issue, and so have no judgments to offer you. (SamuelM, Debriefing)

Other students formed more of a bond with fellow class members. The following section presents comments of four students on varying aspects of the on-line environment of this class. These comments were provided during the debriefing at the end of the semester. As students' own voices reveal, the environment offered unique opportunities to learn about literature and to be a member of the community of learners that developed.

A member of this class who had previously participated in three other on-line classes expressed her pleasure at the environment that was created in this class by e-mail, the
MOO interactions and the instructor. The on-line communications helped her develop not only a feeling of being a part of the on-line community, but also friendships with fellow students that continue to extend beyond the classroom environment.

I felt more a part of this particular English class, than I have felt in my last three (which were all face-to-face environments). Through e-mail, the DaMoo Web site and a great instructor, communication was never a problem in this class. In fact, I've made new friends and continue to e-mail them and chat with them, even outside of the "class". Communication was better then in a traditional classroom environment. Through the DaMoo web site, realtime chats about the stories helped to create a classroom environment. (BarbaraK, Debriefing)

As the following student’s remarks show, creating a feeling of belonging to the class and getting to know fellow students takes student involvement. However, if a student does not want to be involved, the on-line environment still offers a convenient way to complete the course requirements. She also notes another benefit of on-line classrooms over face-to-face classrooms. The asynchronous communication within this on-line environment (i.e., email and the listserv) offered a non-intimidating environment in which students could express their thoughts and comment on the topics without being interrupted.

I think it's possible to become acquainted with classmates if the student wishes to make the effort. It involves reading the e-mail and participating in class discussions. The opportunity is there to make ALL of your opinion heard, without interruption, with little fear of embarrassment. If you are not interested or don't have time to get "involved" you can do your work, at your convenience. (LindaM, Debriefing)

The equitable nature and the convenience of the on-line environment of this class was also commented on by another of the students. This student noted an advantage of on-line over face-to-face environments. This advantage resulted in allowing her to participate in on-line class activities under circumstances which would have precluded her participation in a face-to-face class.
Online, no one judges how you look, what you wear, or how fast or slow you read out loud or otherwise. Everyone is on an equal playing field. Also, with an online course, although I had bronchitis and was very sick, I was still able to sit at the computer desk with my hot soup and water to do a few assignments. In a traditional classroom environment, it wouldn't have been possible. (BarbaraK, Debriefing)

As the following student comment expresses, the on-line environment of this class did not make the class easier than face-to-face classes. Rather, it required a lot of student participation. The class participant’s interactions paid off in feelings of belonging to the community of learners that developed. Not only were the MOO sessions enjoyable, they also helped to establish relationships with other community members.

THIS IS ONE OF THE MOST CHALLENGING CLASSES I HAVE EVER TAKEN ON THE NET. ADVICE? DO THE MOO!!! IT IS FUN AND HELPFUL IN MAKING YOU FEEL LIKE YOU ARE PART OF A CLASS. (MarthaC, Debriefing)

Environmental Influence on Opportunities for Learning

The ease of access and availability of means to communicate with fellow students and the instructor make on-line classes a unique environment for learning. In addition to these features of the distance education environment, the instructor created an environment that capitalized on the content and pedagogical resources of the web. He can not be accused of creating shovelware for use on the Internet. According to Fraser (1999) shovelware refers to “any content shoveled from one communication medium to another with little regard for the appearance, ease of use, or capabilities of the second medium.” (Fraser, 1999,p. B8). The instructor used the resources of the Internet to enhance the class with collaboration and communication. His instructional design provided the physical structure of the cycles of activity in which class members acted and interacted in order to attain the goals of the class. Participation in these cycles of activity provided the students with various opportunities for learning.
The instructor had the students make use of the on-line environment in four basic ways: (a) to access instructor-created material on the web pages, (b) to use the class communication media of e-mail, listserv, and the MOO, (c) to link to other web sites supplying additional resources for student learning, and (d) to involve the student in their own learning by having them create their own web pages on an author they had studied.

The instructor used the on-line environment to provide students with all resources needed for the class except the textbook. In addition to the syllabus, instructions on how to complete all required communication on e-mail, listserv, and the MOO, he also provided and required students to use links from his syllabus to on-line quizzes, lectures on course content such as creating a precis (i.e., a brief summary) and a descriptive summary, and analyzing plot, character, theme, and setting of the stories. To provide students with more opportunities for learning he incorporated links to web sites providing information on individual authors, their times, and their works and required students to read these as part of their weekly tasks.

This instructor also capitalized on the pedagogical resources available on the Internet. Many of his weekly assignments used the web as a learning resource for the students that could not have been part of a strictly face-to-face environment. As a final project, the students worked in groups of three or four to create web sites about any author who had been read and discussed in this on-line class and relate this author and his works to his/her times. This assignment not only required teamwork of the students it also provided a valuable resource for others on the World Wide Web. Table 38 presents a list and short description of some of these student creations.
Table 38

Sample Student Web Sites and Descriptions

<table>
<thead>
<tr>
<th>Subject of the web site</th>
<th>Short description of site links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgar Allan Poe</td>
<td>Links to information on Victorian era and health conditions at the time of Poe, biographical information, and links to his works, such as Fall of the House of Usher, Cask of Amontillado, Masque of the Red Death, and The Raven. This site also incorporates sound and links to stories by other authors.</td>
</tr>
<tr>
<td>Ernest Hemingway</td>
<td>Images, links, and commentary on Hemingway, his works, and his world. Includes a photographic history and complete on-line text versions of two short stories.</td>
</tr>
<tr>
<td>Mark Twain</td>
<td>A biography of Twain and links to his works, and his critics. Also contains a link to his criticism of the medical profession</td>
</tr>
<tr>
<td>William Shakespeare</td>
<td>A biography of Shakespeare, and links to his works, other references, and his world.</td>
</tr>
<tr>
<td>Jack London</td>
<td>A biography, his times, and how history played a part in his writing. Also links to his accomplishments and his works</td>
</tr>
<tr>
<td>F. Scott Fitzgerald</td>
<td>A biography, listing of his works, references, and links to his works such as This Side of Paradise, The Great Gatsby, and The Beautiful and the Damned</td>
</tr>
</tbody>
</table>

Pedagogical Factors

This section will address two pedagogical factors that played a role in the development of this community: using a student-centered approach and instructor-student interactions.

Using a Student-centered Approach

Using a student-centered approach rather than a teacher-centered approach is a factor that greatly contributes to effective teaching and learning in distance education and in traditional learning. Instead of a community of scholars, we should have a community of learners (Lever, 1993). Taking a student-centered approach is focused on the needs of the student not of the teacher. "To use a concert analogy, the traditional instructor serves as
lead soloist, while the distance educator is the conductor and concert master” (Willis, 1994, p. 278).

A student-centered approach is designed to make the student a more independent learner and not reliant on lecture from the teacher to obtain knowledge. The students are also encouraged to work collaboratively with other students and to be actively involved in the processes of their own learning. In a student-centered approach, the instructor takes a more facilitative and less expository role in instruction, sharing responsibilities for teaching and learning, creating opportunities for active participation and interaction among students, and responding to the needs of the students. Student-centered approaches enhance critical and higher order thinking (Wolcott, 1994).

In this on-line class, the instructor planned and used a student-centered approach. As Wolcott (1994) suggests, he provided students with choices in activities and assignments and encouraged collaborative learning through student-to-student interactions. This collaborative learning occurred throughout the course in e-mail, the listserv, and the MOO sessions. The instructor also used active instructional techniques instead of lecturing (Wolcott, 1994). These techniques included the exchange of ideas on the listserv and the on-line discussions in the MOO sessions. The following debriefing comments of three students provided an insight to community member’s opinions on this student-centered approach.

The final project was great for group dynamics and for teamwork effort. I'll be able to formulate a great team in the future just from what worked here. (CarrieM, Debriefing)

I've learned that working in groups is great, when all parties are willing and accept responsibility. (BarbaraK, Debriefing)
(In talking about the MOO sessions) This has been for me a vital part of the class. It was through my classmate's opinions I was able to more fully appreciate the readings which were assigned. (BettyA, Debriefing)

In these environments, the students worked in pairs (the journals and responses), in small group activities (groups used in assignments for feedback on essays and for collaboration on web sites), and in whole group activities (the listserv and the weekly MOO sessions). The earlier section on interactional spaces (Brillant-Mills, 1993; Heras, 1993; Tuyay, Jennings, & Dixon, 1995) provided a more in-depth look at the organizational and discourse patterns that were constructed by members of this community over time.

**Instructor-student Interactions**

Another pedagogical factor that played a major role in the students' feelings of respect and belonging to the community was the prompt and considerate feedback supplied by the instructor. He consistently commented on the journals and student responses posted on the listserv each week in a timely manner and with non-intimidating messages and his turnaround time for the private instructor-student e-mail was also prompt and reliable.

He (the instructor) also answers questions by e-mail very promptly. I am currently in another on-line class which is missing these two items and it was a very excruciating experience. (EmerilF, Debriefing)

I've taken several online classes and I like the way (the instructor) does all of his. He requires that you participate through email and the best thing about the class is his participation. I don't know how he keeps up with all of us but he does. I am taking another online class that will be the first one I've ever had to take over and it's because the instructor expected so much work back that he never had time to comment or even acknowledge the material sent to him. Online classes require time on the computer almost everyday and students need to get prompt feedback in order to move on to the next thing. That's (the instructor's) greatest strength. He gets back to you right away and never leaves you guessing. (DonnaP, Debriefing)
Through his interactions with the students, the instructor demonstrated his respect for the students’ concerns and learning activities and his enthusiasm for teaching and learning, the content of the course, and the on-line delivery methods used. As a student mentioned in the debriefing survey: “Enthusiasm was the key. Prof kept it interesting, challenging and fun” (CarrieM, Debriefing).

His weekly attendance in the MOO sessions, sometimes while attending to personal situations at home showed his involvement with the students and his concern for their learning. While attending the MOO in week 11 he had to take a break.

Prof gotta do diaper duty.
I'll be back quick.
carry on without me for a couple minutes

Interactional ethnography made visible several other student-oriented techniques that were suggested by Wolcott (1996) for use in on-line learning to build rapport, decrease isolation, and increase interaction. Class information was available on the web prior to the first class meeting. The instructor posted his office hours, telephone number, and e-mail address in the syllaweb and students could easily contact him and receive a quick reply via e-mail, the listserv, or in person. In the various media, he used student names, presented an approachable demeanor, and played up commonalities among students and between instructor and students.

