2002

Webs of support and engaged accountability: weaving community and making meaning of learning and teaching in an information age

M. Kayt Sunwood
Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/rtd

Part of the Communication Technology and New Media Commons, Curriculum and Instruction Commons, Higher Education and Teaching Commons, and the Instructional Media Design Commons

Recommended Citation
Sunwood, M. Kayt, "Webs of support and engaged accountability: weaving community and making meaning of learning and teaching in an information age" (2002). Retrospective Theses and Dissertations. 546.
https://lib.dr.iastate.edu/rtd/546
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.
Webs of support and engaged accountability:
Weaving community and making meaning of learning and teaching in an
information age

by

M. Kayt Sunwood

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education (Curriculum and Instructional Technology)

Program of Study Committee
Jackie Blount (Major Professor)
Niki Davis
Patricia Leigh
David Owen
Steve Aigner

Iowa State University

Ames, Iowa

2002
This is to certify that the doctoral dissertation of

M. Kayt Sunwood

has met the dissertation requirements of Iowa State University

Signature was redacted for privacy.

Committee Member

Signature was redacted for privacy.

Committee Member

Signature was redacted for privacy.

Committee Member

Signature was redacted for privacy.

Committee Member

Signature was redacted for privacy.

Major Professor

Signature was redacted for privacy.

For the Major Program
DEDICATION

This dissertation is dedicated to the late Senator Paul Wellstone and to all the people and issues for which he stood.

Wellstone called us to action with his words:

"The future will belong to those who have passion, and to those who are willing to make the personal commitment..."

Passion, personal commitment, and engaged accountability flowed from and through Paul Wellstone's life. He taught us how to weave Webs of Support and Engaged Accountability from which we can change the world and make it a better place for all.

Thank you for your vision and your voice, Paul.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF FIGURES</th>
<th>vi</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>viii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>xi</td>
</tr>
</tbody>
</table>

## CHAPTER 1. GENERAL INTRODUCTION
- Transformation .............................................. 1
- Tension .................................................. 2
- Voice ................................................... 4
- Connections .............................................. 5
- Commencement ............................................ 6
- References cited ........................................ 7

## CHAPTER 2. DIGITAL NAILS AND VIRTUAL WOOD: THE FOUNDATION AND SCAFFOLDING OF AN ONLINE EDUCATIONAL COMMUNITY
- Connecting to the personal ................................ 8
- The foundations of my study ............................... 9
- Speaking of voice ......................................... 13
- Conceptualizing community ................................. 13
  - Social interaction ...................................... 19
  - Social bonding ......................................... 20
  - Empirical experience .................................... 22
- Connecting awareness through action research ....... 23
  - The nuts and bolts of Edunet ........................... 24
  - Weaving meanings ....................................... 25
- Reflections on the connections ........................... 41
- References cited ........................................... 45

## CHAPTER 3. FROM SAFETYNETS TO CYBERLADDERS: A SOCIOCULTURAL-CONSTRUCTIVIST ACTUALIZATION OF “LIFTING AS WE CLIMB”
- Experiential tinder of passion, voice, and research .... 51
- Methodology: Connecting—experiences, passions, and voices 52
- Research frameworks: Connecting and intersecting .... 56
- Interpretive frameworks: Following connections to their radical roots 62
- Connecting voices, visions, research, and “Lifting As We Climb” to transform SafetyNets into CyberLadders ... 71
  - Question One ............................................. 71
  - Question Two ............................................. 79
  - Question Three ........................................... 83
  - Question Four ............................................. 89
LIST OF FIGURES

Figure 3.1  Interplay of the Edunet research frameworks, theoretical frameworks, and analytical approach ................................................................. 57
LIST OF TABLES

Table 2.1  Coding categories of Edunet data .......................................................... 27
Table 3.1  "Traditional" assumptions of education ...................................................... 62
Table 3.2  Brief introduction to learning theories ....................................................... 68
Table 3.3  Socio-cultural constructivist assumptions .................................................. 69
ACKNOWLEDGEMENTS

"It takes a village to raise a child," according to a saying which celebrates community, growth, education, relationships, and connections. In my dissertation, which exults these same fundamental components of life, I feel the need to embellish this saying with the words, "it takes a community to weave a dissertation." I researched and wrote this dissertation, of course, but this research and writing never could have or would have happened without the support, love, encouragement, and engaged accountability of those of you who have come together in "community" to facilitate the process. It would be impossible in this short space to thank all of you personally, but I hope that even though I cannot mention you all by name that each of you can trace the threads that you have contributed through the tapestry of this dissertation. A special thank you to the following people for their tremendous contributions to this dissertation and to my life.

Thank you Mom and Dad, for your unconditional love and support which led me to believe that I can do anything. This dissertation could not have happened without the gifts of "belief in myself" and "passion for life" that you bestowed upon me.

Thank you to all of the Edunet participants; to the students, teachers, administrators, friends, and family who shared the hopes, fears, concerns, and visions of teaching and learning that wove the Edunet listserv into the "online community" I engaged in and studied for this dissertation. I found in your "voices" the call to weave "Webs of Support and Engaged Accountability" that might provide us with the space, time, and encouraging atmosphere to make meaning of learning and teaching in this Information Age in which we live.
A special thanks to Cindy Graham for her encouragement and support for presenting my Edunet research at a conference in Canada. This generous support encouraged me to pick up my dissertation and to start writing again after a hiatus of over five years. Gail Craig and her online enhanced Exceptional Learner students provided me with incredible opportunities to apply what I had learned from the Edunet research about creating space and an environment to facilitate connection, conversation, and reflection for development of voice and collaborative competencies in students and practicing educators. Dean of Faculties, Rosemary Keefe, along with faculty, staff, and students at the University of Wisconsin—Superior inspired me to develop further my emerging notions about Webs of Support and Engaged Accountability at the higher ed campus community level. Roger Walkup and Tharangi Ranasinghe kept the Faculty Development Center going, providing superior service to UW—Superior while I conceptualized and wove Webs of Support and Engaged Accountability for the campus community. Thanks to all of you Superior people!

My Program of Study committee members through the years; Theresa McCormick, Leslie Bloom, Brenda Daly, Jackie Blount, David Owen, Niki Davis, Patricia Leigh, and Steve Aigner deserve particular acknowledgements and thanks. Some of you were with me at the outset, and you pointed out possible paths to get me started on this journey; some of you were along for the whole ride, prolonged and arduous as it was, supporting me and encouraging me for the duration; and some of you joined the entourage in the final stages, adding new life and breath to the process and the final product. Thank you to each of you for your unique contributions.

These acknowledgements would be incomplete without a major thank you to the state of North Carolina. While it may be unconventional to thank a state, this dissertation would
never have been written and completed without three wonderful women from North Carolina, thus I feel that it is essential to thank the state of North Carolina for gifting the world with these incredible women! I would not have finished this dissertation without the triple-teaming of these North Carolinians. Singer-songwriter extraordinaire, BeJae Fleming, provided the impetus and the organizing force to get this dissertation rolling again. She reminded me in song, that “We all got wings” and she inspired me to take wing, to soar, and to write! Sine Anahita, academic, researcher, teacher, peer reviewer, formatter, and life partner extraordinaire encouraged, supported, led, and pushed me through this process. Talking through the ideas and concepts with you helped me to make meaning and to find words. Thank you Sine, I couldn’t have done it without you! Finally, Jackie Blount, major professor extraordinaire, chalices of words can never contain the boundless oceans of thanks I owe to you. You guided me through this process, modeled how academic research and writing can be done, provided the perfect feedback, and empowered me to weave threads of theory and practice into an empowering and luxurious tapestry that I believe will enrich education and all of our lives. Thank you, again and again, for everything!

Indeed, it took a “community” to weave this dissertation. Thank you to each of you for the threads you contributed to the tapestry!
ABSTRACT

This dissertation explores political, social, economic, cultural, pedagogical, and technological challenges facing education and educators in the 21st century. The tensions surrounding educational communication technologies and the debate over the capacity or incapacity of these technologies to facilitate human connection, rather than disconnection, reverberate through each chapter. The first chapter provides a general introduction to the three articles that follow and the fifth chapter provides a general conclusion for the dissertation. The second chapter interrogates definitions and conceptions of community, culture, and communications, and explores the possibilities of creating supportive communities for educators online through computer-mediated communication (CMC). The third chapter investigates learning theories and articulates connections between pedagogical practices and emerging conceptions of authentic, connected, learning communities. The fourth chapter follows the history of technological permutations of boundaries, reconfigurations of social spaces, alterations of senses of time and place, and redefinitions of what counts as knowledge and learning. Throughout this dissertation it is argued that educators must go beyond either-or thinking to facilitate connections and relationships, and to make meaning of teaching and learning in the 21st century. Corporeal as well as online Webs of Support and Engaged Accountability (WoSEA) are proposed as approaches that might help transform schools into the authentic social enterprises that educational theorist John Dewey called schools to become back at the turn of the 20th century.
Chapter One

GENERAL INTRODUCTION

Transformation

In a lecture delivered during April of 1899 pre-eminent educational theorist John Dewey (1990) said, "The obvious fact is that our social life has undergone a thorough and radical change. If our education is to have any meaning for life, it must pass through an equally complete transformation" (p. 28). I believe that this call for a complete transformation of education remains as relevant today as it was when Dewey delivered his *The School and Society* lectures at the turn of the 20th century. In fact, I believe that Dewey's long overdue "complete transformation" of education is essential to make meaning of learning and teaching in this "Information Age" in which we live.

The title of this dissertation, *Webs of Support And Engaged Accountability: Weaving Community and Making Meaning of Learning and Teaching in an Information Age*, braids together three cords that Dewey identifies as synergistically connected, three cords that wind throughout my work: (1) community, (2) pedagogy, and (3) technology. In this dissertation, I will explore historical, political, social, economic, and cultural issues, opportunities, and challenges facing education in the 21st century in an effort to make sense of the interconnections of these strands as they wind through the community, pedagogy, and technology cords at the core of my work and world. Throughout the introduction, three interconnected articles, and conclusion of this dissertation, I will weave my experience, research, and analysis into a proposed approach for educational transformation that I hope might facilitate making meaning of learning and teaching in this Information Age.
A perusal of educational history in the 100 plus years since 1899 leads me to the conclusion that we have not fully realized the complete transformation of education that Dewey deemed, and I agree, is essential (Cremin, 1964; Cuban, 1993; Stevens & Wood, 1995). The third and fourth chapters of this dissertation will sort through the fabric of historical and contemporary educational reforms, renovations, alterations, and stasis upon which I base the conclusion that Dewey’s transformation is unrealized. It is important, here in the introduction, to present an initial thread of evidence in order to string the warp and woof, the intertwining yarns, and threads of the pedagogical tapestry I will be weaving throughout this dissertation. The following section will introduce the initial thread that I will pick up again in each of the three articles.

**Tension**

In *Experience and Education*, John Dewey ([1938] 1963) articulated his ideal for schools. Dewey said each school should be an authentic “social enterprise in which all individuals have an opportunity to contribute and to which all feel a responsibility” (p. 56). I want to take special note of Dewey’s suggestion that authenticity is built upon social enterprises in which all have the opportunity to contribute and to which all feel responsibility. I have taken up this sense of authenticity to which Dewey calls schools as a standard that I will raise and examine through each theme and cord of this dissertation.

A little over a quarter century after Dewey wrote *Experience and Education*, educational commentator Arthur G. Wirth (1966) lamented the fact that so few of Dewey’s pragmatic, experiential, student centered, socially grounded ideals had been put into practice. Wirth expressed the hope that “an imaginative use of new technology may bring the ideal
closer to our grasp” (p. 71). Wirth’s statement foreshadows the major tension with which I will grapple throughout this dissertation. The tension is between this hope that (1) emerging technologies could facilitate connections, community, and authentic, meaningful learning, and the fear that (2) educational technologies might obliterate human connections and community, making authentic, meaningful learning impossible.

I would like to turn again, to Dewey, for an elucidation of the tension-negotiating methods that I will employ throughout this dissertation. Dewey suggests that we must move beyond the reduction of conflicts and tensions into simple either-or equations.