In the MOO sessions, he provided time for students to engage in informal pre-class conversations by not logging in until the collective had had time to gather and interact. When he joined the group in the MOO, he participated with them in informal conversations and was willing to address any student questions before, after, or during these on-line interactions.
The final project that he designed was challenging and unusual for an English class. Students worked in small groups of three or four to create and post web pages about an author, the times the author lived in, and the impact these times had on the author's writing. This and other projects served to provide opportunities for learning that addressed the higher order objectives of application and synthesis. Student comments indicate it was a challenge, but a great experience:

I learned how to make a web site, which I never thought I'd do in an English class. (BarbaraK, Debriefing)

... making the web site was a great experience and no matter what you do these days it's a skill that comes in handy. (DonnaP, Debriefing)

**Demographic Factors**

The research in the majority of the literature investigated the construction of classroom culture in K-12 settings, not postsecondary ones. There are several differences in these environments. The backgrounds and experiences of K-12 students may be more similar than the backgrounds and experiences of postsecondary students. This study's student survey revealed variations in student demographics and experiences that may have contributed to the shaping of the on-line classroom culture.

It has been proposed that because distance education students may be older than traditional college students, they may be busier, and this may affect student retention rates of an on-line class negatively (Carr, 2000). Although the current study did not address student retention rates, it should be noted that thirty-two of the fifty-five students (i.e., approximately 58 percent) who were originally enrolled, completed the class. This retention rate is not unusual for an on-line course.
Although national statistics are not yet available, it has been reported that retention rates are usually 10 to 20 percent lower in distance education classes than in traditional classes (Carr, 2000). In Fall 1999, Tyler Community College in Texas reported a completion rate of 58 percent for its thirty-five Internet classes and 71 percent for its traditional classes. At Mountain View Community College in Texas a history class reported a 50 percent completion rate, while face-to-face courses had 65 to 70 percent completion rates (Carr, 2000). Additionally, Tomball Community College in Texas reported a completion rate of 57 percent for its on-line classes, up from approximately 40 percent (Young, 1999). Although the effect of demographics on student retention was not addressed in this study, fifty-eight percent appears to be within the normal range for on-line student completion rates.

Demographic factors did not seem to affect the construction of a community in this on-line classroom. Students repeatedly mentioned that all were treated equally. The demographic characteristics of the students (age, race, gender, previous experience, marital and family status, etc.) did not apparently influence the interactions of the members. As can be seen in Table 39, Ethnicity and Gender of Participants, the majority of the participating students were white females.

Table 39

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Female</td>
</tr>
<tr>
<td>Black</td>
<td>Female</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Female</td>
</tr>
<tr>
<td>N/A</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
</tbody>
</table>

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Regardless of any demographic differences, they freely shared comments, concerns, experiences, and assistance. The non-threatening environment of on-line communication which did not reveal these face-to-face student characteristics seemed to promote an equality among the students that would otherwise not have existed. Demographic factors did not noticeably influence community construction in this on-line class. The debriefing responses of two different students which follow support this.

I think this is a non threatening environment where styles, clothing, ect (sic) play no part. All students feel equal here. It creates a more relaxed environment for learning. P.J.s are acceptable, popcorn and soda and just relax and enjoy. :) I got to know my class mates better here due to the uninhibited nature of the environment. (CarrieM, Debriefing)

Online, no one judges how you look, what you wear, or how fast or slow you read out loud or otherwise. Everyone is on an equal playing field. (BarbaraK, Debriefing)

Summary

In this chapter, the findings of the data analyses were presented, organized by the three research questions: How did member interactions construct the social culture? How did members compensate for lack of face-to-face conversational cues? What environmental, pedagogical, and demographic factors affected this community construction?

Discussion of findings and examples pertaining to the first question addressed the cycles of activity, onset of community, patterns of practice, interactional spaces, and an event of breaking the culture.

First, the focus of the activities that students participated in weekly and throughout the semester and the media they used to accomplish these activities were discussed. Presentation of the findings regarding these cycles of activity was intended to provide the reader with evidence of the social structure of life in this classroom.
A discussion of findings from the first real-time meeting of the collective, termed *Onset of Community*, was presented next. These findings provided evidence of how the actions and interactions of the members of the class were building the characteristics of this on-line community in-the-moment. The data analyses made visible how the dynamic construction of the community began in this first real-time meeting of the class.

The next two sections contained findings relating to the patterns of practice and interactional spaces that developed within this class. Evidence of the historical dimension of life in this on-line class was supported by the discussions and examples of how the events that occurred in-the-moment and throughout the semester developed into accepted practices for the class. Findings showing how several different characteristics of this community were developed by the actions and interactions of the class members were presented: how members changed the topic and chose a reading, how members shared resources to discuss and analyze the weekly readings, and how members developed an understanding of the meaning of an object of the MOO, the Big Sign.

The discussion of the interactional spaces and their structure within which the members interacted throughout the semester was intended to provide the reader with evidence of how class members worked together in the different on-line media and how they developed understandings and expectations of community requirements for these interactions.

In the last section of the question one discussions, *Breaking the Culture*, the findings of the data analyses made visible the actions and interactions of the participants when a student challenged the developing norm of discussing the weekly readings in the MOO.
Analysis of this event provided evidence of how the class members worked together to maintain their norms and practices.

The second research question was then addressed. How members compensated for the lack of face-to-face conversational cues by using emotes, acronyms, exaggerated spelling, and other techniques was discussed and presented in Table 37. Techniques members used to direct their conversation to an individual in the MOO were also discussed and examples from the data were provided.

The answer to the third research question, which asked what else influenced the community development, was organized by environmental, pedagogical, and demographic findings. Discussion of the findings pertaining to the role of the environment in building this on-line community addressed the environmental influences on feelings of belonging to the community and the use of the on-line environment in the e-mail, listserv, and MOO to provide students with opportunities for learning.

Findings relating to the pedagogical features of this community were organized into two sections: how the instructor used a student-centered approach and the nature of instructor-student interactions. Examples and students' comments from the debriefing questionnaires were presented and discussed. Findings pertaining to demographic features were discussed and Table 39 presented data on the ethnicity and gender of the class participants. Evaluation and interpretation of the findings presented in this chapter will be discussed further in the following chapter.
CHAPTER FIVE

DISCUSSION

The following five sections include a discussion of salient findings, study limitations, educational importance of the research, implications of the findings for practice, and recommendations for future research.

Discussion of Results

The overriding research question that this study addressed was: How do the interactions of a class's participants over time lead students to define themselves as part of a distance education community? This question was subdivided into three research questions. These questions guided the research to seek specific, detailed answers on how does a community develop in an on-line class, how do members of an on-line class compensate for lack of face-to-face communication, and what else helps construct the social environment of the class.

Question One - How Does a Community Develop in an On-line Class?

The potential of computer-mediated communications to promote community building has been mentioned throughout the literature (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994; Kerka, 1996; Korenman & Wyatt, 1996; Powers & Mitchell, 1997; Riel & Harasim,
1994). This study investigated this potential and found that a unique social culture was constructed in this distance education class that was conducted entirely on-line.

A salient finding from the analyses of the data was that the interactions, both in-the-moment and over-time, of the members of this class, constructed an on-line community that provided the students with various opportunities for learning both social and academic content. Two related findings about these opportunities for learning and their take up by students that will be discussed in the following sections are:

1. This community environment provided numerous opportunities for learning through the instructional design of the class, the instructor's application of student-centered techniques, and group interactions.

2. The take up of these opportunities for learning required students to be active in their own learning. The level of students' involvement was influenced by the demands for participation and the features of on-line learning that facilitated student take up.

The following discussion of the findings should reinforce the concept that the instructional process is a system. "The purpose of the system is to bring about learning. The components of the system are the learners, the instructor, the instructional materials, and the learning environment. These components interact in order to achieve the goal" (Dick & Carey, 1985, p.3). A system is a dynamic, complex entity wherein the components interact together. When all the components are working together, there is a synergy and the whole is greater than the sum of its parts. A discussion of how the interaction of these components provided opportunities for learning follows.
The Community Provided Various Opportunities for Learning

Different social practices provide for the construction of knowledge in different ways through the privileging of and access to different forms of knowledge. That is, the social practice that individuals engage in determines access to activities and the quality of guidance and support that they will experience. (Billett, 1998, p.1)

The social practices of students participating in this on-line class provided them with many opportunities for learning. These social practices were constructed by their interactions in various activities and with a variety of guidance and support from the instructor, other students, and both face-to-face and on-line resources. Engaging in these interactions and taking advantage of the opportunities for learning that these resources offered required the student to take an active role in both social and academic practices. They needed to actively participate in their own learning.

Interactions with others provide various opportunities for learning both social and academic knowledge (Tuyay, Jennings, & Dixon, 1995). In school settings, the social activities designed for learning a particular topic or discipline often result from activities arranged by the teacher. Therefore, one can deduce that if the teacher plans these activities well (i.e., employs good instructional design), the students have more opportunities for learning.

Even as this on-line community was being constructed, it provided various opportunities for learning through its instructional design, the instructor's use of a student-centered approach, and group interactions. Both the students and the teacher had responsibilities in this environment. The teacher's responsibility began with the instructional design of the class and tailoring it to the available on-line media.
Opportunities for learning through instructional design. The instructional design of this distance education class provided many opportunities for student learning through the use of multiple media. Learning in an on-line environment without face-to-face interactions increases the students dependence on an instructional design of the class that utilizes the on-line resources to offer the student an array of learning opportunities. The interactions of the students and the on-line media are a primary consideration in on-line education (Repman & Logan, 1996; Schieman, 1990; Wolcott, 1995, 1996).

Studies have indicated that different on-line media can be used to address different student learning styles (Hiltz, 1988, 1994). Although this dissertation did not address student learning styles per se, the course design incorporated more than a single on-line medium. Using multiple media provided students with opportunities to interact with on-line resources in a variety of ways and, therefore, had the potential to address various learning styles.

There were four types of on-line media used in this class: e-mail, a class listserv, web pages, and the MOO. The characteristics of each differed by direction, timing, and audience as shown in Table 40.

Table 40

<table>
<thead>
<tr>
<th>Characteristics of Media Used in This Class</th>
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<tbody>
<tr>
<td>Media</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Web pages</td>
</tr>
<tr>
<td>E-mail</td>
</tr>
<tr>
<td>Listserv</td>
</tr>
<tr>
<td>MOO</td>
</tr>
</tbody>
</table>
The web pages were unidirectional; all others provided two-way communication. The e-mail, class listserv, and web page communications were conducted in delayed time (asynchronous mode) which allowed class members to interact with these media at a time and place they found convenient. The MOO communications required that all students be on-line simultaneously and participating in real-time (synchronous mode). Private conversations could be conducted on e-mail, but all messages on the listserv, web pages, and the MOO were available to the entire class.

Responding in the bidirectional asynchronous listserv media also provided additional time for them to consider the content of their messages and rewrite them as often as desired before posting. Other research indicated that allowing students to apply their knowledge and learn at their own pace without the pressure to respond immediately was an advantage of on-line classrooms (Colomb & Simutis, 1996; Hiltz, 1988, 1994).

Use of the bidirectional, synchronous medium of the MOO facilitated group interactions. Two-way interactive instruction has been found to encourage students to be more self-directed and to facilitate students’ social needs (Schieman, 1990).

A students’ prior experience with the technology may affect student achievement and perceptions of satisfaction in on-line education. This connection was not investigated in the current study on a student-by-student basis. However, a self-reporting survey obtained at the beginning of the semester indicated that the majority of the students knew how to use a word processor, the World Wide Web, and e-mail at the intermediate or advanced level. On the other hand, the majority of the students had no experience or were only beginners with the MOO and the listserv technologies. The students’ self-evaluations of their technology expertise are shown in Table 4.
Regardless of initial computer technical competence, students’ end-of-semester debriefing comments reflected positive opinions of the technology and the activities they accomplished with it in this class:

I learned how to make a web site, which I never thought I’d do in an English class. I learned about the DaMoo chat site, and will keep that address and use it often. I’ve introduced it to several computer literate friends as well. ... I’ve learned that, even though it’s an online class, interaction via telephone, e-mail, the DaMoo, and the listserv are beneficial and make communication without being physically present possible. (BarbaraK, Debriefing)

The instructor incorporated a self-test questionnaire and a list of special requirements for participation in an on-line English class on the class web pages. These pages provided the students with the opportunity to consider whether or not they were prepared technologically and ready to devote the necessary time and effort to a distance education class involving e-mail, a listserv, web pages, and a MOO.

Another feature of the instructional design was the easy access to assistance in using the technology employed. The syllabus on the web provided hyperlinks to detailed technical instructions to submit essays to the instructor by e-mail, to understand the instructor’s feedback on e-mail within students’ submitted essays, to subscribe to the class listserv, to post and respond to journals on the listserv, and to connect to and communicate at the weekly MOO sessions. All-in-all, the information provided on the class web pages was designed to prepare all students who chose to enroll in this on-line course for the time and effort required and for the use of the various media employed. Although the level of students’ computer technology skills in relation to their academic
success and satisfaction with the class was not studied in this dissertation, adequate opportunities were incorporated into the design of this class to allow students to determine for themselves if their lack of technical skills would present a problem.

The instructor planned on-line activities that required and encouraged students to use multiple media. This provided opportunities for student learning within various and multiple environments. A domain analysis (Spradley, 1980) made visible some of the approaches employed by this instructor to promote student use of the various media (see Table 41).

Throughout the semester, students could learn from e-mailing the instructor about technical or personal problems and concerns. In the weekly cycle of activity, students had the opportunity to learn by using the listserv to post journals, respond to journals, and read and optionally reply to the instructor's feedback and the MOO logs. They also could learn by testing and applying their knowledge if they used the web pages on a weekly basis to access and complete the weekly on-line quiz and receive immediate feedback electronically.

Another vital opportunity for learning was provided by the synchronous interactions on the MOO. These real-time interactions were also accessed weekly through a hyperlink on the web page. They were instrumental for both on-task (i.e., analysis and discussion of the readings) and off-task interactions (i.e., sharing time with each other, joking, experimenting and playing with the resources, and discussing personal concerns and issues).

The instructional design included requirements for student participation for credit in three media (i.e., e-mail, listserv, and web pages). Student participation in the fourth
<table>
<thead>
<tr>
<th>Medium</th>
<th>Approach</th>
</tr>
</thead>
</table>
| E-mail         | o E-mail was required for student-to-instructor, instructor-to-student, and student-to-student interactions - all communications were private  
o Essay assignments had to be submitted to the instructor via e-mail  
o Individual essay feedback from the instructor was sent via e-mail  
o Resubmit revised essays after feedback from the instructor via e-mail  
o Peer evaluation of essays was required and promoted use of e-mail to exchange  
o Students could ask questions and receive answers from the instructor on technical and personal concerns.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Listserv       | o Use of listserv was required for individual, dyad, and group interactions - all communications were seen by the group  
o A journal on a weekly reading of choice was required  
o A response to at least one other student's journal (student's choice) was required  
o Instructor's feedback on journals and responses provided weekly for all to read  
o Logs of all MOO sessions were posted in a timely manner for all to read  
o Students had the choice of attending the MOO session or responding to what they read in the posted log of the MOO via the listserv                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| MOO sessions   | o Use of MOO was not required, but encouraged - all communications were seen by the group and those wanting to participate had to be on-line at the same time  
o Teacher and students' discussions of the readings and other interactions provided opportunities for learning  
o Encouraged use of the MOO at pre-class orientation meeting  
o Logs of all MOO sessions were posted to listserv  
o Easy access through a hyperlink to the MOO sessions in the class web page                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Web pages      | o Use of web pages was required - one-way media, available to all, anytime  
o All course materials, except the text, were provided on the class web pages  
o Class syllabus, lectures, and supplementary content material accessible via web  
o A list of activities to be accomplished by week was accessible via the web pages  
o A hypertext link to access the MOO sessions was included for each week  
o Hypertext links to other web sites for more reading and author-specific data  
o Completing a weekly quiz was required. Web pages had a hyperlink to the quiz and software provided immediate feedback to students.  
o Creating a web page of a chosen author and the times he/she lived in were required for the final assignment. Students worked in assigned small groups. This encouraged small group interactions, collaboration, and on-line research.                                                                                                                                                                                                                                                                                                                                                      |
media, the MOO, was optional. If students preferred the asynchronous mode of the listserv, they could read and respond to the real-time MOO discussions via the listserv instead. Feedback, directions, and assistance to students were offered and provided in all of these media. The interactions that occurred within the media to construct the virtual classroom’s community will be discussed further in the following section.

In summary, the instructional design of this class incorporated the use of multiple online media to support the actions and interactions of class members in ways that provided students multiple opportunities to learn both social and academic content. The interactions of the class members in these media constructed the social culture of this virtual classroom. The difference in direction, timing and audience provided a variety of online media which had the potential to address different learning styles. Instructions provided online by the instructor were designed to help students determine if an online class was a viable option for their learning and help students in accessing and using the technology. This community provided numerous opportunities for learning through the instructional design of the class.

Findings of this study have shown that the instructional design is an important ingredient in online teaching and learning. The distance education instructor should plan and coordinate the instructional activities to use the most appropriate media available in order to provide students with the best opportunities to learn. As supported in Chapter 4, the instructional design of this class provided the framework within which the students interacted to construct the community and provide opportunities for learning.

Opportunities for learning through a student-centered approach. The instructor also played a major role in the construction of this community and in providing students with
opportunities for learning by his use of a student-centered approach. Researchers tell us that it is important to use student-centered techniques in an on-line environment (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994; Wolcott, 1994, 1995, 1996). The instructor applied many such techniques in the on-line interactions of this community.

In an on-line environment, the instructor must pay special attention to using techniques that help students to perceive themselves as being in a social environment (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994; Kerka, 1996; Willis, 1994; Wolcott, 1994, 1995, 1996). The lack of visual and non-verbal indicators of physical characteristics, body language, and other information conveyed with the message in traditional classrooms makes the use of student-centered techniques even more important. Building rapport and increasing members' identification with the community must be incorporated into the interactions that occur in the on-line environment.

Wolcott's (1996) framework and suggestions for on-line techniques for building rapport, decreasing feelings of isolation, and enhancing interactions are presented in Table 42 to show some of the techniques employed by the instructor of this on-line class.

One technique to build rapport in an on-line class is to refer to students by name. The instructor used student names frequently. In the MOO he directed his posting and praise by name either through the MOO software "Prof asks MarthaC, what about it did you find that made it hard to read?" or through incorporating the student's name within his posting: "how do you mean CarrieM?". He did this frequently and consistently, referring to the students as if they were in a face-to-face classroom.

He presented an approachable demeanor by his sense of humor, sharing of personal experiences and information, readily answering student questions on both technology and
Table 42

Constructionist Practices Employed in the Current Study

<table>
<thead>
<tr>
<th>On-line concern</th>
<th>Practice modeled (Wolcott, 1996)</th>
</tr>
</thead>
</table>
| **Build Rapport** | 0 Distributed information about the class prior to the first class meeting  
0 Provided students with choices  
0 Used student names  
0 Listened and was respectful and open to students' opinions and concerns  
0 Presented an approachable demeanor  
0 Played up commonalities among students and between instructor and students  
0 Emphasized student's personal responsibility for learning  
0 Provided time for students to engage in informal pre-class conversations  
0 Planned instructional activities that required collaboration  
0 Engaged in informal conversations before class, after class, and during breaks |
| **Decrease Feelings of Isolation** | 0 Designed activities and supporting materials which helped students learn how to learn  
0 Encouraged student sharing of experiences  
0 Used students' experiences to draw them into discussions  
0 Encouraged students to talk to each other informally  
0 Used small groups and varied group configurations  
0 Planned collaborative activities  
0 Made it easy for students to contact him outside of class (e.g., through e-mail, office hours, or listserv) |
| **Enhance Interaction** | 0 Incorporated active learning techniques, such as discussion groups  
0 Built in time for questions and answers  
0 Assumed student participation in all media  
0 Minimized teacher talk  
0 Asked questions, made it easy for students to answer and ask questions of their own  
0 Designed activities that addressed higher order objectives, such as application and synthesis  
0 Provided timely feedback; responded to questions and "turn-around" assignments promptly  
0 Provided time before and after class for questions |
subject topics, and listening to students concerns and opinions. (Although different
cultural backgrounds may interpret attempts at humor differently, there was no apparent
indication that humor used within this class was not interpreted the way it was intended.)
The instructor’s use of humor was evident when a student explained why she had to leave
the MOO early: "math? math!?! Never say you're going to do math to your English
teacher".

He also facilitated the reading discussions by asking questions designed to elicit higher
order thinking skills on the part of the students as evidenced in this posting: "why do you
think Dee had to have the house in every picture? To show the background from which
she rose?"

Students appreciated his prompt feedback as shown by this debriefing response.

Online classes require time on the computer almost everyday and students need to get
prompt feedback in order to move on to the next thing. That’s Prof’s greatest strength.
He gets back to you right away and never leaves you guessing. (DonnaP, Debriefing)

Opportunities for learning through group interactions. The members of this on-line
class developed an understanding of the meaning of actions, words, and objects in the
classroom; learned to predict future events; acquired an understanding of the norms and
expectations for participating in future events; were able to determine members’ roles and
relationships within the group; and met the rights and responsibilities of being a member of
the group (Collins & Green, 1990). The individual students accomplished this through
their interactions with the other members of the class, both in-the-moment and throughout
the semester. Key findings of this study stress the importance of group interactions in the
construction of the community and providing opportunities for learning, namely:
1. The actions and interactions of the individuals within the collective, both in-the-moment and over-time, were responsible for building the roles and relationships, norms and expectations, and other attributes of this on-line community.

2. Intertextuality and intercontextuality were important in providing opportunities for students to tie present learning to both their own and other's prior knowledge and experiences.

3. Both on-task and off-task sharing of experiences, knowledge, and ideas were important in this class for their role in building a community that provided opportunities for learning.