It is the business of an intelligent theory of education to ascertain the causes for the conflicts that exist and then, instead of taking one side or the other, to indicate a plan of operations proceeding from a level deeper and more inclusive than is represented by the practices and ideas of the contending parties ([1938] 1963, p. 5).

It is my intention in this dissertation to follow Dewey’s prescription and to make a deep and inclusive exploration of political, social, economic, cultural, pedagogical, and technological challenges facing education and educators in this first decade of the 21st century. I will focus in on the tensions surrounding educational communication technologies and the debate over the capacity or incapacity of these technologies to facilitate human connection, rather than disconnection. I will offer suggestions or approaches for going beyond either-or equations, for facilitating connections, and for weaving community and making meaning of teaching and learning in this 21st century Information Age. My analysis and suggestions will flow from the deep, inclusive exploration I have undertaken in my dissertation research and writing of the tensions, conflicts, issues, and challenges facing education.
Voice

In the third chapter of this dissertation, I will explain, in depth, the research methodologies, theoretical frameworks, and analytical approaches I have employed for this project. Here in the introduction, I feel it is important to briefly explain how the action research in which I have engaged for this dissertation calls me to the first person voice I will raise throughout this dissertation. According to Usher, Bryant, and Johnston, (1997) action research is “the practice of writing and rewriting selves and the world” (p. 212). Since this dissertation flows from my heeding of Dewey’s call for educational transformation, as an educator, taking up this call necessitated examination of my own educational history and praxis in order to actualize self and world rewriting and transformation. I feel that I cannot erase my voice from my writing without losing this “active” aspect of action research.

Adding to Usher, Bryant, and Johnston’s words, another action researcher provides a second rationale for my use of the first person throughout this dissertation. Moustakas (1990) reminds me of the need for the “I” in my research and analysis when he points out how “heuristic research involves self-search, self dialogue, and self-discovery: the research question and the methodology flow out of inner awareness” (p. 11). My own struggles and issues with community, pedagogy, and technology certainly provided the wellspring from which my research question and methodology flowed. I could not silence the “active I” and at the same time honor the methodological grounding and roots of my research.

A third rationale for my use of first person is woven throughout the first two rationales, yet I feel this point is too vital not to consider individually. Action researcher

---

1 Dewey’s call that I have taken up is the transformation of schools into “social enterprise[s] in which all individuals have an opportunity to contribute and to which all feel a responsibility” ([1938] 1963, p. 56).
Richard Winter (1998) says, “action research is about finding a voice for all participants in an inquiry” (p. 61). Since my second and third chapters are about voice and about finding and creating environments and opportunities for students, future educators, and practicing educators to find their voice(s), as a student who is at the same time an educator, I feel that it is essential to raise my first person voice in this dissertation foregrounding the importance of voice.

Connections

Now that I have explained my use of the first person in this dissertation, it is important to articulate how I will raise my voice in each chapter to address the tension between the possibilities of connection and/or disconnection plaited through the community, pedagogy, and technology cords of my research. Each chapter will focus most directly on a particular cord, yet the cords of community, pedagogy, and technology will also intertwine through the entire dissertation.

In the second chapter, I will interrogate definitions and conceptions of community, culture, and communications, and I will explore the possibilities of creating supportive communities for educators online through computer-mediated communication (CMC). I will draw upon my own experience and research, as well as the literature from sociology, education, communication, and instructional technology to examine, in depth, the community strand of this dissertation.

In the third chapter, I will focus in on the pedagogy strand of my research and I will elaborate on my methodological, theoretical, and analytical frameworks and approaches. I will share how my personal struggle with schooling led me to question pedagogical
assumptions and to undertake action research to improve and enhance my own praxis. I will
explore learning theories and articulate connections between pedagogical practices and
emerging conceptions of authentic, connected, learning communities.

In the fourth chapter, I will take up the technology strand that weaves throughout
chapter two and three. I will follow the history of technological permutations of boundaries,
reconfigurations of social spaces, alterations of senses of time and place, and redefinitions of
what counts as knowledge and learning from the standpoint of my own educational journey. I
will explore the thrilling possibility that emerging communication technologies might
perhaps facilitate the connections that I had found lacking in my schooling. I will also
confront the frightening possibility that educational technologies might perhaps distance
learners even further from authentic, meaningful, engaged learning. I will draw the
community, pedagogy, and technology strands together to make meaning of learning and
teaching in this 21st century Information Age, and I will share inductions and assertions about
potentially wise courses of action that might transform schools into the authentic social
enterprises that Dewey ([1938] 1963) envisioned.

Commencement

In this introduction, I have laid out the structure of this dissertation as three
interwoven articles wrapped with an introduction and a conclusion. I have explained how I
will explore historical, political, social, economic, and cultural issues, opportunities, and
challenges facing education in the 21st century in an effort to make sense of the
interconnections of these strands as they wind through the community, pedagogy, and
technology cords at the core of my work and my world. I have promised to weave my
experience, research, and analysis into a proposed approach for educational transformation that might facilitate making meaning of learning and teaching in this Information Age. Now that I have laid the foundation for this dissertation, it is time to begin building by taking up the question of community in the chapter that follows.

References Cited


Chapter Two

DIGITAL NAILS AND VIRTUAL WOOD:
THE FOUNDATION AND SCAFFOLDING OF AN
ONLINE EDUCATIONAL COMMUNITY

A paper to be submitted to Teacher Development.

M. Kayt Sunwood

[T]he essence of feminism lies in its re-evaluation of “the personal” and its insistence on the location of “politics” and “revolution” within the minutiae of the everyday. If we take this insistence on the importance of the everyday seriously... then we need the means to research it (Stanley & Wise, 1983, p. 200. Emphasis in original.).

Connecting to the Personal

Community is the core of my life. I have built the foundation of my everyday upon my connections to community. Little wonder, as society has moved further into the electronic age, that building, facilitating, and supporting connected “online communities” has become my passion. In order to connect to the personal and actualize my passion in my practice, I took the Stanley and Wise suggestions offered above to heart; I embraced my feminist roots and orientation and I developed a research agenda to study “online community.” In this chapter I will share the findings of my research into “online community.” I will offer readers the opportunity to experience snapshots of the “online community” I studied, to confront my key assertions and analytical constructs, to survey my interpretive analysis, and to engage in personally applicable meaning-making about the foundations and scaffolding of “online community.”
The Foundations of My Study

In the 1980s I was fortunate to have access to email through the university where I worked. Somehow in these early days of email access years before the World Wide Web had even been developed (Berners-Lee, 1999), I found out about and subscribed to Sappho, an email list for lesbians. Joining Sappho and connecting with and building “community” with lesbians from around the world was an exciting and powerful experience for me. I knew no other lesbians with whom to connect at the university where I worked, and the heterosexist culture in my place of employment made me feel quite isolated and alone. Participating in the online Sappho “community” helped me to develop a sense of my own voice through connecting with others who were experiencing some of the same lack of community and isolation that I was feeling. Sappho was a space to share experiences, thoughts, and feelings, and a place to grow from the connections that were possible in this digital community space. Although I had never met anyone from the Sappho list face-to-face, I missed the women of Sappho terribly when I started a Ph.D. program and found myself needing to reprioritize my time and energy commitments. Reading and responding to listserv messages takes time and I no longer had the time to participate in the Sappho email list that had become such a supportive community for me. Because of the centrality of community to my life and being, the loss of connection to this “online community” exacted quite a toll.

During my graduate study, when I began teaching future teachers in an introductory Foundations of Education course, I was reminded of what the supportive Sappho “community” had provided for me. In class discussions, undergraduate students shared embarrassment at the verbal jabs that were continuously thrown their way because they were going into teaching, the lowliest of professions according to their peers. To add personal
insult to my students’ injury, I found my own salary, as an Education Department Teaching Assistant, much lower than the salary that Math Department Teaching Assistants earned, even though my teaching load and the hours that I worked greatly exceeded the teaching load and the hours worked by Math TAs. Through such personal experiences, in conjunction with discussions in the teacher preparation courses that I taught, discussions with other educators preparing future teachers, and through a review of the literature, I found that low prestige and status, isolation and marginalization were not personal issues with which I alone struggled. I found that many future teachers, practicing teachers, and teachers of teachers (education professors) were facing these same challenges.

In recent decades the profession of teaching has not made a particularly high showing in professional prestige ratings (McCleary Juhasz, 1990; Hodas, 1993; Scott, Stone & Dinham, 2001). According to Blau & Duncan ([1967] 2001), the occupation of teaching garners only moderate levels of prestige. In their 1967 typology of occupations and the prestige accorded to each, teachers scored 70 on a 0-to-100 scale. Other similarly ranked occupations included car salesmen [sic], and bad debt collectors. Both of these occupations that are ranked at the same level as teachers are not held in high esteem by the majority of people. The low to moderate prestige afforded to teachers might help to explain the marginalization that many teacher education students, teachers, and teacher educators experience.

Within professional education, Lanier & Little (1986) found “there is an inverse relationship between professional prestige and the intensity of involvement with the formal education of teachers.” They explain that “University faculty and their administrators remain just close enough to teacher education to avoid entrusting it to the ‘teacher educators’, yet
they remain sufficiently distant to avoid being identified with the enterprise” (p. 530). As a graduate student, I, too, was warned against assuming interest in teacher education when a well-meaning mentor told me that the “Technology” piece of my Curriculum and Instructional Technology degree would be the single aspect of my degree that would garner prestige, respect, and high salaries. I was told that I would lose academic respect and perhaps even jeopardize promotion and tenure if I too closely aligned myself with teacher education. Judge (1982) documented the low regard afforded education professors in general, and those who work most closely with prospective and practicing teachers in particular. Judge’s identification of this issue is illustrated in the words of teachers from Australia, New Zealand, England, and the USA. The following sample of representative quotes gathered during Scott, Stone & Dinham’s (2001) international study of teacher discontent demonstrate how low regard and negative attitudes profoundly affect educators:

- In order to effectively educate and care for children we must be respected, have status and be held in HIGH esteem. Raise salaries – it’s a start.
- I also feel considerably underpaid. There are few perks to the job, if any. When I compare myself and people in industry I feel particularly cross, especially since I am better qualified than many of them.
- Lack of recognition for experience and skills, constant denigration of skilled staff.
- Total lack of respect for teachers.
- The press always seems to be hammering teachers. (p. 14)

The feelings of low regard and lack of status expressed in the words of the teachers above is exacerbated by the lack of opportunity to connect or dialogue with others in the same circumstances. Troen & Boels (1988) point out that, “schools are organized in a way that prevents collegial interactions” (p. 690). Peck (1993) reports, “teachers work in isolation behind closed doors, and very few people, even in the same institution, have more than a
hazy idea of what goes on behind them” (p. 83). Such institutional organization results in isolated teachers in insular classrooms feeling secluded and marginalized with no way of connecting with others (Troen & Boels, 1988; Garrison, 1988; McLaren, 1989; Clark, 1987; Britzman, 1991; Cherryholmes, 1988; Giroux, 1991; Hodas, 1993).

The more I read about and felt the weight of this low status and seclusion, and the impact these realities had on myself, my students, and my colleagues, I could not help but wonder if an opportunity to connect, dialogue, and support one another might counteract the isolation, disconnectedness, and lack of voice that educators seemed to be suffering. I thought about Sappho, and what that online community had done for me as a lesbian, and wondered if a similar electronic e-mail discussion list for future teachers, teachers, and teacher educators could do the same thing for educators, another marginalized group to which I belonged.

Such wondering gave birth to an unstructured electronic mentoring community for teacher-education students, practicing educators, and anyone else interested in education. In 1994, I created, and began participating in and studying Edunet, an email discussion list. Through my study of Edunet I hoped to explore the possibility of creating an electronic “community” where teachers and future teachers could meet and share their experience, questions, hopes and fears. I hypothesized that this online mentoring “community” would help to tear down classroom walls (metaphorically), connect educators and future educators, decrease isolation and marginalization, and provide an environment that might facilitate the development of voice. What I mean by the development of voice will be explicated in the following section.
Speaking of Voice

For this research, I defined the term "voice" as the sense of taking oneself seriously, reflecting on thoughts, feelings and practice, and having words to express this reflection to oneself and others. My understanding of voice and the sense of voice that I was interested in developing and studying is articulated in Marcia Baxter Magolda’s (1999) work *Creating Contexts for Learning and Self-Authorship: Constructive-Developmental Pedagogy*.

Teachers are members of a knowledge community that students want to join, but students need to become fluent in the knowledge community’s language to do so. Students’ experience is the source ... [of entrance into the knowledge community conversation]. As students become members of the new knowledge community, their participation in “talking together and reaching agreement” implies the need for self-authorship-constructing their own perspectives in the context of the knowledge community (Baxter Magolda, 1999, p. 16).

Edunet, the virtual online “community” that I called into being, was meant to facilitate this bridging of worlds and communities of knowledge that Baxter Magolda describes. The opportunity to converse, online, with teacher education students, with education professors, with practicing teachers, with school administrators, and with others interested in education seemed the perfect way to provide space for talking together and constructing personal perspectives within the context of the “education” knowledge community.

Conceptualizing Community

It became clear early on as Edunet moved from conceptualization to actualization, that the concept of community, and the possibility of “online community” were important focal aspects upon which to base my study. But as I quickly realized, the word “community” has had multiple and shifting definitions. I found that “community” and the relationships that make up community have been explored and theorized from the times of Confucius, Plato,
and Aristotle. The concept of community has been the subject of sociological study since the closing decades of the 19th Century (Tönnies, [1887] 1963). In *Gemeinschaft und Gesellshaft* (usually translated into English as *Community and Society*) Tönnies proposed the ideal types of Gemeinschaft and Gesellshaft as a means by which to understand relationships, community, and society. Gemeinschaft, according to Tönnies, flows from “natural will” in an almost organic manner. The “natural” interrelationships of Gemeinschaft, such as family relationships, are rooted in instinct and affection, are ends in themselves, and are considered valuable in themselves. In contrast, Gesellshaft is characterized by relationships based on rational will, undertaken for attainment of specific ends, for utilitarian purposes. Profit-driven business relationships which are based on capitalistic, utilitarian ends rather than natural, organic affection epitomize Tönnies’ Gesellshaft archetype. It is important to realize that Tönnies Gemeinschaft and Gesellshaft are ideals and mental constructs and not classificatory categories. These ideal types do provide conceptual devices for making sense of relationships, community, and society, however. Tönnies, Durkheim, Weber, Wirth, and other influential sociologists at the turn of the 20th century and beyond theorized that society’s move towards more Gesellshaft-like rather than Gemeinschaft-like relationships made research into community a vital topic of sociological study. The concept of community was so central to sociology that community and the Gemeinschaft/Gesellshaft typology provided the framework for many of the major advances in social theory for the next half century. During the 1950s and 1960s, the significance of community research and community as a research site began to fade (Lyon, 1999), however, as other research foci came into vogue. During the late 1970s and 1980s the concepts of Gemeinschaft and Gesellshaft were once again employed as keys to understanding community and society.
(Poplin, 1979). An explication of how Gemeinschaft and Gesellshaft inform the Edunet study will be explored later in this section. At this point, it is important to take a look at the research that arose around the intersections of technology and community.

For over two decades, technologists, anthropologists, sociologists, and other theorists from diverse disciplines have debated the concepts of computer-mediated communication (CMC), community and culture (Hiltz & Turoff, 1993; Mason, 1998; Escobar, 1994; Cohen, 1985; Feenberg, 1989). These debates, which will be explored in greater depth shortly, question whether it is appropriate to apply the term “community” to any conceptual categorization of relationships devoid of a physical face-to-face component. By the mid 1990s virtual communities had become a burgeoning avenue of research, as email, listservs and digital communication became a reality for growing numbers of people. I was happy to find, during the time I was creating and developing my electronic mentoring listserv, researchers were beginning to suggest that virtual communities such as the one that I had created and was researching were not only possible but also essential as we “surfed” into the new millennium (Harasim, 1993; Wellman et al., 1996).

I could not take particular researchers’ suggestions of the promise of virtual communities as reality, though. Before I could study online community, I needed to explore this basic question: “What constitutes community?” According to Dennis Poplin (1979), sociology has been plagued by inconsistency and ambiguity in some of its basic terminology. Poplin says the term “community” falls squarely into this ambiguous territory. Years before Poplin commented on the ambiguity of community, Freilich (1963) suggested that, "since a requisite of science is specificity of terminology, we must conclude...that at this time ‘community’ is a non-scientific term unless separately defined in every paper which uses it."
In honor of Freilich's exhortation, I feel that it is important to define how I will be using the term "community."

While researching conceptions of community, I found that George Hillary (1955) gathered no fewer than 94 definitions of community from the scholarly literature. Hillary's research provided the foundation upon which definitions of community have been built since the mid point of the 20th century (Lyon, 1999). I would like to use Robin Hamman's elements of community as a basic definition for this study because, in spite of the great deal of ambiguity that characterizes community conceptualization, most definitions include the elements that Hamman synthesized from Hillery's groundbreaking work. Hamman (1997) suggests that a community is: 

"(1) a group of people (2) who share social interaction (3) and some common ties between themselves and the other members of the group (4) and who share an area for at least some of the time" (p. 1).

My study will demonstrate how Hamman's definition of community was realized through the Edunet listserv. Categorizing listservs and online groups as communities is not universally accepted nor agreed upon, however. For this reason, it is important to look at the arguments against classifying Internet based groups as communities. I will explore these arguments through the framework of Hamman's definition. Much of the controversy over the possibility of online community revolves around Hamman's second and fourth elements: sharing social interaction and sharing an area. The questions of "What constitutes social interaction?" and "What qualifies as an area?" are matters of intense debate. I would now like to examine the debate over imagined and real community in order to set the stage for my analysis of the Edunet research.
Thomsen, Straubhaar & Bolyard (1998) hint at how electronic communication is fueling controversy over “real” community. They point out that “Computer-mediated communication is changing the way we define and view the concept of a community.... The change, however, is not without some resistance” (online). Such resistance or concern is articulated by Calhoun (1991) who says that the shift from rural to urban societies, coupled with the availability of electronic communication has given rise to indirect social relationships that are more imagined than real. Berry (1993) elaborates on Calhoun’s concern, suggesting that only the “illusion” of community can be created electronically. What Berry means by the “illusion of community” is further elucidated in Freie’s (1998) book entitled Counterfeit Community. Freie (1998) maintains that relationships built online are merely superficial, secondary relationships based almost entirely on the written word. He claims that these online relationships do not compare to the rich and complex primary relationships that constitute “real” community. Such concerns about authentic relationships hearken back to Tönnies’ ([1887] 1963) Gemeinschaft/Gesellschaft typology. Oldenburg (1989) provides an analysis of 20th century community that revisits Tönnies’ typology. I will use Oldenburg’s analysis to provide a background upon which to examine Freie’s claims that online communities are counterfeit communities.

Oldenburg laments that in modern times the social bonding space of Tönnies’ Gemeinschaft has been replaced with the emotional disconnect of Tönnies’ Gesellschaft. According to Oldenburg, traditional communities have declined as people have moved to suburbs, far from local pubs, cafes, and inexpensive places where community members interact with others and discover the connections that they have in common. Oldenburg says that, in order to foster authentic community, we need a “Great Good Place” where we can
relate and engage in informal public life and community. While Freie claims that authentic relating and engaging is impossible electronically, Rheingold (1993) and Jones (1995) disagree. Based on their personal experience with CMC and their extensive study of computer mediated communities, Rheingold and Jones suggest that online communities offer solutions to the loss of the Great Good Place that Oldenburg has documented. They suggest that electronic communities are the local pubs, cafes and gathering spaces of the digital age.

Cultural sociologist Karen Cerulo’s (1997) work also challenges Freie’s claims that online community is inauthentic, if not impossible. Cerulo supports the suggestion that online communities are an answer to the loss of the Great Good Place and she charts the ways in which CMC facilitates social connectedness and social relationships. In order directly to address the critics who consider online community impossible, Cerulo has identified three key analytic concepts of vital importance in studying online community: (1) social interaction, (2) social bonding, and (3) empirical experience. These three analytical concepts are grounded in Hamman’s definition of community. I feel that it is important to explore Cerulo’s analytical concepts, since the authenticity or genuineness of social interaction, social bonding, and empirical experience in online communities are the core of the “Is online community real community?” debate. In the following section I will briefly present each concept, then I will use these concepts as an analytical structure from which to weave meanings from the Edunet research in successive sections. Cerulo’s analytical structure is particularly apropos for my Edunet study since my personal experiences with the Sappho listserv which provided social interaction, social bonding, and a deep and real sense of community for me launched this excursion into emancipatory action research in my classrooms.
Social interaction

Social interaction is the first of Cerulo’s analytical concepts. Cerulo (1997) points out that physical co-presence has been a major determining factor for judging the significance and quality of communicative exchanges. She explains, “We speak of the closeness and trust born of mediated connections using terms such as pseudo-gemeinschaft, virtual intimacy, or imagined community. Such designations reify the notion that interactions void of the face-to-face connection are somehow less than the real thing” (p. 50). Cerulo is questioning the use of terms like pseudo-gemeinschaft (false feeling of community), virtual intimacy and imagined community. She is pointing out that these terms themselves privilege face-to-face connections as more “real” than computer-mediated connections and relationships. Purcell (1997), another contemporary sociologist, also argues against the notion that face-to-face social interaction is the best, or the only “real” interaction. According to Purcell:

Co-presence does not insure intimate interaction among all group members. Consider large-scale social gatherings in which hundreds or thousands of people gather in a location to perform a ritual or celebrate an event. In these instances, participants are able to see the visible manifestation of the group, the physical gathering, yet their ability to make direct, intimate connections with those around them is limited by the sheer magnitude of the assembly (p. 102).

Both Cerulo and Purcell make the point that questioning the primacy of “physical” “face-to-face” presence is vital now that “virtual” presence has become possible. In other words, it is important to interrogate the assumption that face-to-face interaction and communities are inherently better than online interaction and communities. Spears & Lea (1992, 1994) voice such interrogation with their charge that analysis of computer mediated communication (CMC) has been overly influenced by reliance on spatial and physical parameters to frame reality. They claim that spatial and physical framing is compounded by Cartesian
interpretations that view the social as external to the individual. Within these interpretational frameworks they are criticizing, social presence is seen as a result of physical, spatial, or tangible elements totally outside of the individuals involved in the social interaction.

Abandoning the primacy of face-to-face physical and spatial metaphors is proposed as a first step towards understanding the wide-ranging effects and possibilities of CMC.

Joining the interrogation of the primacy of face-to-face interaction, Hiltz & Turoff (1993) suggest that computer conferencing and online interaction provide for stored human experience and shared information space. They point out that a record of stored experiences and a space for these records are not usually elements of face-to-face communication and interaction. Rourke, Anderson, Garrison & Archer (1999) analyzed computer conferences to determine how social interaction is facilitated through sustained communication and stored experiences. They have developed a template for assessing social presence and the nature and quality of critical discourse online. I conjecture, and I will provide evidence in succeeding sections, that such historical records of experience and interactions might make computer-mediated communication more facilitative of relationship building than ephemeral face-to-face communication and interaction. And this brings us to the second of Cerulo’s analytical concepts: social bonding.