How one views the construction of a classroom culture depends on his or her theoretical perspective. By viewing this on-line class through the lens of a social constructionist perspective, certain constructs of this perspective can be used as an orienting framework. Fundamental to this viewpoint is that a class is a social group (Collins & Green, 1990, 1992).

... classroom becomes defined over time as people interact with each other in particular ways to achieve particular educational goals. Thus, teachers and students in each classroom work together to build a common understanding of the term and what is required to participate in everyday life in that classroom. (Collins & Green, 1990, p. 72)

It is the teacher and students working together throughout the semester that is responsible for the development of the community. These group interactions over time are necessary in the process of constructing each community. The community is made unique by what happens in the community. This is to say, that the actions and interactions of the members
of the community as they occur throughout the semester develop the characteristics of that community: the norms and expectations; knowledge of the meaning of words, actions, and objects; rights and responsibilities; and roles and relationships among members.

Members that participated in the development of this community, by participating in the group interactions, came to know how actions and events were to be accomplished in this community and what certain words, actions, and objects meant within the classroom environment. As class members acted and interacted together over a period of time, this common knowledge was taken for granted and became invisible to them (Collins & Green, 1992). Yet, it gave them an insider’s (Spradley, 1980) knowledge of how to participate in this environment.

Another feature of this continuous development of the community through group interactions was the way members of the community used what they had done together in the past to understand how to participate in what was being undertaken in the present. These ways of linking past knowledge and understandings of ways of working with this knowledge to the current situation, if they are socially significant, has been termed intertextuality (Bloome & Bailey, 1992; Bloome & Egan-Robertson, 1993) and intercontextuality (Floriani, 1997; Putney, 1997) respectively.

From the theoretical perspective that social culture is constructed by interactions among individuals over time (Collins & Green, 1990, 1992), it is important to provide opportunities for students to engage in group interactions. Vygotsky’s theory of the zone of proximal development (Vygotsky, 1978; 1986) explains that a student’s individual problem solving ability can be expanded with adult guidance or collaboration with peers.
who are more capable. Providing opportunities for students to work together with
instructor guidance and support enables these interactions to occur.

It is important that students perceive themselves as being in a social environment that
supports their learning in order for them to have opportunities for learning. Learning is
directly tied to the social aspects of the learning environment and the classroom’s culture
has a direct influence on what can be learned and on what can or is displayed as learning in
a classroom (Collins & Green, 1992; Floriani, 1997; Gutierrez, 1993; Heras, 1993; Lin,

Students can develop feelings of belonging to an on-line class and create a community
of supportive learners (Brett, Woodruff, & Nason, 1997; Hiltz, 1988, 1994; Hiltz &
Riel & Harasim, 1994). Social support is important for participants to maintain a feeling
of community (Brett, Woodruff, & Nason, 1997; Korenman & Wyatt, 1996; Powers &
Mitchell, 1997). The bonding together by a common experience, assumptions,
vocabulary, and needs or goals was found to be important in the development of these
feelings of community (Korenman & Wyatt, 1996; Powers & Mitchell, 1997).

Data analyses revealed that students in this class had the opportunity to bond together
through the group interactions in which they shared common experiences (both on-task
and off-task), and through the social support that was provided through their interactions
over time. The many examples of intertextuality presented in Chapter 4 provided evidence
of the students in this class bonding together while sharing personal experiences,
knowledge, and ideas.
Members also had the opportunity to bond together by sharing common goals. Understanding and appreciating literature were important goals of this on-line class. They also shared a common language that they had constructed together over-time through their interactions. Developing a language of the classroom (Lin, 1993) has been found to promote group membership and to play a role in student learning (Brilliant-Mills, 1993; Floriani, 1997; Gutierrez, 1993; Heras, 1993; Lin, 1993; Putney, 1996, 1997). The unique vocabulary of the Survey of Literature class (i.e., precis summary, @describe, change your name, Big Sign, etc.) and the encouragement and support opportunities built into this class by the instructional design and student-centered pedagogy had the potential to enhance group interactions and increase members' identity with the community. Just as Lin (1993) found that a language of the classroom was created by group interactions in the class, so too did this class develop a knowledge of the meaning of words, actions, events, and objects that were used as a referential system to participate in class activities.

As evidenced by the data, the dyad, small group, and whole group activities of the class under study provided many opportunities for learning, building confidence, maintaining a feeling of community, and providing social support and ideas. In the dyad interactional spaces on the listserv, students worked with each other to comment and critique each other's journals. The group interactions in the asynchronous listserv provided positive reinforcement for the students and one-on-one contact with other class members. The instructor provided feedback to the group as a whole by commenting on these journals and responses on the listserv, providing students with additional opportunities for learning and social support and ideas. Korenman & Wyatt (1996) found that being able to receive encouragement and support from others on-line contributed to
members' identification with the community. Brett, Woodruff, & Nason found that more intensive small group experiences were necessary to help members who did not participate much so they could build confidence and a sense of belonging, and so they would engage in more conversations and reflect more on their own activities. Powers and Mitchell (1997) recognized the importance of group interactions when they reported student perceptions and performance in an on-line class were related to student-peer support, student-to-student interaction, and faculty-to-student interaction.

Studies have reported that on-line interactions in an educational environment can make the class more effective than a face-to-face class because they facilitate collaborative or group learning (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994; Riel, 1993; Riel & Levin, 1990; Sugar & Bonk, 1995). The following definition by Hiltz (1994) stresses the importance of group interactions on-line.

Collaborative learning means that both teachers and students are active participants in the shared task of seeking to understand and apply the concepts and techniques that characterize the subject area. Groups sized from two to the whole class work together or co-labor to master the subject matter and teach it to one another. (Hiltz, 1994, p. 9)

Two main components of this definition focus on the role of group interactions in on-line education: groups work together to teach subject matter to one another and teachers and students are active participants within these group interactions.

A key feature of the group working together in this class was the intertextuality that was employed in the listserv and on the MOO. As demonstrated in Chapter 4, intertextuality refers to the juxtaposing of texts (i.e., resources) that is socially interacted
(Bloome & Egan-Robertson, 1993). This use of these class resources provided students with multiple opportunities for learning. The instructor encouraged and supported students using their own experience and knowledge to interpret and understand the literature that they discussed.

Another finding was that sharing in group interactions on a personal level, both on-task and off-task, was a major contributor to the construction of this community of learners. Members shared their personal concerns, thoughts, feelings, and experiences as they interacted while discussing the weekly readings, in the listserv and on the MOO, and as they informally interacted in general discussions between friends, on the MOO and potentially on e-mail. By participating in the group interactions in which they were exposed to other’s points of view and understandings, students had the opportunity to develop common knowledge with others about social and academic practices.

This sharing was important both socially and academically to this community. The incorporation of personal experiences and understandings shaped by reading the literature in the text had various opportunities through group interactions to be continuously reshaped. The instructional design built in the opportunities for learning on the listserv by having students combine their understandings from their readings in the textbook and on the web with their own related experiential knowledge and then create and post a journal for peer review and comments.

The students then negotiated these original understandings as presented in their journal in both dyads and whole groups, as the listserv postings were seen by all. The dyad interactions provided individual-to-individual, specific comments, critiques, and sharing of
thoughts, feelings, and interpretations. It also provided another’s point of view for understanding the stories.

Data analyses made visible that both off-task and on-task sharing were important to the construction of this community. The off-task sharing within the group interactions was appropriate within the norms of this community. It helped to build common bonds and rapport among the members and laid the foundation for student identification with this community of learners. Suggestions for building rapport and decreasing feelings of isolation in an on-line class according to Wolcott (1996) include: encouraging students to talk to each other; having students share their experiences, and using these experiences to draw individuals into discussions; playing up commonalities among both teacher and students and among students themselves; and engaging in informal conversations before and after class and during breaks. The importance of group interactions in an on-line environment is evidenced in these suggestions.

The off-task sharing that was the norm during the group interactions on the MOO was socially significant because it assisted in defining the roles and relationships of the members and building this virtual community. The off-task group interactions enabled the members to obtain more familiarity with each other. This familiarity allowed them to participate more openly and relate and share their own personal experiences and knowledge when working on the on-task activities. Building in time for these off-task activities to occur in this on-line class helped provide students the opportunity to maximize their group interactions during the on-task activities through intertextuality.

Another important factor in the construction of this on-line community was the on-task sharing, which offered many opportunities for learning. It had the potential to get
students more involved in their own learning by helping them to connect new knowledge to their own prior knowledge and experiences. The on-task sharing also provided them with exposure to relevant experiences and knowledge of both the instructor and other students (i.e., intertextuality), which they could use to enhance their understandings.

The on-task sharing during the group interactions employed in this community enhanced the opportunities for students to learn beyond their own experiences and capabilities. This sharing was appropriate within the norms of this community. Therefore, on-task sharing was socially significant because it offered opportunities for learning which were an important characteristic of this community and it was required to meet the curricular goals.

Findings of this study have shown that both off-task and on-task group interactions were important to the on-line teaching and learning process in this class. On-line and traditional classroom teachers, taking into consideration the objectives of the class, may want to consider allowing time for students to interact off-task in order to build rapport among class members and facilitate student identification and participation within the community. This, in-turn, should facilitate the use of intertextuality in the on-task group interactions. Students who do not feel threatened nor intimidated by their learning environment, but know that social support is available, should be more apt to take up the opportunities for learning that the community provides. In the on-task group interactions, the instructor may want to consider encouraging students to use their own and other’s personal experiences and knowledge to relate new learning to prior knowledge. Group interactions providing and encouraging opportunities for members to intertextually integrate the resources available rely on the active participation of the student.
Findings also made visible how some of the features of group conversation were present in on-line communication, but were perceived and recognized differently than in a face-to-face environment. The following discussion addresses three of these findings:

1. For a posting to gain access to the floor and change the conversational topic on-line, it had to be proposed, recognized, acknowledged, and socially significant.

2. Speech overlap, silence, and non-verbal communication existed in on-line interactions, but were effected differently than in face-to-face interactions.

3. Side conversations existed in the real-time on-line group interactions, just as they do in face-to-face interactions.

Topper (1997) investigated the discourse of on-line group interactions when he investigated how power and authority were established in a listserv and on e-mail and compared this to how they were established in face-to-face communications. He found that, in these asynchronous media, participants in a conversation only had access to the floor when another person responded to a prior message they had posted. He reported that conversation required “participation based on rights and obligations that dictated acceptable behavior within the medium” (Topper, 1997, p. 3).

This current study expanded the applicability of these findings by subjecting them to a more discerning criteria. The criteria used by Bloome and Egan-Robertson (1993) to determine if an intertextual relationship exists requires that it be proposed, recognized, acknowledged and socially significant. This criteria was used to determine if a message on the listserv was responded to or a potentially divergent event in the MOO changed the topic of conversation. See Changing the Topic of Conversation in the MOO, and Breaking the Culture in Chapter 4 for further discussion.
In the group interactions in the listserv, messages (i.e., the journals) were proposed when they were sent. They were recognized and acknowledged by being responded to if the receiver deemed they were socially significant (i.e., behavior based on the community's norms and expectations, roles and relationships, and rights and responsibilities).