Social bonding

As outlined earlier, some scholars suggest that computer-mediated communities are unable to foster substantive and genuine personal relationships (Parks, 1996; Beninger, 1987; Berry, 1993; Freie, 1998). Exchanges that take place online are said to lack the level of intimacy and self-disclosure characteristic of more traditional interaction. Concerns are
raised that online communication could lead to superficial social connections and relationships, or perhaps even connections with the "technology" instead of human social connections and relationships (Calhoun, 1991). Kiesler, Siegel, & McGuire (1984) claim that computer-mediated communication is more likely to produce social isolation rather than social connectivity. While speaking more of immersive virtual reality (data gloves, head-mounted displays, etc.) than of strictly CMC, Reid (1995) describes virtual reality as primarily an imaginative rather than a sensory experience. Critics of CMC employ such descriptions of virtual spaces as imaginary to bolster their framing of Internet connections as invalid sites for emotional involvement or bonding. Computer-mediated communities are unable to produce legitimate social bonding according to those who hold such assumptions about the imaginary nature or the poverty of online connections. Extending this vein of thought even further Monke (1999) expresses grave concerns about the social isolation and superficial aspects of CMC from a philosophical and policy standpoint, especially in relation to K-12 schools. Burniske & Monke (2001), however, follow up with the suggestion that it is not inherently computer-mediated communication that is superficial or socially isolating, but perhaps the ideology and resulting purposes to which CMC is employed that are problematic. In *Breaking Down the Digital Walls: Learning to Teach in a Post-Modem World*, they share their experiences with, concerns about, and suggestions for utilizing computing and CMC to develop critical thinking, and to facilitate genuine dialogue and perhaps even global understanding.

Other researchers take even more optimistic stances on the social bonding question. Parks (1996) and Thomsen (1996) suggest that rich relationships can be facilitated online. These researchers report evidence that social bonding and genuine relationships are indeed
fostered through CMC. And Paccagnella (1997) posits cyberspace as an ideal place for building personal relationships and social norms that are absolutely real and meaningful. Indeed, documentation of social bonding online, with special emphasis on the development of online learning communities is increasingly researched and reported (Harasim, Hiltz, Teles, & Turoff, 1995; Harasim, 2000; Palloff & Pratt, 1999; Laferrière, Breuleux, Fitzsimons, & Baker, 1999; Davis, 1997; Campbell & Yong, 1996; Seabrooks, Kenney, & LaMontagne, 2000). In the analysis section of this chapter I will use the Edunet research to support the conclusions that social bonding and learning communities can be fostered and sustained online.

Empirical experience

The third of Cerulo’s (1997) analytic concepts, “empirical experience” revolves around the perceived truth or veracity of an experience in the mind of the experiencee. In other words, do the people doing the experiencing, feel that what they are experiencing is “real?” Thomsen, Straubhaar & Bolyard (1998) provide rich evidence demonstrating how online newsgroup members experienced their online newsgroup as a real community. Baym (1995) also documents how newsgroup members considered their online experiences, relationships, and connections as real. Galanouli & Collins (2000) report that students described computer conferencing as a “great experience” that helped to alleviate the pressure and stress of student teaching. These researchers use the words of “online community” participants to provide evidence for judging from this empirical experience standpoint. “Online community” members attesting to the veracity of their experiences provide evidentiary support for social theorist, Steven Brint’s (2001) suggestion that the power of
community is based in human social relationships which provide familiarity and safety, loyalty, mutual concern, support, and appreciation for community members’ full personalities and contributions to group life rather than deference to their rank or title. Posts to the Edunet listserv demonstrated these important aspects of community that Brint identified. Edunet posts extolled the concern, support, and appreciation that participants experienced online. This brings me full circle from my personal experience of the “realness” of online community through a review of the literature about online community and back to my Edunet research employing the words of Edunet members to analyze and understand the meaning and reality of online community.

Connecting Awareness Through Action Research

As I intimated earlier, I was drawn into this study through a triangle of interconnected awarenesses: my own personal experiences with isolation, marginalization, and lack of voice; my discussions with students and colleagues about these concerns; and the literature on teacher isolation, marginalization and lack of voice. I decided that the best way to address these intersecting awarenesses was to take the advice of Stanley and Wise, connecting to the personal through the “minutiae of my everyday.” So I undertook an emancipatory action research agenda (Carr & Kemmis, 1986) in the classrooms where I taught. Discourse analysis based in educational interpretive action research is the domain of action research in which I engaged (Reinharz, 1992; Erickson, 1986). In order to launch this action research project, I invited students in the classes I taught to join the Edunet listserv that I had created. I also

1 I thank community sociologist, Steve Aigner, for introducing me to Brint’s work. I find Brint’s categorization of community subtypes through relationship ties and social interactions helpful for making sense of Tönnies in the 21st century.
2 Please see chapter three of this dissertation for a more comprehensive explanation of the action research methodology that I utilized.
invited educators the world over to join by placing invitations anywhere that I thought I could reach educators. The “web” of connections and community that emerged from my research was much grander and more intricately multi-textured than I possibly could have imagined at the outset. But before delving into the results of this research, it is important to examine the conception and construction of the Edunet study.

The nuts and bolts of Edunet

In the summer of 1994 I created the Edunet electronic email listserv. Edunet was designed as a space to converse and to connect with the education knowledge community, and peripherally as a vehicle of study and research. My hope was that Edunet could create an environment and opportunity for development of voice, dialogue, and reflection for future teachers, practicing teachers, and education professors. Initial participants included students in three sections of a Foundations of Education course that I taught, and teachers connected to the Internet through a federal and state sponsored school technology access project.

Students greatly outnumbered teachers at first, so I promoted Edunet online and in other educational forums. Electronic invitations placed on other listservs and electronic word-of-mouth invitations boosted practicing educators’ participation substantially. I also invited students in other courses I taught to join the Edunet listserv and to participate in the study. All who inquired about or joined Edunet were clearly informed about my plans to use Edunet for this research study and were given the opportunity to deny permission to use their postings in my research (students signed informed consent forms, online participants replied electronically for informed consent). Five students in all requested that their posting
not be included in the research. No educators in the field or any other participants denied permission to include their postings in the research.

Postings to the Edunet listserv were entered into the research database. The postings of the students who requested that they not be part of the study were flagged and were not entered into the database. Other documentary resources for this study included personal email and records of face-to-face discussions about the intent and meanings of particular Edunet postings, information and documents about Edunet, field notes from five years of participant observation on Edunet, and member check triangulation of data and findings. My analysis focused on the entire corpus of these documentary resources. I employed discourse analysis based in critical emancipatory action research as my interpretive research methodology.

Weaving meanings

From the inception of Edunet, "community" immediately began developing, coalescing and encompassing the students, teachers, educational professionals, administrators, and teacher educators subscribed to the listserv. Personally, as a participant-observer in Edunet, I felt community developing from the very first days. The analytic criteria of social interaction, social bonding and empirical experience seemed to be met from the outset. Students who had not said a word in class, and students from various sections of classes were connecting, and relating to and with me and with practicing teachers online. The level of student engagement with the course material and with the educational knowledge community was greater than I had ever experienced in face-to-face classes.
I was able to track community development in my analysis of the documentary resource data compiled for this study. Analysis was accomplished through continuous reading of the documentary resources as the study was progressing, and by analyzing the entire corpus of data at the conclusion of the study. After an initial reading of all of the documentary resources for this study, assertions were generated through induction, and specific instances were examined to discover and to identify commonalities. I reviewed the data corpus repeatedly to explore the validity of the assertions that I had generated. Disconfirming as well as confirming incidences of evidence were sought. I reviewed my field notes and other data sources to generate and to test assertions by looking for key linkages among the various types of data. Member checks and peer debriefings were employed to ensure reliability and validity.

I will not go into a quantitative detailing of the data in this particular chapter since it is the qualitative analysis of Edunet as community that I feel is most essential. However, the following snapshot of the data set might help to provide an overview within which to understand the examples I have chosen.

Edunet fluctuated in membership and participation of members in accordance with the academic calendar. A range of 300 to 500 members was common. Individual participant's frequency of posting ranged from never to over 20 posts per day. Students in the classes that I taught were required to make a minimum of three posts to Edunet during the semester. In these posts, students were assigned to share insights, ask questions, and connect the course materials to the world outside of the classroom. Only four out of the 434 students assigned to participate in Edunet posted the minimum three messages required. I was thrilled to find that the average number of messages posted by the students who were assigned to
make at least three Edunet posts turned out to be 27. I responded personally to each of the assignment posts, providing private feedback to the individual students. I also participated in the ongoing conversations on Edunet.

In all, 516 students, 233 educators and 157 others posted to Edunet during the years of the study. A total of 45,368 messages were posted. I categorized and coded these posts on many different levels and from many different angles. The angle that is of primary importance here is what I have termed the “function” coding. The function coding is most germane for this chapter because it is the functions of posts that are central to identifying and understanding social interaction and social bonding. Table 2.1 indicates the final categories under which I coded posts after successive analysis. A single post could have multiple function codes.

Table 2.1 Coding categories of Edunet data

<table>
<thead>
<tr>
<th>Sharing information</th>
<th>Criticizing or critiquing</th>
<th>Posting further explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requesting more detailed information or clarification</td>
<td>Adding to or expanding on what someone else has said</td>
<td>Reiterating what someone else has said</td>
</tr>
<tr>
<td>Asking opinions</td>
<td>Commenting in a directive manner (e.g. this is what you need to do)</td>
<td>Taking offense at what someone else said</td>
</tr>
<tr>
<td>Arguing with others</td>
<td>Questioning or posing scenarios to stimulate thought</td>
<td>Interpreting what others said (e.g. what others “probably” meant)</td>
</tr>
<tr>
<td>Correcting misperceptions or perceived misperceptions on one’s own part or on the part of others</td>
<td>Attempting humorous or light-hearted comments or commentary</td>
<td>Weaving strands of differing posts together and coming up with new meanings</td>
</tr>
<tr>
<td>Responding to another post</td>
<td>Expressing thanks</td>
<td>Summarizing</td>
</tr>
<tr>
<td>Expressing an opinion</td>
<td>Commenting sarcastically or responding in a belittling manner</td>
<td>Expressing support</td>
</tr>
</tbody>
</table>

3 Others included friends and family members of students and educators, retired educators and miscellaneous others.
Keeping this general overview of the data in mind, at this point it makes sense to look carefully at exemplary posts from Edunet utilizing Cerulo’s (1997) analytic concepts as a framework.

The first two posts below illustrate the development of community in Edunet. These posts establish the importance of the Edunet community to the students. Social interaction, social bonding and the empirical experience of Edunet as a "real" community weave throughout these messages posted by students during the first few months of Edunet’s existence. Of particular importance to the explication of the physical co-presence, social interaction and social bonding analytical concepts is the fact that the Jasons and Amy of these initial posts were students in different sections of different courses. These three students had no face-to-face contact. If it were not for “the net” as Amy puts it, these particular students might never have had the opportunity to connect and to build relationships.

************************************************

Jason and Jason...Just wanted you to know I think you two are awesome for making this 'net a little more interesting. You have both expressed your personal opinions in an educated way and for the most part have not tried to make the other person look like an idiot. I think some other people need to learn how to follow your examples. THANKS...oh yeah...I also wanted to say that you have been doing this all through the semester and not just at the end. That makes it all the better. I hope you two will stay on the 'net after this semester is over 'cause I know I will be.

************************************************

4 Because I obtained permission from the participants of Edunet to use postings for the research, I use participants’ actual screen names in this chapter.
Amy is the one that deserves a lot of credit. It seems that she is always responding to someone. Many posts do not get even one response. Either people don't think it is worth their time (lack of interest) or they just don't have the time. I have noticed that Amy responds to a lot of postings that would otherwise be ignored. We definitely need more Amys on edunet! I am not saying we don't have some already, but we need more!

The posts above demonstrate how a feeling of community was developing early on for the students participating in Edunet. Amy lets the two Jasons know that their posts have been important to her. One of the Jasons responds to let Amy (and the rest of the Edunet members) know the importance of responses to the Edunet community. To illustrate even further the sense of community demonstrated here, all three of the students mentioned in these posts continued in Edunet their entire time as students. They also encouraged family members who were educators to join Edunet, and they took the Edunet community with them to the schools where they found employment when they graduated. I provide these particular posts as specific examples of the common threads that wove through Edunet. Posts such as these were not unusual. Over 80 percent of the Edunet messages coded at social interaction, social bonding nodes. These particular posts provide typical instances of the feeling of community that enveloped Edunet participants.

Amy and Jason’s posts illustrate Cerulo’s social interaction and social bonding concepts and these students’ feelings of, desire for, and need for interaction, bonding and community through Edunet. The authenticity of Amy and Jason’s empirical experiencing of
Edunet is also demonstrated in their words. These posts provide evidence that runs counter to Freie's (1998) claim that authentic interaction and bonding is not possible online.

In addition to this sense of community that the first set of posts demonstrated, Edunet gave students a place and an opportunity to say things and to explore topics that they never would have had the time or opportunity to explore or share without the extension of the classroom into online space and asynchronous time. These space and time aspects that Edunet provided address Hiltz & Turoff (1993) and Rourke, Anderson, Garrison & Archer's (1999) appreciation of the stored human experience and shared information space that online communities provide.

The following posts demonstrate the sense of voice (and place and space for voicing) that was encouraged and facilitated through Edunet. In order to honor the emerging voices of these students, I will not cut and edit their voices nor unnecessarily break in with my voice. I feel that it is important to share their words as they expressed them.

Subject: Major change

At the beginning of this semester, I was unsure on whether I was interested in becoming a teacher or not. Throughout this semester, I realized through the help of edunet and this El Ed/ Sec Ed 204 class, that teaching would not be the field for me to go into. I had a large number of individuals (mostly female instructors) tell me that I should stick with it because the public school system needs more male teachers as role models. I took this to heart because I especially wanted myself to be useful and have a great effect on children.

In the welcome when Kayt told us to state our major concerns with teaching, I guess they all became reality to me and took over my life.
I now have decided to change my major because I do not feel that I would be a sufficient individual in the classroom as a teacher. I am now going to become a biology major and work to become either a pediatrician or a physicians assistant specializing in pediatrics.

I do believe that working with children is my calling in life, but I do not believe that it is the classroom. I would not have been able to make this decision without the insight that I received here. None of the styles of teaching appealed to me and I found out the morals and ideals that our American society has, and I am not willing to put up with it in the classroom.

I wish everyone luck in their teaching experience and hope that this class helped you out as much as it did me.

**********************************************************

Without the space and time that Edunet provided, I cannot imagine that this student would have ever shared with others, or maybe would have even had the opportunity to seriously consider for himself whether teaching was the right field. This student certainly did not share such soul searching face-to-face in the classroom. In all my years of teaching I have not had students share face-to-face at such a deep level how the course and the issues we were dealing with in the course affected them. Posts like this one were not atypical, in fact, each week that classes were in session at least one soul-searching message like this appeared. Such posts, and the following response to this post were indeed the norm on Edunet. I share words rather than numbers, because I want to foreground students’ voices. Again, such thoughtful consideration of course materials and issues and the personal connections to these issues did not happen in courses I taught without the digital space and asynchronous time (Hiltz & Turoff, 1993; Rourke, Anderson, Garrison & Archer, 1999) that Edunet provided.
I am writing this message in response to Kory's post about changing his major. It sounded to me as though you were trying to apologize to us. Let me assure you, there's no need for you to apologize to anyone. You know your heart better than anyone else.

So education isn't for you, but you know you want to help kids. Well, it seems you know exactly what's going on and have changed your life for the better. Not all of us are cut out to be teachers. I doubt you will be the last of us, the original guinea pigs of Kayt's edunet project, to change from education before they're done. Hell, I'd be lying to say that I haven't had second, third, fourth, and fifth thought about this major since I started during my second semester here at ISU (I was a Chem major when I started).

There's just one thing that's kept me on this path though. As I have referred to many times before, I spent half of every day of my last semester in high school with a fourth grade classroom in my home town. Remembering those faces, so filled with hope, and all the good times (and bad times, there were plenty of those, too), renews my ambition.

It's hard to change majors when you remember the tears welling in your eyes when, on your last day, thirty, nine and ten year olds threw a surprise party for you, and gifted you with cards that each of them had hand-made for you. Those cards meant more to me than the store-bought one I received from the teacher. I don't know about the rest of you, but THESE are the kind of rewards I'm looking for as I head into education. Ghod knows there aren't enough other ones.

So, Kory, there's certainly no need for you to apologize to us for leaving. I wish you good fortune and wonderful experiences wherever the turning circle of life may take you.

And as for the 'net, I suppose I owe all of you an apology myself. I know I've come off as rather a bad-ass at times, and I know I'm not the only one who feels this way. But these things
just hit me close to my heart, and stir up a hornet's nest of emotions. I make no other excuses. But I wish you all the best in all of your endeavors.

*********************************************************

While as I said, I want to honor student voices by providing a place and space for these unedited voices in this chapter, I also at the same time want to heed Michelle Fine's warning words "... when voices as isolated and innocent moments of experience organize our research texts, there is often a subtle slide toward romantic, uncritical, and uneven handling, and a stable refusal, by researchers, to explicate our own stances and relations with these voices" (Fine, 1994, p. 22). In an effort to avoid romanticized, uncritical, uneven handling, I would now like to share further interpretation of the previous two posts.

According to Baxter Magolda (1999) "promoting self-authorship is a matter of helping students transform their assumptions about knowledge and themselves.... Trying to build a bridge to connect to a moving target is hard work because it involves constant and careful listening" (p. 97). I understand Kory's realization that teaching is not for him as a major transformation of his assumptions about knowledge and himself. The second post, responding to Kory's post, illustrates the responder's growing understandings, and it demonstrates the self-authorship in which he is engaging. Self-authorship and the sense of voice that the students are exercising and demonstrating in these posts was facilitated and promoted by the careful listening, caring, and sense of community that the students and educators of Edunet experienced and provided online. Without the digital space and asynchronous time (Hiltz & Turoff, 1993; Rourke, Anderson, Garrison & Archer, 1999) that
Edunet provided, this self-authorship and sense of voice may have had little chance of developing.

To further explicate the transformation that students were experiencing in, on, and through Edunet, the following posts are a testament to the value that these future teachers found in the Edunet community. These posts demonstrate the self-authorship, sense of voice (Baxter Magolda, 1999) and space and time for reflection (Hiltz & Turoff, 1993; Rourke, Anderson, Garrison & Archer, 1999) that Edunet facilitated. These posts also hint at the overwhelming amount of time that sustained engagement in online communities can require (Hiltz, 1997; Palloff, & Pratt, 1999). In the following posts, some of the students speak directly of the time and effort required for participation in the Edunet online listserv and they express their need to “get off” for the summer or until they can find more time. I shared earlier how I was unable to continue to participate in the Sappho online community as I reprioritized my time commitments when I returned to school for my Ph.D. program. The time that is necessary for engaging in online community is a factor that must be taken into account and must be balanced, as these posts illustrate!

***********************************************************

I am going home for the whole summer so I need to get off edunet for now. I really enjoyed reading the lively discussions that edunet supported. I wish I had more time to be more involved with it. Thanks for the time and effort you offer to make this listserv work. I hope you all have a nice summer.

***********************************************************

I enjoy writing to this thing, and seeing my ideas reflected. It causes me to rethink my position, sometimes. I was tempted to leave when that whole mess of repeating messages started (I
still haven't gotten around to cleaning that out of my inbox yet), but I just decided to wait it out... I figured something interesting was bound to happen.

Wild horses couldn't drag me away.

***********************************************************

I HAVE ENJOYED DOING THESE POSTINGS BECAUSE THEY HAVE REALLY MADE ME THINK ABOUT EDUCATION AND I LIKE GETTING A RESPONSE FROM PEOPLE TO SEE HOW THEY FEEL ON THE SUBJECT THAT I HAVE WRITTEN ABOUT. THESE POSTINGS FOR ME HAVE BEEN HELPFUL BECAUSE I HAVE LEARNED NEW THINGS THAT I HAVE NEVER KNOWN.

***********************************************************

I have found edunet to be informational and I thank you for giving me the opportunity to join this community. I will see what next semester brings and if I find that I have extra time for the computer, I will join you all again. Thanks for the wonderful semester and the wonderful community!

***********************************************************

In the posts above, the students themselves describe Edunet as a community, and they express their thanks for the community that they have experienced online “on the computer” in Edunet. They also point out how much they have enjoyed “writing to this thing” and “doing these postings” and they hint at how Edunet has helped them to reflect, rethink, and learn.

Educators and educational professionals, as well as students, enjoyed the community and connections facilitated by Edunet. The following posts by practicing teachers, school administrators and other educational professionals speak to the sense of community that they experienced on Edunet, and provide insight into what the Edunet community meant to them.
Before all of you IA State people get away I just want to say thanks for allowing me to participate in this experiment. It has been instructive to me and I hope it has been for you also. It sounds like it (EDUNET) is going to continue over the summer and next year.

I expect that many of you will sign off for the summer not wanting to come back to 1000 messages. I hope that you will sign up again next fall if you are where you can access the internet whether you are a student, a student teacher, or a teacher.

THANKS for listening and sometimes arguing with me. I hope you have had as much pleasure out of this experience as I have.

I was just thinking what a great idea you had here. It not only allows your students to get in on the internet and electronic communication. It allows them to hear from some other teachers and allows us to hear them.

Amanda - This is the second message I have read of yours on this board, and I am increasingly impressed with your wisdom. It took me ten years of practice before I recognized that I didn't need to know everything in order to do my job well. You are going to be a very welcome addition to the profession of teaching!

The previous two posts, and the one that follows, point out, I believe, how powerfully the Edunet community addresses the teacher isolation and marginalization issues documented in the literature (Judge, 1982; McCleary Juhasz, 1990; Hodas, 1993; Scott, Stone & Dinham, 2001). Having a place and a safe space to connect and build relationships with other
educators and future educators seems to address needs that are not being addressed in
“physical” communities or classrooms.

******************************************************
The chances that I would have heard about William Ayers had I not been a part of EDUNET are
slim to none. I have been involved in Education all of my life, so it seems, either as a student
or Teacher. I had never heard of Ayers or Gilman or their educational philosophies until edunet.
As you know my favorite topic is Classroom management and the fact that it does not seem to
be stressed in most college curriculums. I am involved with a new teacher list and the problems
that they are having are still much the same as the ones the original students on EDUNET were
having. I have a whole directory of EDUNET stuff I saved to use again.
I think this a great way to get new teachers involved with the internet and also a way to let
them know that others have the same problems they have.
Student teachers like many other teachers really hate to go to the teacher next door for
help. They may sit in the lounge and gripe about the principal or the students but they often do
not ask for help. If they do they are likely to ask another new teacher who has no ideas either.
EDUNET provides a forum where productive informed conversation can take place.
I remember wondering who put some of the strange ideas in the students heads about what
teaching was actually like. EDUNET gives me the opportunity to hear from the teacher ed students
themselves, and to talk with them about what they are learning, and how this relates to what we are
facing in the schools.
******************************************************
The preceding message, besides speaking to how Edunet addressed isolation and
marginalization issues, also highlights how stored human experience and shared information
spaces online (Hiltz & Turoff, 1993; Rourke, Anderson, Garrison & Archer, 1999) facilitate connections, dialogue, reflection, and positive action for teachers and future teachers.

The following message from a school administrator after his attempt to suspend email delivery went out to the whole Edunet list eliciting a personal response from me, hints at the "community" that was occurring in and around Edunet, even though these read-only aspects of community participation might not always be officially documented on Edunet. While I did not have the ability to keep records establishing rates of active or passive reading compared to posting, messages like the following post helped me realize that even though some Edunet members weren't actively posting, that they may be reading posts and participating in and appreciating the Edunet community.

************************************************************

What? A real person? I was starting to think that it was just a lot of PCs talking to each other for our edification. Seriously, I will be out of town for about three weeks, and what I was TRYING to do is suspend mail deliveries until after May 25. Normally, I set listservs to nomail and when I return set them to mail. Otherwise, I'll have a lot of messages and my sysops will be very unhappy with me.

BTW, this is an excellent list, and although I do not contribute much, I do enjoy lurking.