The potentially divergent events in the MOO changed the topic of conversation if they met the same criteria. Such a posting was able to change the topic of conversation if it was proposed, recognized, acknowledged, and had social significance. Thus, a change in conversational topic was based on the more stringent criteria of social significance rather than just on rights and obligations. Using this criteria of Bloome and Egan-Robertson (1993) in this situation expands on Topper's findings and sheds more light on access to the floor in both listserv and MOO environments.

Topper (1997) also found that speech overlap, silence, and non-verbal communication were absent in the asynchronous media, but found in face-to-face communications. This was partially true in the asynchronous communications in the current study. Speech overlap and silence were absent, but students occasionally included emoticons, such as the happy face [i.e., :)], in their posting as a substitute for non-verbal communication.

In the synchronous communications in the MOO, a form of speech overlap, silence, and non-verbal communication was present. Messages in this real-time media contained a form of speech overlap when the postings quickly followed one another on the screen of the receivers and several topics were intertwined. Silence could also be determined by the frequency of the postings. Non-verbal communication was compensated for by the various techniques discussed in Chapter 4 (i.e., emotes, emoticons, exaggerated words) and Table 37 provided a list of several of these compensating techniques. The researcher
agrees with Topper's overall finding: on-line discourse is neither spoken nor written discourse, but has the characteristics of both.

Another feature of the dialogue of group interactions in on-line communications that was raised by Topper (1997) was that side conversations were not as disruptive on-line (i.e., e-mail and listserv) as in face-to-face encounters. Although such communications in the delayed time media in this study did not seem to be disruptive, side conversations were part of the intertwined messages in the MOO. These real-time side conversations resulted in intertwined postings that seemed disruptive at first. Over time they were accepted as the norm. An example of friendly banter interwoven into a serious discussion of The Things They Carried was presented in Table 25.

Factors Influencing Student Take Up of the Opportunities for Learning

Another finding of this study was that the take up of opportunities for learning that were provided required students to be active participants in their own learning. Findings indicated that active student involvement and participation in the cultural activities that provided opportunities for learning were important to this class' instructional process. As Billet (1998) tells us: "... there is likely to be a difference in cognitive development between those who participate in a social practice over an extended period and those who are temporary participants" (p. 7). That is to say that the longer and more frequently the student interacts with other community members involved in the construction of social and academic knowledge, the more opportunities for learning that will be available for the student to use as resources for knowledge construction.

A discussion of the personal characteristics of the students that may have affected their participation in the community practices is beyond the scope of this study. The following
discussion addresses the ways the students had available to take up the opportunities and the features of the on-line community that facilitated this take up.

Addressing the class demands for student participation. The students used the opportunities for learning that this community constructed by initiating participation in three distinct stages: actively seeking input for new knowledge, actively testing understanding of new knowledge by application and knowledge validation, and actively negotiating understandings of their new knowledge with others in a group setting.

Unlike participation in a traditional class, participation in an on-line class must be initiated by the actions of the student. Features of the on-line environment allow the student to select the time and place of this participation, but the opportunities for learning cannot be taken up unless the student does something. Class demands for student participation are categorized in Table 43 by three stages of student learning: actively seeking new knowledge, testing knowledge and re-shaping understandings, and negotiating understandings with others.

The class demands for student participation began anew each week with each student individually seeking new knowledge by reading the assigned short stories from the textbook and accessing the class web pages to read the lecture, directions, and related information on the readings found at other linked web sites.

Students then were able to test their knowledge of the readings by completing the on-line quiz and evaluating their responses with the immediate electronic feedback. They also had the opportunity to shape and re-shape their understandings by interacting on the listserv in various groupings: individually, in dyads, and in whole group.
Table 43

**Class Demands for Student Action**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Class Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Actively seeking input for new knowledge</td>
<td>o Read assigned stories from textbook</td>
</tr>
<tr>
<td></td>
<td>o Access the web pages to complete following:</td>
</tr>
<tr>
<td></td>
<td>o Read any instructions or lecture provided by instructor</td>
</tr>
<tr>
<td></td>
<td>o Identify required activities that were due</td>
</tr>
<tr>
<td></td>
<td>o Follow hyperlinks and read additional resources for readings</td>
</tr>
<tr>
<td>2. Test knowledge for validation and re-shape under understandings</td>
<td>o Access web pages</td>
</tr>
<tr>
<td></td>
<td>o Complete weekly quiz through hyperlink</td>
</tr>
<tr>
<td></td>
<td>o Review the immediate electronic quiz feedback to shape understandings</td>
</tr>
<tr>
<td></td>
<td>o Create and post a journal to the listserv based on new knowledge</td>
</tr>
<tr>
<td></td>
<td>o Read response(s) to this journal to shape understandings</td>
</tr>
<tr>
<td></td>
<td>o Read, create, and post a response to another’s journal</td>
</tr>
<tr>
<td>3a. Negotiate understandings with others in real-time group setting</td>
<td>o Read instructor’s feedback to journals and responses to shape understandings</td>
</tr>
<tr>
<td></td>
<td>o Access the MOO session</td>
</tr>
<tr>
<td></td>
<td>o Participate in the patterns of practice that have developed for greeting</td>
</tr>
<tr>
<td></td>
<td>other students and completing on- and off-task activities</td>
</tr>
<tr>
<td></td>
<td>o Share reading-oriented ideas and experiences with others to test understandings</td>
</tr>
<tr>
<td></td>
<td>o Share reading-oriented ideas and experiences others provide to shape</td>
</tr>
<tr>
<td></td>
<td>understandings</td>
</tr>
<tr>
<td></td>
<td>NOTE: students not wishing to do this in real-time can choose to read the MOO</td>
</tr>
<tr>
<td></td>
<td>log in the listserv and respond to it there</td>
</tr>
<tr>
<td>3b. Negotiate understandings with others in peer groups</td>
<td>o Create draft of essay</td>
</tr>
<tr>
<td></td>
<td>o E-mail draft to members of peer group</td>
</tr>
<tr>
<td></td>
<td>o Read essay drafts of peer group members and critique them</td>
</tr>
<tr>
<td></td>
<td>o Read peer evaluation comments and re-shape knowledge, if necessary</td>
</tr>
<tr>
<td></td>
<td>o Create and e-mail revised essay to instructor</td>
</tr>
<tr>
<td></td>
<td>o Read and apply instructor’s e-mail feedback to shape knowledge</td>
</tr>
<tr>
<td></td>
<td>o Revise essay with this new knowledge and resubmit via e-mail to instructor</td>
</tr>
<tr>
<td></td>
<td>(Final assignment also involved exchanging ideas with a peer group via e-mail or</td>
</tr>
<tr>
<td></td>
<td>a pre-arranged logged MOO session of peer group. Student also had to initiate</td>
</tr>
<tr>
<td></td>
<td>participation to complete the assignment of creating a web page with peers about</td>
</tr>
<tr>
<td></td>
<td>the author and how his/her times affected his/her writing.</td>
</tr>
</tbody>
</table>
Negotiating these developing understandings within the interactions with other class members, both instructor and students, in the MOO sessions provided opportunities for learning by discussing and sharing life experiences and knowledge with others in this real-time group setting.

Further shaping of student understandings had the opportunity to occur when the students participated in the creation and peer evaluation of the assignments. Additionally, students could learn by incorporating instructor feedback on the essay that had been submitted and then resubmitting the revised essay to the instructor.

Creating the web page with a peer group for the final assignment provided students with other opportunities for learning. This activity could enhance students’ appreciation of the literature and increase their computer knowledge and skills by designing and building the web page. It also had the potential to encourage their participation in group work, collaborative activities, and on-line research.

**On-line features that facilitated student take up of opportunities.** CMC offers several features unique to the environment that facilitate the access and availability of resources for student learning. Hiltz (1994) mentioned the virtual classroom provided use of other computer resources such as running software on-line. This study found that the major advantage of use of other computer resources was through access to the many web sites available today that provide additional data about various literature, such as biographies of authors, and access to other related stories on-line. A finding of this research is that the opportunities for students to access additional resources for learning from the web had the potential to increase their learning. Of course, this access was the result of student action.
Students were empowered to make certain choices about their participation. Among these were the obvious, such as accessing and using the web pages, e-mail, listserv, and MOO sessions at any time (within certain time parameters) and from any place they chose. Students could post their journal before or after they read other students’ journals. They could request additional support from the instructor, peers, or media resources. Because the listserv medium was asynchronous, students could take as much time as they needed to think about and compose their messages before they posted them. This facilitated opportunities for students to incorporate and assimilate new knowledge and understandings.

Another feature of CMC that provided opportunities for learning in this class was the accessibility of the historical interactions of the class. Most on-line communications were available to students for the duration of the semester, unless they chose to delete them from their own mailboxes. Students could re-read everyone’s listserv journals and responses at any time, such as when composing their essay assignments. They also had access to all of the instructors’ comments on the listserv at any time. Because all conversations on the MOO were logged and posted to the listserv, these discussions were also available for students to review.

E-mail between the student and the instructor was also available and the instructor was known by the students for his fast responses to messages. As this debriefing comment attests to, this was appreciated. “Prof’s classes are highly organized and flow very smoothly. He also answers questions by e-mail very promptly. I am currently in another on-line class which is missing these two items and it was a very excruciating experience” (EmeriIF, Debriefing).
Hiltz (1994) found many of the same advantages to on-line communication in her studies: location, flexible time, no travel, no wasted time commuting, shared work space and more participation opportunity. She also found several similar disadvantages: required textual skills of reading and writing, and required technical skills involving use of a microcomputer. The disadvantages of limited offerings by institutions, required computer equipment, and technical skills required to resolve hardware problems were not considered disadvantages in the current study. Hiltz also mentioned delayed feedback as a problem. This study did not find this to be a problem. The asynchronous mode of the listserv and e-mail was overcome by the instructor's quick feedback and students' being required to meet the demands of class participation within the time frame of the weekly scheduled activities. The real-time interactions during the weekly MOO sessions also presented a way for students to receive quick feedback to questions and concerns.

In summary, this community provided many opportunities for learning through the use of instructional design, student-centered techniques, and group learning. The instructional design of this class incorporated a need for student interactions on various media: e-mail, listserv, and the MOO. Several features of these media that facilitated student learning were discussed. Each of these media offered different ways for the participants to interact. The delayed media of e-mail and the listserv allowed students to take as much time as needed to compose their messages; whereas, the real-time environment of the MOO allowed students to interact with others in a group environment similar to face-to-face classroom settings. Even though the instructional design and the instructor's student-centered techniques employed in this class provided students with many opportunities for
learning, the students needed to take an active role in their own learning to take advantage of the opportunities provided.