************************************************************

The next messages and responses illustrate the reach of the Edunet community, and also the welcoming atmosphere of the community. Cerulo’s (1997) analytic concepts: social interaction, social bonding and empirical experience are demonstrated in the connections forged between these Edunetters; connections that would not have been possible without the online "space" that Edunet provided. These posts bear witness to Rheingold (1993) and Jones
(1995) suggestions that electronic communities are the pubs, cafes, and gathering spaces of the digital age.

**************************************************************************************************

Hi
My name is Ernest. I live in Durban on the east coast of South Africa. I am the head of a short course unit at a technical university and we offer a variety of short courses. My main involvement is the training of trainers and I am very interested in theories on adult learning and have been involved in research into methods and strategies for training adult learners.
I look forward to connecting to persons with similar interests.

**************************************************************************************************

Ernest:
Welcome to our community. I think you are the member whose messages travel the farthest!

**************************************************************************************************

>tj:
>
>How long have you been lurking around here.
>
>WELCOME!!!

I signed up the same night you told us about this listserv over on Delphi. Unfortunately, all I’ve had time to do is scan most of the messages that I’ve received. If it hadn’t been for that note about outcomes comparisons which was REALLY misleading, I probably would still be in lurker status. I just couldn’t let it pass without saying something though. It really set me off, I’m afraid. So now here I am, adding my 2 cents to the discussion.

**************************************************************************************************
Over sixty percent of Edunet posts (as was the case for the message that brought the above poster out of lurker status) seemed to be born out of passion over a particular issue or topic. Eighty-five percent of the posts to Edunet responded to or referenced other posts. This is an important statistic that demonstrates the level of social interaction and dialogue that occurred on Edunet. According to Shor (1992), dialogue is the “capacity and inclination of human beings to reflect together on the meaning of their experience and their knowledge.” (p. 86) As the post above points out, the Edunet community provided a space for this dialogue, reflection, and meaning-making to take place, for educators and future educators alike. The passions and emotions expressed in Edunet posts fostered dialogue and reflection. The volume of dialogue initiated through passionate exchanges on Edunet belies Calhoun’s (1991) suggestion that online communities are devoid of meaningful emotional connections.

The following post affords a glimpse of some of the depth of community, and the social interaction and social bonding that blossomed in Edunet. This post also points out the importance of the empirical experience and the connections of the personal and professional which were made possible in this community space that Edunet provided. Self-authorship, sense of voice, entrance into the knowledge community conversation (Baxter Magolda, 1999), and having space and time for reflection and for making connections (Hiltz & Turoff, 1993; Rourke, Anderson, Garrison & Archer, 1999) are all directly addressed and illustrated in this final post which I will share.

******************************************************************************

Just wanted to thank you for sharing that very personal story and for relating it to being a professional. Sometimes the comments about not wanting to work over the summers, etc. just make me so angry
because they show very little concern over the "quality" of what we're supposed to be doing. Students going into education should be looking at it as a profession, not just a job.

I am happy that we have this "space" to share the personal and the professional and make the connections between them.

**********************************************************************

Reflections on the Connections

The posts that I have shared are specific examples of the Edunet evidence suggesting that development of voice and community for educators and future educators is not only possible, but can be facilitated online. The exemplary posts that I have shared and my analysis of these posts demonstrate how Edunet indeed fits Hamman's (1997) definition of community. Edunet consisted of a group of people (ranging from 300-500 per semester) who shared social interaction (dialogue, questions, answers, arguments, support) and common ties between themselves and the other members of the group (coming together around an interest in education and finding and building additional ties, connections, and relationships) and who shared an area (an Internet space which constituted and supported a learning and a knowledge community).

I employed Cerulo's (1997) analytical framework to examine the Edunet postings for evidence of her three criteria of community: social interaction, social bonding, and empirical experience, or the feeling that the experience is real. I believe that the participants' own words speak to both the volume and quality of social interaction, social bonding, and experience of Edunet as "real" community. This evidence and the other documentary resources of this study challenge Freie's (1998) claim that electronic communities are counterfeit communities devoid of rich or meaningful connections. In fact, in Edunet I found
the opposite of the impoverished portrait Freie painted of online electronic communities. Before Edunet, the face-to-face classes where I taught seldom coalesced into anything resembling community. Even though facilitating discussions in class, and welcoming students' voices and reflections into the classroom were important values and goals to which I aspired, social interaction and social bonding in strictly face-to-face classrooms did not seem to occur to any appreciable degree. The launch of Edunet opened up a whole new avenue for social interaction, social bonding, reflection, and authentic community in my classrooms, and into and around the world.

It is my contention that Edunet indeed provided Oldenburg's (1989) "Great Good Space" for the future educators, practicing educators, teacher educators and others who participated. Beyond the pubs and cafes that Rheingold (1993) and Jones (1995) documented online communities as providing, Edunet actually served as an online teachers' lounge. In the words of one of the teacher-participants "Edunet gives me the opportunity to hear from the teacher ed students themselves, and to talk with them about what they are learning, and how this relates to what we are facing in the schools." This online, teachers' lounge aspect of the Edunet listserv certainly confirms Laferrière, Breuleux, Fitzsimons, & Baker's (1999) and Galanouli & Collins (2000) promotion of information communication technologies for teacher professional development. The above quote points out how computer-mediated communication can facilitate professional development for future teachers and in-service teachers alike.

An important contribution that the Edunet research provides is the evidence suggesting that online community is not merely ephemeral, as some research has charged (Beninger, 1987). To quote again an Edunet participant-teacher, "I am involved with a new
teacher list and the problems that they are having are still much the same as the ones the original students on Edunet were having. I have a whole directory of Edunet stuff I saved to use again.” This teacher’s words demonstrate Hiltz & Turoff’s (1993) suggestion that computer-mediated communication is a perfect medium for stored human experience and shared information space. The Edunet postings shared here provide documentary evidence of Rourke, Anderson, Garrison & Archer’s (1999) contention that online communities facilitate social interaction that is sustained through ongoing, and stored communication.

Edunet indeed facilitated the deep and meaningful online community for teachers and future teachers that Thomsen (1996) and Paccagnella (1997) found possible for other professionals. Documentation of the online community developed in Edunet was provided and analyzed above. I would like to submit personal reflections, to add to the previous voices I have shared, to document the deep, meaningful, and lasting connections forged online in Edunet.

I am not currently teaching education courses. At this time I am working in faculty development with higher education faculty helping to build and facilitate learning communities face-to-face as well as online. Even though I am not now teaching future teachers, the Edunet community continues to connect a number of us through both time and space. The Edunet listserv is still operating, even though my data gathering and my research project has concluded. One early Edunet pioneer, now retired from his librarian position in upper Michigan, continues to send missives nearly every night, and the two of us have developed a personal as well as a professional email correspondence through the years. We send pictures of our animals, and keep up on each other’s lives, yet we have met “only online” through Edunet. We have never met face-to-face. On a recent visit back to the
campus where I created Edunet, a former student stopped me to tell me that she is still connecting to Edunet, and she continues to enjoy the prolific posts from this former librarian. The "community" that we built in Edunet lives on through graduations, new jobs, job changes, promotions, retirements, and returns to school.

I have demonstrated in this chapter how Hamman's (1997) definition of community is fulfilled by the Edunet listserv. I have employed Cerulo's (1997) analytical framework to further explicate and to make sense of the "community" that developed in Edunet. I have shared evidence of how Baxter Magolda's (1999) calls for an opportunity to converse and to dialogue with others in the field of education coupled with facilitation of self-authorship through a space and place for constructing perspectives in the context of the knowledge community were realized through the online "community" that Edunet provided. This bridging of worlds and communities of knowledge that Edunet made possible speaks directly to the concept of legitimate peripheral participation that Lave & Wenger (1991) identified and defined. They claim that legitimate peripheral participation (learning) happens through engagement with and participation in a community of practice. Such engagement and participation facilitates and allows for meaning-making and identity transformation of the individual participants and of the knowledge community. This chapter has demonstrated how the Edunet online community provided the scaffolding for "engaging students in meaningful practices, of providing access to resources that enhance their participation, of opening their horizons so they can put themselves on learning trajectories they can identify with, and of involving them in actions, discussions, and reflections that make a difference to the communities that they value" (Wenger, 1998, p. 10).
It is my contention that this Edunet study is not only a demonstration of "online community" as "authentic community." This Edunet research also provides initial evidence suggesting how computer-mediated communication, through the elements of digital space and asynchronous time, may indeed facilitate meaning-making and learning in ways not possible in face-to-face only classrooms. The story of how the Edunet listserv fulfilled the elements of community was the focus of this chapter. The following chapter will delve more deeply into the question of how computer-mediated communication may facilitate and enhance meaning making and learning.

References Cited


Chapter Three

FROM SAFETYNETS TO CYBERLADDERS: A SOCIOCULTURAL-CONSTRUCTIVIST ACTUALIZATION OF "LIFTING AS WE CLIMB"¹

A paper to be submitted to Teachers and Teaching: Theory and Practice

M. Kayt Sunwood

[A]ction research is about seeking one’s own voice, an authentic voice, a voice with which to speak one’s experience and one’s ability to learn from that experience. Action research is about decentralizing the production of knowledge, removing the monopoly of universities, governments, and scientific research establishments, and giving a ‘voice’ to practitioners and to community members. It is also about helping others (our students, our patients, our clients) to find their own voices, to encourage them to speak out, to ask questions, to contest conventions and prescriptions...(Winter, 1998, p. 54).

I will use Richard Winter’s definition of action research above to structure this chapter. I will first speak of my own experience. Next, I will explain how my experience led me to a particular course of action research. I will share what I have learned from my experiences and my research, and I will connect the many voices that arose through the intersections of my research and my experiences. Finally, I will theorize about how these connected voices may indeed help to decentralize the production of knowledge and facilitate questioning and contesting of conventions and prescriptions.

¹ "Lifting as We Climb" was chosen as the motto of the National Association of Colored Women's Clubs in 1896, as discussed by Angela Y. Davis in: Davis, Angela Y. 1990. "Let Us All Rise Together: Radical Perspectives on Empowerment for Afro-American Women." pp. 3-15 in Women, Culture and Politics. NY: Vintage Books – A Division of Random House Inc.
Experiential Tinder of Passion, Voice, and Research

I originally chose teaching as a career because I felt as a teacher I might be able to
spare students from the disconnection and alienation that I had experienced in my schooling.
I was a somewhat unconventional learner growing up in a tiny town in the middle of the
USA in the 1950s and 1960s. Elementary school and high school were grueling experiences
for me. I suffered textbook lessons devoid of any connection to real world application, and
rote learning worksheets and exercises based mainly on “plug and chug” and “regurgitation”
methods and philosophies (Brown & Freeman, 1998). Schooling was, for me, stifling. I
found myself a powerless pawn of the “banking” model of education (Freire, 1993), which
required me to sit still in class and to have knowledge deposited into my brain by others.
After the teacher and the texts deposited facts into my brain, my job was to regurgitate the
same information back to the teacher through multiple choice, and fill in the blank,
knowledge level assessments. Remembering the specific words from the text to fill in the
blank on the worksheet or test was the recipe for success in my school. This direct deposit
and withdrawal “banking” model of education did not work well for me. I found myself
wanting and needing to get my hands on and my brain around the hard currency of
educational transactions. I could not seem to get a grasp on the abstract-symbolic
representation of reality that I was to receive and then retrieve.

To keep myself afloat in school, I discovered that in order to learn I had to translate
the lectures and rote exercises that the teachers and texts were feeding me. I had to transform
the school lessons into personally meaningful learning experiences by making connections
from the subject matter of each lesson to the real world where I played and worked. I had to
fan my passions for real world phenomena, and by transference, the compartmentalized
school subject matter, through these connections that I made for myself. I had to create hands-on, brains-on activities to facilitate my learning.

For me learning did not and could not happen exclusively within the confines of the school institution. For example, I orchestrated my own learning of biology and amphibian development by gathering eggs at a nearby pond then watching the eggs turn into tadpoles and finally frogs. I also learned some of the scant mathematics that I did retain by hosting frog jumping contests in which the calculation of number of jumps, distance traveled, and rates of speed required mathematical calculations. I needed to see, touch, and feel the connections and practical applications of facts to knowledge in order to learn. I could not find practical connections in the textbook exercises served up in school. Little wonder that my career aspirations turned to teaching. I felt in teaching I might be able to create safety nets to keep future students from falling through the cracks through which I had almost fallen because of the poor match of my meaning-making modes with the teaching methods employed by my teachers.

Years later, when I was teaching future teachers at a large Midwestern USA university in the early 1990s, I began to suspect that students were not the only ones who needed the safety nets that I had vowed to create and provide. I found that the future teachers, practicing teachers, and teachers of teachers (education professors) with whom I worked might benefit from safety nets as well. The educators and future educators with whom I worked lamented the low prestige and status, isolation and marginalization that they were experiencing.\(^2\) A look to the literature made it clear that the challenges these educators and I

\(^2\) Please see chapter two of this dissertation for a detailed description of the low prestige, isolation and marginalization issues facing educators.
were facing were not unique to the Midwest, or even to the USA as a nation (Britzman, 1991; Cherryholmes, 1988; Clark, 1987; Garrison, 1988; Giroux, 1991; Lanier & Little, 1986; McCreary Juhasz, 1990; McLaren, 1989; Scott, Stone, & Dinham, 2001; Troen & Boels, 1988).

Due to the connections that I was making between my own experience, my passions, and my review of research literature, I found myself, in the early 1990s, teaching future teachers and feeling a critical need to provide safety nets for the students that these future teachers would be teaching. Because of my own painful experience of almost falling through the cracks of formal education, this safety net concept seemed particularly salient for me. At this particular point in time, I did not have a clear picture of what these safety nets would look like. I also did not yet have a clear conception of the structure or materials from which I might build these nets. I did feel that safety nets were essential to provide the underlying connections that I found lacking in school, however. Despite my lack of clear conceptualizations for my emerging ideas, I did feel an urgent need to create some type of safety nets to catch students who might be dropping through the cracks of the educational system. I also began to feel the need to provide safety nets for the future teachers themselves, the practicing teachers that they would soon be joining, and the teacher educators that I worked with in higher education. In 1994, the following future forecast gave me an idea for interlocking safety nets that might weave the connections that I found lacking in schooling and in education:

The telecommunications revolution will enlarge the role of the individual with more access to information, greater speed in execution, and greater ability to communicate to anyone or to greater numbers anywhere, anytime. All trends are in the direction of making the smallest player in the global economy more and more powerful (Naisbitt, 1994, p. 357).
While I did not buy into the economic representation and rhetoric of this quotation due to my suspicion of and stance against economic globalization (Giddens, 1990; Mander & Goldsmith, 1996) and corporatization of education (Apple, 1979; Bourdieu & Passeron, 1977; Bowles & Gintis, 1976), I did see some promise in telecommunications and computer-mediated communication (CMC) as potential safety net construction tools. I did see the power of students and educators connecting and communicating online, and the potential, if handled well and wisely, for this computer-mediated communication to assuage some of the feelings of disconnection and disaffection provoked by modern education. Therefore, I set out to design an action research project grounded in my experience and built around hands-on, heads-engaged learning. My experiential tinder ignited the passions of theory and fanned the flames of my action research into an unstructured electronic mentoring community for teacher-education students, practicing educators, and anyone interested in education.

As I explained in the second chapter, in 1994 I created, and began participating in and studying an email discussion list that I named Edunet. The founding purpose of Edunet was to explore the possibility of creating an electronic community where current and future teachers could meet and share their experience, questions, hopes, and fears. I conjectured that this mentoring community in cyberspace would: metaphorically dissolve classroom walls, help connect education and schooling to the real world, and provide an avenue for educators and future educators to connect with each other. Edunet could potentially decrease the isolation and marginalization that many educators were experiencing. By creating space and an environment for connection, conversation, and reflection, Edunet might facilitate the development of voice in students and in practicing educators.
Methodology: Connecting—Experiences, Passions, and Voices

My Edunet research project was grounded in the naturalistic, qualitative research domain at the intersections of interpretive, critical, emancipatory, and action research methodologies (Tesch, 1990). I will briefly describe these domains and methods to point out how the connections and intersections of these methodologies informed my project. See Figure 3.1 for a graphical representation of the flow of:

1. the interpretive, critical, emancipatory (libratory), action research frameworks in which I rooted this Edunet project;
2. the discourse analysis and ethnography of communication analytical approach that I employed; and
3. the theoretical frameworks grounding my epistemological interpretations.

I have used flowing, non-continuous lines between the Research and Theoretical Frameworks, and around the Analytical Approach that I employed for this Edunet research project in order to represent the porous and fluid nature of these synergistic and intersecting aspects of the research.

Immediately following Figure 3.1, I will explain in depth my research frameworks and my analytical approach. In the Interpretive Frameworks section of this chapter that follows the Research Frameworks section, I will explore and explain the lower right hand “Theoretical Framework” quadrant of Figure 3.1. While I will hold the theoretical frameworks discussion until the Interpretive Frameworks section of this chapter, I feel it is important, at this point to graphically represent all of the interlocking aspects of my research to paint a picture of the overall flow of the Edunet project, and to show how the project nestles together.
This diagram demonstrates the flow and synergistic interplay between the Research Frameworks, the Theoretical Frameworks, and the Analytical Approach employed in the Edunet project. The flowing non-continuous lines between the two Frameworks and the dotted line encircling the Analytical Approach represent the porous and fluid nature of each synergistic aspect of the Edunet research.
Research Frameworks: Connecting and Intersecting

According to Tesch, "naturalistic inquiry is a term parallel to the term qualitative research, where qualitative research is meant to denote all research not concerned with variables and their measurement" (1990, p. 43). Most qualitative research that employs interpretational qualitative analysis shares some or all of the fourteen characteristics that define naturalistic inquiry:

- Natural setting;
- Human instrument;
- Utilization of tacit knowledge;
- Qualitative methodology;
- Purposive sampling [instead of random];
- Inductive data analysis;
- Grounded theory;
- Emergent design;
- Negotiated outcome;
- Case study reporting mode;
- Ideographic interpretation;
- Tentative application [instead of generalization];
- Focus-determined boundaries;
- Special criteria for trustworthiness (Lincoln & Guba, 1985, p. 39-43).

As my emerging research plan indeed shared all fourteen characteristics, I found myself embracing naturalistic, qualitative research as the overarching research domain for this Edunet project. Now that I have identified naturalistic, qualitative research as my research domain, it is important to look carefully at each of the connecting and intersecting research frameworks within the naturalistic, qualitative research domain that I utilized.

"Interpretive research and its guiding theory developed out of interest in the lives and perspectives of people in society who have little or no voice" (Erickson, 1986, p. 122). Erickson goes on to point out how this lack of voice is particularly "the case for teachers and students in American public schools" (p. 124). Since the question of teachers' and students' voice is the foreground for this study, interpretive research methodology seemed a perfect framework or methodology to employ.

In educational interpretive research, "the researcher seeks to understand the ways in which teachers and students, in their actions together, constitute environments for one
another" (Erickson, 1986, p. 128). In this study, I explored the development and articulation of voice in teachers, future teachers, and myself as a teacher educator/researcher, through Edunet, an online unstructured mentoring community. I hoped with this research agenda, to provide a response to Michael Apple’s call to recognize and to realize the “connections between critical research and libratory pedagogy” (Lather, 1991, p. xi).

Apple suggests that we should explore “the possibilities and problems of creating teachers not as masters of truth and justice [but] more as creators of space where those involved can act and speak on their own behalf” (Lather, 1991, p. xi). Apple’s words point out the essence of critical research and critical pedagogy: a questioning of power in pedagogical practice, relationships, and institutions. I took up Apple’s call, and embraced libratory pedagogy, in the Freire (1993) tradition, as a creative, daring, critical, and reflexive pedagogy that transforms practitioners as they transform the world (Gadotti, 1996). In this libratory spirit, the Edunet listserv provided a space where educators and future educators could and did question power, did act and speak on their own behalf, and did transform themselves and their praxis. I will share examples of such transformations in the discussion section of this chapter in order to demonstrate the questioning, acting, and speaking that Edunet engendered. I trust that my research findings will help to explicate the connections between the critical research and the libratory pedagogy that I long to unleash throughout education and within our schools.

The specific type of interpretive action research utilized for this study is discourse analysis focused upon ethnography of communication (Tesch, 1990) and based in critical,
emancipatory, action research (Reinharz, 1992). Discourse analysis attempts to recognize patterns, rules or procedures and seeks to unlock the codes, meanings and constructed realities that have been embedded into communication and interactions (Thomsen, Straubhaar, & Bolyard, 1998). Jacob (1987) explains that a closely related analytical approach, ethnography of communication, focuses “on the patterns of social interaction among members of a cultural group” (p. 18). Erickson helps to further clarify the unique focus of ethnography of communication by pointing out how this analytical approach keeps in mind the “others in the scene” who constitute the actors’ “social ecology” (1986, p. 128). Erickson’s words crystallized my conviction that discourse analysis grounded in ethnography of communication provided an excellent toolkit with which to explore the development of voice in teachers and future teachers.

By definition, emancipatory action research is “a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, and the situations in which the practices are carried out” (Carr & Kemmis, 1986, p. 162). This definition highlights how emancipatory action research is an embodiment of the libratory pedagogy Apple (1979) calls for and Freire (1993) espouses. In order to honor Freire, whose work has inspired me tremendously, I have included libratory along with emancipatory as one of the intersecting and complementary research frameworks for this study.

As I explored the purposes, definitions, and intersections of the interpretive, critical, emancipatory (libratory), action research frameworks and the complementarity of discourse

---

3 Please return to the introductory paragraphs of this chapter for a detailed definition and explanation of my use of “action” research in this study.
analysis, based in ethnography of communication as an analytical approach, I realized that these intertwining frameworks and methodologies were excellent avenues by which to explore my initial research questions:

1. What kinds of communication and connections occur in an unstructured electronic mentoring list for future teachers and practicing educators?
2. How does an opportunity to engage in dialogue with other education students and educators out in the field help to encourage and/or develop voice?
3. How does participation in an electronic mentoring community affect my own practice?
4. How can the experience of this mentoring community inform and enhance teacher education and educational practices?

As my research progressed, I found that this interpretive, critical, emancipatory, action research agenda was not only an avenue for and the basis of my research, but also a stream that organically flowed from and through the central questions and processes of my research.⁴

The analysis aspect of the Edunet project focused on an entire corpus of documentary resources. These documentary resources included five years of postings to the Edunet listserv; information, postings and documents about the Edunet listserv; field notes from my participant-observation on Edunet; email member checks and clarification correspondence; and face-to-face and email peer debriefing sessions. After extensive emersion in the documentary resource data, I generated assertions through induction, and examined specific instances to discover and identify commonalities. As themes were subsumed under “recurring regularities” (Lincoln & Guba, 1985), I discarded or modified assertions as my analysis proceeded. As meanings emerged, I immersed myself in interpretive, critical, emancipatory, action research literature to explicate further my unfolding understandings.

⁴ As illustrated in Figure 3.1.
The intersections of these connections took me far beyond my initial research questions and conceptualizations. My thinking also soared beyond the safety nets that I had hoped to construct. Before explaining how my thinking transcended safety nets, and before taking flight into the realities woven through these intersections of connections, it is important first to talk about learning theory.

**Interpretive Frameworks: Following Connections to Their Radical Roots**

To get back to the roots of my interpretive, critical, emancipatory, action research agenda, I must dig into my discomfort with the world-view of teaching and learning under which I was educated. As a said before, I found the grounding assumptions behind the education that I received in school uncomfortable at best. Table 3.1, adapted from Jonassen, Peck & Wilson (1999), illustrates the pedagogic assumptions under which I was educated. I found these assumptions distressing and untenable.