Findings of this study have shown that the instructional design, student-centered approach, and group interactions can provide many opportunities for student learning. Additional features of on-line communications can also support these opportunities. However, access to all of these opportunities need to be initiated by the student. In order for students to take advantage of these opportunities for learning, they must take an active role in their own learning.

**Question Two - How Do Members Compensate for Missing Conversational Cues?**

Visual and non-verbal conversational cues (i.e., body language, verbal pauses, change in voice inflection) that normally accompany communication in a face-to-face environment are absent in an on-line classroom. This has the potential to interfere with on-line communications (Hiltz, 1988, 1994; Hiltz & Turoff, 1978, 1994).

Members of this class constructed a language of the classroom (Lin, 1993) that incorporated several ways to compensate for the lack of these conversational cues (see Table 37). Class members participating in the conversation were given the opportunity to visualize facial expressions and body language by incorporating these techniques.

Several of these techniques, such as emoticons [i.e., :-)]] (Rezabeck and Cochenour, 1995) and acronyms (i.e., lol, IMHO) were intercontextually related by members' prior experiences in other on-line environments. However, the use of emotes (i.e., CarrieM smiles) was made possible by the object-oriented software of the MOO and is not available in such proprietary chat software as WebCT™ (WebCT, 2000) and others. Several other techniques, such as directing conversation to an individual by
incorporating his or her name in the message or with the software, and using punctuation to show verbal pauses and completion of a thought can be adopted by other on-line classes. The use of punctuation became evident in the discourse analyses and is a technique that members should become aware of in order to more fully portray their thoughts in a text-only environment. Table 37 contained a list of the techniques members of this class used to compensate for the lack of visual and non-verbal cues present in traditional classrooms. Other distance educators may want to consider including some of these techniques to convey messages that can be more clearly interpreted.

Findings of this study have shown that there are ways to compensate for the lack of face-to-face conversational cues. By being familiar with both the implementation of such cues and the importance of using them to convey messages that are not misinterpreted, distance educators can be better prepared to help their students participate in an on-line environment that supports student learning. The techniques developed by this on-line community were built on the knowledge of its participants, both the instructor and the students. As members interacted in the on-line environment, they experimented with techniques through their own use of them or through the introduction to resources for learning them.

Question Three - What Other Factors Help Construct the Community?

When the work of this dissertation was begun, it was thought that questions one and two would address the main issues of constructing a community in an on-line environment and this question was designed to investigate any additional considerations. As the analyses of the data continued, it became more apparent that the pedagogical factors were vital to this community construction.
The earlier discussions regarding the instructional design and the use of student-centered techniques have addressed the pedagogical factors in these areas. What has not been addressed is the constant and continuous facilitation and maintenance that is required on the part of the distance education teacher in order to maintain an environment that supports and encourages student learning. It takes time and effort for the instructor to create and implement an adequate instructional design which will facilitate community building and create an environment in which student learning is nurtured.

The on-line environment offers a variety of resources to enhance student learning, such as web sites, e-mail, listservs, on-line testing, and interactive virtual environments. The distance education teacher should plan the most efficient use of these available media and continuously facilitate student participation in them.

An insight into the type and magnitude of the instructor's responsibilities in an on-line class was provided by the activities found within this study. The instructor was reliable and quick to reply to the e-mail and the listserv messages. He read and provided feedback to students in these media on journals, journal responses, and technical and curricular questions and did so in a timely manner. He reinforced student efforts in all media. He also constantly facilitated student learning and encouraged their involvement in their own learning. He participated in the real-time discussions, and yet stayed cognizant of bringing them back to focus on the main points of the story and issues that needed to be considered. He continually monitored the flow of the conversation in the MOO environment to ensure that it allowed enough time for off-task conversations, yet the planned on-task activities also were addressed adequately.
Findings of this study demonstrate that teaching in an on-line environment requires extensive time and effort on the part of the teacher in order to maintain an environment that offers students opportunities for learning. When the interactions of the teacher, the individual student, and the collective work together, they have the potential to produce a synergistic effect. The instructional process is a dynamic system and the efforts of the teacher are an integral component of this system. Both student and teacher need to be active participants in this process.

Findings and discussions in Chapter 5 have addressed the three research questions of this study. They have looked at how the class members constructed a unique community by their actions and interactions both in-the-moment and throughout the semester. How these interactions were structured by the instructional design, facilitated by the instructor's student-centered approach, and negotiated within the group interactions was presented. Next, the ways that class members compensated for the lack of face-to-face conversational cues by using available techniques to direct their messages to individuals in a group environment and by creating other ways to convey emotion, body language, etc. were presented. Presentation of findings relating to the third question provided environmental, pedagogical, and demographic considerations in the construction of this community.

Limitations of the Study

The work of this dissertation focused on discovering how the social culture of one postsecondary distance education class was constructed. The findings from this study of a unique environment with one instructor's methods and students with unique characteristics is not readily generalizable. Qualitative researchers do not seek to
generalize, rather they intend to describe and theorize in depth on one particular setting. "Once the typicality or atypicality of a phenomenon is established, bases for comparison then may be assumed, and results may be translated for applicability across sites and disciplines" (LeCompte & Preissle, 1993, p. 349). Therefore, it is anticipated that fellow educators and researchers will be able to use these findings in their own environment by comparing and contrasting the specifics of this study with their own and using those portions which are applicable.

Thirty-seven of the fifty-five students enrolled in this class agreed to participate in this study. Overall, only thirty-two students completed the course. Of these, twenty-eight students were study participants. The personal characteristics of students who volunteered may differ from the characteristics of those students who chose not to participate. Therefore, the data used in this study may have been influenced by the volunteer personalities of the participants. Borg and Gall (1989) tell us that students who volunteer may have different characteristics than those who do not volunteer. One of the characteristics mentioned was that volunteers tend to be more socially oriented. This raises some questions in regard to the students who volunteered, the community building, and the students who did not complete the semester: Did the fact that they had volunteered for a study encourage some to remain in the course? Did the less socially-oriented students not volunteer and not build rapport or develop feelings of belonging?

This study, conducted in the spring, sought to discover how a community was built by capturing and analyzing class members' interactions on-line. The researcher tried to eliminate as many outside influences on the construction of the community as possible by identifying a class in which the students and teacher had no past history together and one
in which the instructor was experienced in resolving any technical problems that might occur. In order to get the instructor with the most experience, it was necessary for the researcher to choose a class in which members may have had a history with each other. Although there were no prerequisites for this class, some of the students had had other distance education courses at this college, and some of these classes were taught by the same instructor. It appeared that a few students had also had prior experiences with each other. A first semester distance education class wherein all students were unfamiliar with distance education, the college, the instructor, and other students may have more effectively eliminated outside influences on the development of the community.

Another limitation of this study was the selection of characteristics and key events to analyze. Ochs (1979) tells us that constructing a transcript is a theoretical act. In this study, the on-line transcripts were generated objectively by the software and therefore, were neither theoretical acts nor subjective. However, the selection of community characteristics and the key events from the data that created them was subjective and was influenced by the researcher's theoretical persuasion.

Educational Importance of the Study

This study should be beneficial to educators and researchers by providing a lens with which to view the processes that shape the construction of the culture of on-line classes. It will allow educators to become aware of how on-line communication may affect student perceptions of the social environment of the classroom and ultimately, how it affects student feelings of belonging to or isolation from this community. Insights into how on-line communication can result in student perceptions of being part of the culture of the
classroom may lead to better learning environments for students in distance education classes.

The application of a sociolinguistic methodology to the data made visible the instructor’s use of constructionist techniques to build rapport, increase interaction, and decrease feelings of isolation (Wolcott, 1996). It is hoped that this study will contribute to the research that supports on-line delivery of classes and use of constructionist teaching techniques.

Interactional ethnography provides a promising framework for future researchers investigating on-line education because it affords a methodological and theoretical approach to what constitutes the unique environment of the on-line community. It also affords a way to support and triangulate the ethnographic findings with identification of how the over-time community members’ interactions created the environment. By joining previous research on the classroom as a culture (Collins & Green, 1992; Gutierrez, 1993; Floriani, 1993, 1997; Heras, 1993; Lin, 1993; Putney, 1996, 1997), this study should help forge the path for other researchers and educators to take a closer look at the construction of community characteristics, in both traditional and on-line education, through the use of interactional ethnography. This should provide a better understanding of teaching and learning in both traditional and distance education.

Implications for Practice

Practitioners of distance education may want to use this study as a guide to reflectively view their own distance education offerings and apply some of the constructionist practices made visible to their own endeavors. Practical examples of how the instructor of
this class modeled these practices were provided in chapter four. Student-oriented
techniques espoused by Wolcott (1996) to build rapport, decrease feelings of isolation,
and enhance interaction were made visible in this paper. Some of Wolcott’s recommended
practices that were modeled by the instructor and made visible by interactional
ethnography were listed in Table 42.

The use of interactional ethnography to analyze the transcripts of on-line dialogue
from other distance education classes may be useful to provide insight for other educators
anticipating conducting such a class or to evaluate their own teaching effectiveness (e.g.,
Did I successfully promote student involvement, build rapport, decrease feelings of
isolation?).

Interactional ethnography used in teacher education programs to demonstrate the
moment-by-moment dialogue construction and the over-time shaping and reshaping of
classroom community practices may also be beneficial to provide a closer look at the
sociocultural environment. By providing real-life concrete examples of dialogue that show
the application of collaborative learning, student-oriented instruction, zone of proximal
development, and other educational approaches, teacher educators can provide their
students with opportunities to learn how these educational constructs are put into practice.

Theory has informed the analyses of this research. It is hoped that the findings of these
analyses will inform practice.

Recommendations for Future Research

The following five recommendations for future research are based on this study’s
findings and limitations.
1. The current study investigated how the interactions of a class's participants over
time led students to define themselves as part of a distance education community.
Achievement outcomes were not the focus of this study. Therefore, student grades,
graded quizzes, and draft and final essay assignments were not used in this study. Future
research should tie student achievement outcomes to the opportunities for learning
(Tuyay, Jennings, & Dixon, 1995) that were provided by the social environment of the on­
line class.

2. Approximately 58 percent (32 of 55) of the number of students that were enrolled
in this class completed the semester. As discussed in Chapter 4, retention rates in distance
education classes are usually 10 to 20 percent lower than in traditional classes. More
research is needed to investigate why students drop out of distance education classes and
what can be done to reduce this rate.

3. This research investigated a single distance education class to see how the
community was constructed. In order to obtain more of an understanding of the impact of
class members' actions and interactions in on-line courses, future researchers should
compare and contrast multiple distance education classes. Researchers should consider
conducting a longitudinal study that follows students from an initial on-line class as they
move on to other distance education classes in various disciplines. This may provide
answers to the questions: Do students who have completed one on-line class fare better in
future distance education classes? How does this past experience influence student
participation in future on-line studies? Future research that replicates this current study
and employs an interactional ethnographic methodology has the potential to make visible
how the students use what they learned, both intertextually and intercontextually, in future
classes. This methodology makes it possible to reveal how the students' historical knowledge of previous interactions and actions that is carried forward affects the social and academic knowledge that is constructed in subsequent classes.

4. The present study indicated students had various levels of technical expertise. Future researchers should compare and contrast student perceptions and outcomes between two different distance education classes: one without prerequisites and one with a prerequisite computer technology class. This could help answer the questions: Would this class have been less intimidating and more user-friendly if all students were familiar with the technology before entering the class? Would the dropout rate be lessened by a prerequisite computer technology course?

5. The instructional design in the distance education class studied incorporated four types of on-line media: e-mail, a class listserv, MOO sessions, and web pages. Future studies should focus on student learning styles and how these styles are influenced by the instructional design of the course and the technologies used.
APPENDIX A

DEFINITION OF KEY TERMS
DEFINITION OF KEY TERMS

Asynchronous communications refers to communications that occur with a delay. For instance in electronic mail and in delayed teleconferences, users read and post their messages at their convenience, not as the communication is occurring.

Communications refers to a "process by which information is exchanged between individuals through a common system of symbols, signs, or behavior" (Webster's new collegiate dictionary, 1991, p. 266). This information exchange can occur in face-to-face communications or in on-line communications.

Cycles of Activity (Collins & Green, 1992; Green & Meyer, 1991) are groups of activities that are related (i.e., tied together) across time and support a defined goal.

Distance Education is used in this study to refer to education that is conducted when the participants are separated by time and/or location. To be more precise, "distance education takes place when a teacher and student(s) are separated by physical distance, and technology (i.e., audio, video, data, and print) is used to bridge the instructional gap" (Willis, 1994, p. v).

Electronic mail or e-mail refers to a mode of computer-mediated communications that allows computer users that are connected to a network to send messages from one computer to another. Each user has a mailbox (i.e., a disk storage area for messages) and each user can send written messages to any other user's mailbox. The recipient of a message does not have to be logged on at the time the message is entered into the mailbox. Therefore, e-mail communication does not have to occur in real-time and is an example of asynchronous communication.
Emotes are MOO commands that can be used to show emotion, body language, and other non-verbal conversational cues, such as CarrieM dances or SamuelM bleeds.

Emoticons, also called Smilies, are a combination of keyboard symbols used in the online environment that when turned sideways relay emotions. Three common emoticons are:

:-) A regular smiley, which the sender uses to convey warm feelings for the recipient (although it occasionally can convey gentle sarcasm).

;-) A winking smiley, which usually indicates sarcasm.

:-) A frown which usually indicates unhappiness (McKim, 1996, p.222).

Events are sets of activities that are related (Spradley, 1980). Taking inventory in a supermarket, holding a revival meeting in a church, and graduating from high school are all events composed of many different activities. Sometimes it is hard to differentiate between an activity and an event. At the beginning of the research it may be impossible to know if different activities constitute an event (Spradley, 1980).

Face-to-face communication implies a rich context for communicating the content of the message. Visual cues, such as facial expressions, physical characteristics, and body language that signify age, gender, race, and social status are transmitted along with the message content.

Interactional spaces have features that distinguish them, such as "organizational pattern, time, physical space, and purpose" (Heras, 1993, p. 279). They are "constructed by members of a group interacting in a particular place, at particular moments in time, and with particular configurations of participants (e.g., whole class, table group, pairs, individuals)" (Heras, 1993, p. 279).
Intercontextual relationships, as defined by Floriani (1997), are those in which students invoke, recognize, and acknowledge "previous events and the actions taken and practices used to interactionally accomplish or construct the text of these (socially significant) events" (Floriani, 1997, p. 60).

Intertextual relationships are those socially constructed ties between the various texts that are developed over time (Jennings, 1996). Texts can represent oral or written texts in the classroom. (See also definition of text in this appendix.) Bloome and Egan-Robertson (1993) define the criteria for recognizing an intertextual relationship as one that "is proposed, is recognized, is acknowledged, and has social significance" (p. 311). Examples of intertextuality are provided in the results section.

Lurking is the act of merely observing in an on-line discussion group and not actively participating.

MOOs (MUDs Object-Oriented) are a variation of MUDs that use a program approach based on the creation of objects such as virtual rooms, things and characters (Deuel, 1996).

Multi-user Dungeons, Multi-user Dimensions, or Multi-user Domains (MUDs) use on-line communications in a virtual community. They are multiple-user electronic versions of the game Dungeons and Dragons (McKeown & Watson, 1996).

On-line communications or computer-mediated communications refers to an exchange of information between individuals that is made possible only by the use of computer technology. Examples of on-line communications include electronic mail, listservs, and newsgroups.
Patterns of Practice are cultural patterns that are established by the actions and interactions of the community members that occur over time. As participants' actions and interactions are shaped and reshaped by past and future interactions throughout the cycles of activity that occur, patterns of practice for the community are developed.

Smilies see Emoticon.

Synchronous or real-time communications refers to communications that occur with no delay. For instance, in a real-time teleconference, the users are reading and entering replies interactively as the communication occurs.

A teleconference is a type of electronic mail where two or more people are communicating. Teleconferences can be synchronous or asynchronous.

Texts, when used in a cultural sense, have an expanded definition. Texts, in this perspective, are more than just printed material. They can be aural, oral, written, or visual material (Green & Meyer, 1991). Texts can include: a member's prior experiences and knowledge; dialogue from a listserv, e-mail, or MOO communication; discussions with peers, the instructor, or others; readings from web pages; or information from other media, such as television, radio, presentations, concerts, etc.
STUDENT SURVEY

NAME: _______________________

CLASS: ENGL 11 - SURVEY OF LITERATURE

(Place a check mark after the appropriate selections.)

1. Computer Experience:
   Do you have a home computer?    Yes _____    No _____
   Have you ever had a computer class? Yes _____    No _____

2. When entering data on the computer, at what speed do you type?
   Very Slow _____    Slow _____    Average _____    Fast _____ Very Fast _____

3. How experienced are you with the following?

<table>
<thead>
<tr>
<th>Technology</th>
<th>No Experience</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-mail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listserv</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World Wide Web (WWW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-user Domains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object-oriented (MOO) chat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Have you ever participated in an on-line distance education class?
   Yes _____  No _____

   If yes, please complete the following:
   What college or school? ____________________________
   What year and semester? __________________________
   What was the title of the course? ____________________
   What computer technology was used?

   (Please check all that apply.)
   E-mail _____ Listserv _____
   Video tapes _____ Audio tapes _____
   World Wide Web: _____ Computer conferencing _____
   MOO Chat Session: _____ Other: ____________________

5. Approximately how many college credits have you completed with an earned grade prior to this course?

   First class _____
   0 to 15 credits: _____
   16 to 30 credits _____
   31 to 45 credits _____
   Over 45 credits _____

6. What would you like to learn in this course?

7. What are your expectations about taking a course using only computers to communicate?
8. The following demographic data is optional:

Age group:
- Under 24 ______
- 24-30 ______
- 31-37 ______
- 38-45 ______
- 46-55 ______
- Over 55 ______

Ethnic Background:
- White ______
- Black ______
- Hispanic ______
- Asian/Pacific Islander ______
- Native American ______
- Other ______

Gender:
- Female: ______
- Male: ______
APPENDIX C

STUDENT PERMISSION FORM
STUDENT PERMISSION FORM

I, ____________________________, have been asked to participate in a research project on the construction of a classroom community/culture in a postsecondary distance education course. This research will be conducted by Virginia Bielman, a doctoral student in the College of Education, Curriculum & Instruction at the University of Nevada, Las Vegas. This research will contribute to the literature on how a classroom community/culture is built in a distance education classroom conducted primarily on-line.

I understand that my participation in this project is entirely voluntary. If I choose to participate in this project, I have the right to refuse to answer any questions at any time. I understand that all observations and records of my actions will be kept strictly confidential through the use of pseudonyms. If, during the course of the research, I decide not to participate, I will inform the researcher and be removed from the study.

The researcher will be observing the College English 111: Survey of Literature distance education class for the Spring 1999 semester. The research study will last for the entire Spring 1999 semester. The names of all participants in the study (i.e., the students, instructor, and the school) will be kept confidential. Pseudonyms will be used in all cases.

The researcher will observe and collect the on-line communications of the instructor and students in the form of: (a) class listserv communication transcripts, (b) class MOO session transcripts, and (c) instructor-student and student-instructor e-mail communication that pertains to the technology used in this class. She will also be observing the pre-course face-to-face orientation session. She will not be observing or collecting student-to-student e-mail communication nor any instructor and student e-mail that is personal.

The researcher will answer any questions about this research, now or during the course of the project. The researcher can be contacted through her advisor, Dr. Neal Strudler, at 895-1306 or by mail at UNLV, College of Education. For questions regarding the rights of research subjects you may contact UNLV Office of Sponsored Programs.

I have read and understand this consent form and I (check one of the following)

_____ am willing to participate in the research study.

_____ am not willing to participate in the research study.

Student Signature ____________________________ Date _______________

Researcher Signature ____________________________ Date _______________

(Please sign both copies. Keep one for your records and return the other to the researcher.)
APPENDIX D

DEBRIEFING SURVEY
DEBRIEFING SURVEY

1... What would you tell a student new to distance education and new to ENG111 about how things are done within this class? What kind of practices that developed this semester would you share with this student?

2... Can you identify which practices from this on-line class you will take with you to another class or other area of your life that will make classes more manageable, reading more enjoyable, working in groups easier, etc.? In other words, what did you learn in this class that will play a role in future classes or in your life in general?

3... Do you feel that the on-line environment of this class helped or hindered you getting to know other students and the instructor on a personal level? Did you develop a sense of belonging to a classroom as you might in a face-to-face environment? Please give examples, if possible.

4... If you have been in an on-line class before, how was ENG111 the same or different from those classes? For instance, in the areas of student-to-student interactions, students working in groups, instructor and student interactions, and the ability to get necessary tasks done.

5... Certain classroom communities construct a "language of the classroom" - particular words and phrases and ways of talking about the things they do that are common to members, but might be hard for outsiders to understand.

Can you think of any examples of common words, phrases, or ways of referring to events that have been used in this class that could be considered part of ENG111's "language"?

6... If you were to nominate someone in the class for ENG111 class president, who would you nominate and why?

7... What did you enjoy most about this class?

8... What did you like the least about this class?

9... Any other comments you would like to make about this semester in ENG111?
APPENDIX E

LOGGING INTO AND USING THE MOO
LOGGING INTO AND USING THE MOO

Logging into the MOO

Students met in the MOO at scheduled times for fourteen weeks (weeks two through fifteen) to discuss designated topics and exercises. After accessing the ENGI 11 course outline web page, students began the process of logging into the MOO by clicking on the hypertext link provided for each of these fourteen weeks. This provided easy student access to the Learning Resource Center at Cal State University's Northridge campus computer which was the host of the EngI11 MOO sessions.

Once the site was accessed, communication was accomplished by the use of a split screen. The top portion of the student's screen reflected what was occurring in the MOO. The student interacted with this environment by typing commands in a small window at the bottom of the screen and pressing the enter key. A welcoming message and instructions on how to enter the virtual environment with the connect command were the first activities that showed on the top screen. The computer then waited for the user to connect to the MOO.

Students without a character in the MOO typed in connect guest in the lower window of the screen and pressed the enter key to enter into the Welcome room. Several lines of text scrolled across the screen containing another welcome message, a description of the welcome room, directions on how to get help in the MOO, and directions on how to leave the welcome room and explore the virtual environment of DaMOO. The messages also encouraged users to set a name for themselves by using the @name command and to set a description for their character by using the @describe command.
Students then followed prior instructions from the class web pages and typed in @join Prof to go to the ENG111 room for their class session. The following description of the Nevada Tar Pits then scrolled across the top portion of the screen.

Nevada Tar Pits

A place where fools rush in: dark, empty, and echoing of nothingness until the coming of enquiring minds. Looking about the cavernous space, you see a bench along the wall and an exit across the way. You’re not quite sure why you are here and where this place could be.

All conversation in this room is now logged.

If others were already connected and participating in the MOO, their postings would then begin to scroll by as the user was thrown into the active dialogue of the class. Participating in the dialogue meant following the interwoven postings that scrolled by on the top part of the screen and typing in user commands in the lower part of the screen followed by pressing the enter key.

Using the MOO

Use of the MOO sessions in this study provided more of a sense of face-to-face communication than the web pages, e-mail, or listserv communication for the following reasons. Entering the MOO environment was designed to give guests a sense of entering a room and being greeted upon their arrival. Welcoming messages, descriptions of the welcome room, and directions for leaving the welcome room and exploring the virtual environment were encountered when one entered the MOO. Students were provided the opportunity to participate in whole group discussions as if they were present in the same
room. Class members and the instructor interacted in real-time. Dialogue in the MOO environment was interwoven as overlapping conversations are in face-to-face dialogue. Participants could enter and visit other rooms in the virtual environment. MOO commands provided participants with a way to include text-based cues to body language in on-line conversations.

Credit was given for student attendance and participation in the MOO sessions. Shortly after each session, the instructor provided a text copy of the discussion to all students via the listserv. Not only did this allow students who were not able to attend to stay abreast of the discussion, but it also allowed them to receive full MOO attendance and participation credit by commenting on the MOO discussion via the listserv.
APPENDIX F

SEGMENT OF ONSET OF COMMUNITY EVENT MAPPING
## Appendix F

### Segment of Onset of Community Event Mapping

<table>
<thead>
<tr>
<th>Line No.</th>
<th>Sub-event</th>
<th>Phase</th>
<th>Action</th>
<th>Potentially divergent sub-event</th>
<th>Explanation/notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96-97</td>
<td>1a. Entering The MOO</td>
<td>1n-normal 2-italics 3-underline 4-bold</td>
<td>o Instructor logs in o Std greets instructor</td>
<td>o Instructor logs in and exchanges greetings with students</td>
<td></td>
</tr>
<tr>
<td>98-99</td>
<td>2j. Experimenting with MOO commands</td>
<td></td>
<td>o MOO Q &amp; A's - posting</td>
<td>o Student checks posting to MOO is okay</td>
<td></td>
</tr>
<tr>
<td>100-102</td>
<td>1k. Getting started</td>
<td></td>
<td>o Instructor and stds exchange greetings. o Std logs in</td>
<td>o Greetings being exchanged o New student logs in</td>
<td></td>
</tr>
<tr>
<td>103-104</td>
<td></td>
<td></td>
<td>o MOO Q&quot; &amp; A&quot; s - posting</td>
<td>o Students affirm other student's posting is okay</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>1l. Getting started</td>
<td></td>
<td>o Std greets instructor</td>
<td>o Student greets instructor</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>2k. Experimenting with MOO Commands</td>
<td></td>
<td>o MOO Q &amp; A's - Posting o Uses Emoticon :o)</td>
<td>o Student thanks others for help with posting.</td>
<td></td>
</tr>
<tr>
<td>107-123</td>
<td>1m. Getting started</td>
<td></td>
<td>o Student greets instructor o Student logs in o Students and instructor exchange greetings</td>
<td>o Students and instructor exchanging greetings o Engaging in friendly banter that indicates they've been in on-line classes together before.</td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Line No.</th>
<th>Sub-event</th>
<th>Phase</th>
<th>Action</th>
<th>Potentially divergent sub-event</th>
<th>Explanation/notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>124-141</td>
<td>3a Process-oriented Q &amp; A's</td>
<td>1-normal 2-italics</td>
<td>Listserv Q&amp;A's - posting</td>
<td>Students ask instructor questions about posting their journals to the listserv.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Student also uses new Word: ISP</td>
<td>New word ISP used</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Listserv Q &amp; A's - ISP</td>
<td>Instructor gives possible reason for listserv posting problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Student asks for definition of ISP</td>
</tr>
<tr>
<td>142</td>
<td>In Getting started</td>
<td>2-halics</td>
<td>Student logs in</td>
<td>Students continue asking listserv posting questions of instructor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other students give definition of ISP</td>
</tr>
<tr>
<td>143-149</td>
<td>3b Process-oriented Q &amp; A's</td>
<td>3-underline</td>
<td>Listserv Q&amp;A's - posting</td>
<td>Students continue asking listserv posting questions of instructor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other students give definition of ISP</td>
</tr>
<tr>
<td>150</td>
<td>1o Getting started</td>
<td>4-bold</td>
<td>Student greets new log in</td>
<td>Students exchange greetings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>151-152</td>
<td>3e Process-oriented Q &amp; A's</td>
<td>1-normal 2-italics</td>
<td>Listserv Q &amp; A's - posting</td>
<td>Students ask others for help with posting to journal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>153</td>
<td>1p Getting started</td>
<td>2-italics</td>
<td>Student greets new log in</td>
<td>Students exchange greetings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>154-157</td>
<td>3d Process-oriented Q&amp;A's</td>
<td>3-underline</td>
<td>Listserv Q&amp;A's - posting</td>
<td>Students ask others for help with posting to journal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>158</td>
<td>1q Getting started</td>
<td>4-bold</td>
<td>New log in greets student</td>
<td>Students exchange greetings</td>
<td></td>
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<td>159-168</td>
<td>3e Process-oriented Q &amp; A's</td>
<td>1-normal 2-italics</td>
<td>Listserv Q&amp;A's - MOO Q&amp;A's - Great Divide</td>
<td>Instructor gives possible reasons for posting problems</td>
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<td>Student asks what Great Divide is</td>
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<td>MOO Q&amp;A's - posting</td>
<td>Students assist each other with Great Divide question</td>
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<td>Student still asking listserv posting questions</td>
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<td>Instructor explains Great Divide</td>
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<td>169</td>
<td>1r Getting started</td>
<td>4-bold</td>
<td>Student logs in</td>
<td>Students exchange greetings</td>
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<thead>
<tr>
<th>Line No.</th>
<th>Sub-event</th>
<th>Phase</th>
<th>Action</th>
<th>Potentially divergent sub-event</th>
<th>Explanation/Notes</th>
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</thead>
<tbody>
<tr>
<td>170</td>
<td></td>
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<td>1a Std. asks if another student is present</td>
<td>o Potentially divergent question when student asks if another student is enrolled in this class.</td>
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<td>171-172</td>
<td></td>
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<td>o New log in and other students exchange greetings.</td>
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<td>173-175</td>
<td></td>
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<td>o Getting name right with @ name</td>
<td>o Instructor asks new log in if she belongs in this class.</td>
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<td>o MOO Q&amp;A's - building chairs</td>
<td>o Student asks if is okay to use MOO commands to &quot;build chairs&quot;.</td>
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<td>176-177</td>
<td></td>
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<td></td>
<td>o Student greets new log in</td>
<td>o Student greets new log in.</td>
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<td>178-180</td>
<td></td>
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<td>o MOO Q&amp;A's - building chairs</td>
<td>o Instructor tells no building objects in this MOO, but can get own space and do what students want.</td>
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<td>181</td>
<td></td>
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<td>o Instructor tells student does not think other student is in this class.</td>
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<td>182-186</td>
<td></td>
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<td></td>
<td>o Getting name right</td>
<td>o Instructor and student affirming she is in right class.</td>
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<td>o Listserv Q&amp;A's - posting</td>
<td>o Instructor answers question about student presence in class.</td>
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<tr>
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<td>Action</td>
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<td>188-1d</td>
<td>Entering</td>
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<td>191</td>
<td>the MOO</td>
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<td>192</td>
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<td>199-225</td>
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<td>226-234</td>
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<tbody>
<tr>
<td>235</td>
<td></td>
<td></td>
<td></td>
<td>o Student tries to change topic</td>
<td>o Student asks how instructor’s wife is.</td>
</tr>
<tr>
<td>236-238</td>
<td>lc Entering the MOO</td>
<td>3i Process-oriented Q&amp;A's</td>
<td>o MOO A&amp;A's @help, @describe, and @examine</td>
<td></td>
<td>o Instructor tells students how to use @help to get more information on how to use @describe</td>
</tr>
<tr>
<td>239-240</td>
<td></td>
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<td></td>
<td>o Student tries to change topic and succeeds</td>
<td>o Another student asks about instructor’s wife and if they just had a baby.</td>
</tr>
<tr>
<td>241-246</td>
<td>2a. Discussion about babies/family</td>
<td>1a Personal Instructor baby/family Q&amp;A's</td>
<td></td>
<td></td>
<td>o Instructor and student talk about his personal information about his wife and baby</td>
</tr>
</tbody>
</table>
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   Winston.

   student and mentor interactions. Paper presented at the annual meeting of the
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VITA

Graduate College
University of Nevada, Las Vegas

Virginia A. Bielman

Local Address:
1292 Dalene Avenue
Henderson, NV 89015

Degrees:
Bachelor of Business Administration, 1984
University of Nevada, Las Vegas

Master of Business Administration, 1987
University of Nevada, Las Vegas

Master of Education, 1992
University of Nevada, Las Vegas

Special Honors and Awards:
UCCSN Outstanding Educator Award, 1997
Most Outstanding Educator Award Henderson Chamber of Commerce, 1995
Board of Regents' Outstanding Teaching Faculty Award, 1997

Dissertation Title: Building Community in a Virtual Classroom: Construction of Classroom Culture in a Postsecondary Distance Education Class

Dissertation Examination Committee:
Chairperson, Dr. Neal Strudler, Ph.D.
Committee Member, Dr. Rebecca Mills, Ed.D.
Committee Member, Dr. Randall Boone, Ph.D.
Graduate Faculty Representative, Dr. LeAnn G. Putney, Ph.D.