<table>
<thead>
<tr>
<th><strong>Table 3.1</strong></th>
<th>“Traditional” Assumptions of Education (adapted from Jonassen, Peck &amp; Wilson, 1999)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td>Transmitted, external to knower, objective, stable, fixed, deconceptualized</td>
</tr>
<tr>
<td><strong>Reality (Truth)</strong></td>
<td>External to (separate from) the knower</td>
</tr>
<tr>
<td><strong>Objects and Events</strong></td>
<td>Reflect external world, have inherent meaning whether or not an individual is aware of these meanings</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>Knowledge transmission, reflecting what teacher knows, well-structured, abstract-symbolic, encoding-retention-retrieval, product “fact” oriented</td>
</tr>
<tr>
<td><strong>Instruction</strong></td>
<td>Task is to symbolically represent external knowledge (i.e., reality) so that the learner accurately acquires its meaning: simplify knowledge, abstract rules, basics first, top-down, deductive, application of symbols (rules, principles), lecturing, tutoring, instructor derived and controlled, individual, competitive</td>
</tr>
</tbody>
</table>
According to Duffy & Cunningham (1996), such traditional "objectivist assumptions" (Cronin, 1997; Driscoll, 1994; Duffy & Jonassen, 1992) about education evolved into a "mind as computer" metaphor in the 1970s and 1980s. The "mind as computer" metaphor sees cognitive processes as algorithmic in the same way as computer processes are algorithmic. In other words, the mind is conceptualized as processing abstract symbols according to algorithmic rules. Symbols thus derive their meaning from their capacity to match reality. Learning, from this point of view, is a process of information acquisition, information processing, and information storage for future use.

I found it distressing that the knowledge transmission model of teaching and learning with which I struggled when I was in school in the 1950s and 1960s remained alive and well in the 1990s with only a few technological twists. Sumara & Davis (1997) seem to share this concern with the modern "mind as computer" twist of the "traditional" knowledge transmission pedagogic assumptions.

Currently, cognitivism is the predominant theoretical framework for understanding human intelligence and its development. It is so pervasive, in fact, that its defining "mind as computer" metaphor tends to be used and taken literally. It is now part of common sense to speak of "inputting" and "storing" information, of "processing" and "retrieving" data, of "compiling" and "structuring" knowledge... Personal knowledge comes to be thought of in terms of some sort of internal representation of an outer, pre-given reality... representations of the world are digitally encoded in a neurological network (p. 407).

In the 1980s, Lakoff & Johnson (1980), Marshall (1988), and Gardner (1985) called for a careful examination of thinking and learning metaphors and conceptualizations. As I have gained physical and temporal distance from my painful early educational experiences, and have had the time to reflect on what teaching and learning mean to me, I have taken up the call to examine metaphors for understanding thinking and learning. Through this
examination, I have come to appreciate and embrace some potentially more radical, and I believe more facilitative, pedagogic metaphors and assumptions. The following epistemological premise provided rich soil in which to root my emerging understandings.

[W]e regard all learning as a social dialogical process of construction by distributed, multidimensional selves using tools and signs within contexts created by the various communities with which they interact...Our process of construction is directed toward creating a world that makes sense to us, one that is adequate for our everyday functioning (Duffy & Cunningham, 1996, p. 181-182).

Duffy and Cunningham ground their pedagogic assumptions in a “mind as rhizome” metaphor of thinking and learning.\(^5\) They explain this metaphor by recalling that a rhizome is a system of roots, stems, tubers and fibers, the tangle of which suggests a conception of thinking and learning where every point can connect with every and/or any other point. No points or positions are fixed; instead, there are dynamic and constantly changing connections and relationships. There is no hierarchy or super ordinate order, neither is there an inside or outside, only an open network that can be connected at each and every dimension. This characterization of the mind as a rhizome, intricately connected within a socio-cultural milieu, is a perfect articulation of my understanding of my own learning and meaning making, and an excellent model for my interpretive, critical, emancipatory, action research project. In fact, this rhizomeic, socio-culturally connected metaphor reminded me of Dewey’s ([1938] 1963) call to transform each school into a “social enterprise in which all individuals have an opportunity to contribute and to which all feel a responsibility” (p. 56).

With Dewey’s call for transformation in mind, I initially envisioned Edunet to be a rhizomeic, online, unstructured mentoring/learning community “safety net.” I drew my

\(^{5}\) The “mind as rhizome” metaphor was inspired by Umberto Eco (1984).
inspiration for this initial envisioning from the intersections of two important internal images that played in my mind. The first image came from my musings about trees. I thought about the roots extending deep within the earth for nourishment, grounding, and stability; the trunk, connecting the terrestrial with the celestial, providing support as well as a looped conduit for nourishment and growth; and the branches reaching high into the sky, taking in nourishment from the sun and the air and giving off other nutrients to the environment. The second image came from my urgent sense of the need for safety nets. I felt that safety nets were essential to catch students who might be dropping through the cracks of the educational system, to catch the future teachers, the practicing teachers that they would soon be joining, and the teacher educators that I worked with in higher education. My personal and professional experiences led me to believe that many individuals in each of these constituencies felt disconnected from or disaffected by education. I began to merge the tree and safety net images in my mind, and I came up with a combined image of a tree grounded by the rhizomeic connected roots providing nourishment and stability, the trunk providing support as well as an interactive conduit, and the branches providing anchoring for the safety nets that I hoped to construct. My plan then, was to construct an online, unstructured mentoring/learning community by weaving a strong supportive safety net environment that I would suspend from the outstretched tree branches that were connected to the rhizomeic, grounded tree roots and trunk. I planned to weave or spin this net by encouraging participants to take up the threads of thinking, relating, reflecting, sharing, and connecting to weave patterns which would hopefully provide safety nets for all of us. In actuality, Edunet turned out to be much, much more than the safety nets that I had originally envisioned. I will share the full story of everything that Edunet turned out to be in the discussion section of this chapter.
In the next section, I will share the rich data from Edunet, illustrating how the “mind as rhizome” metaphor was actualized by, and facilitated through and with online computer-mediated connections. Before sharing the Edunet story, it is important first to delve into constructivist and socio-cultural constructivist learning theories since these theories provide the epistemological scaffolding or framework for this research project.

Epistemology is a branch of philosophy that explores the nature of knowledge, reality, and truth. Epistemological beliefs are the hub around which instruction, teaching, and learning revolve (Duffy & Jonassen, 1992; Miller & Miller, 2000). “Epistemology informs learning and instruction theories” (Miller & Miller, 2000, p. 159). Because of differing epistemological beliefs about the nature of knowledge, reality, and truth, learning theories come at understandings of learning from various directions, often emphasizing different aspects of learning. The emphasis on different aspects of learning promotes complementarities between some theories, with each being useful for different purposes. Other theories, however, reflect fundamental differences in assumptions about the nature of knowledge, knowing, and knowers. Major differences in epistemological assumptions can produce tremendous disagreements about what is of primary importance, in other words, what matters, in learning and teaching. Because of the wide-ranging differences in epistemological assumptions, I feel that it is important to provide a brief description of major learning theories. I will focus in depth upon constructivist and socio-cultural constructivist theories, which express my assumptions about the nature of knowledge, knowing and knowers, placing these theories into context within a learning theory continuum. A brief description of major learning theories is essential to provide a foundation upon which to base my exploration of socio-cultural constructivist learning theory as an actualization of interpretive, critical, emancipatory, action research.
Table 3.2, synthesized from the work of Etienne Wenger (1998), provides an overview of major learning theories. This overview is important in order to understand the roots from which socio-cultural constructivist learning theory springs. Before delving into Table 3.2, it might be helpful to point out my sense of how socio-cultural constructivist learning theory offers hope for realizing Dewey’s call for transformation. Socio-cultural constructivism pulls together the best of constructivism’s hands-on engagement with the environment for meaning making, and a socio-cultural focus on learning as a social enterprise grounded in meaning making through active engagement affectively, intellectually culturally, and relationally. Anne Edwards (2001) describes this sense of socio-cultural constructivism when she says socio-cultural constructivist teaching is, “a relational orchestration of time and space, self and others, learners and knowledge, and affect and cognition” (p. 179).

I would now like to turn to Table 3.2 for an overview of learning theories, to map out the continuum of thought and assumptions about learning. While I do not share some of these notions about teaching and learning, I feel that it is important to map out the foci and assumptions of the range of learning theories so that it will be easy to see where my ideas converge with and diverge from the major theories. Following Table 3.2, I will explore the complexities, branches, and intersections of these major learning theory categorizations and explain how Duffy and Cunningham’s “mind as rhizome” metaphor and my understanding of learning are rooted within the connections between Wenger’s constructivist, activity, socialization, and organizational learning theories.

---

6 Behaviorism is a good example of a learning theory and a teaching method which does not suit my sense of how learning can best be facilitated.
Table 3.2. Brief Introduction to Learning Theories (adapted from Wenger, 1998)

<table>
<thead>
<tr>
<th>Theory</th>
<th>Focus</th>
<th>Citations</th>
</tr>
</thead>
</table>
| Neuro-physiological | • biological mechanisms of learning in conjunction with physiological limits and rhythms  
|                  | • promotes the stimulation and optimization of memory                  | Edelman (1993); Sylwester (1993)       |
| Behaviorist     | • adaptive response to “external reality”  
|                  | • promotes behavior modification  
|                  | • stimulus-response-reinforcement                                     | Skinner (1968; 1974)                   |
| Cognitive       | • internal cognitive structures  
|                  | • view learning as transformations in cognitive structures  
|                  | • promotes processing and transmission of information through communication, explanation, recombination, contrast, inference, problem solving | Anderson (1983); Hutchins (1995); Wenger (1987) |
| Constructivist  | • processes by which learners build their own mental structures when interacting with an environment  
|                  | • promotes task oriented, hands-on, self-directed activities oriented toward design and discovery  
|                  | • engagement in self-directed tasks is paramount                       | Piaget (1954); Papert (1980); Fosnot (1989) |
| Social Learning | • information processing mechanisms by which social interactions affect behavior (from a primarily psychological perspective)  
|                  | • promotes emphasis on interpersonal relations involving imitation and modeling | Bandura (1977)                          |
| Activity        | • structure of activities (historical state of activity with respect to developmental stage of learner)  
|                  | • promotes attention to and support around the “zone of proximal development”  
|                  | • providing scaffolding for learners so they can perform activities they would not be able to perform by themselves is paramount | Vygotsky (1934; 1978); Wertsch (1985); Engeström (1987) |
| Socialization   | • acquisition of membership by newcomers within a functionalist framework  
|                  | • acquiring membership is defined as acculturation to the ideas and practices of the “community”  
|                  | • promotes attention to social and cultural processes which facilitate acculturation within communities of practice | Parsons (1962); Driver, Asoko, Leach, Mortimer, & Scott (1994) |
| Organizational  | • organizational systems, organizational structures, organizational politics, institutional forms of memory  
|                  | • promotes attention to the ways individuals learn in organizational contexts AND ways in which organizations “learn” as organizations | Senge (1990); Brown & Duguid (1991); Hock (1995); Leonard-Barton (1995) |

As I mentioned earlier, a further look to the literature provides the term, “socio-cultural constructivist” learning theory (Duffy & Cunningham, 1996), that embodies what I see as the most promising connections between Wenger’s (1998) constructivist, activity,
socialization, and organizational learning theories. Table 3.3 illustrates socio-cultural constructivist assumptions about the nature of knowledge, knowing, and knowers.

Table 3.3. Socio-cultural Constructivist Assumptions (adapted from Duffy & Cunningham, 1996, p. 175)

<table>
<thead>
<tr>
<th>Socio-cultural Constructivists assume:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The mind is located:</strong></td>
</tr>
<tr>
<td>in the individual-in-social interaction</td>
</tr>
<tr>
<td><strong>Learning is a process of:</strong></td>
</tr>
<tr>
<td>constructive meaning making within a socio-cultural milieu</td>
</tr>
<tr>
<td><strong>Goal is to account for:</strong></td>
</tr>
<tr>
<td>constitution of social and cultural processes by actively interpreting individuals</td>
</tr>
<tr>
<td><strong>Theoretical attention is on:</strong></td>
</tr>
<tr>
<td>social and cultural processes as these processes facilitate and are facilitated by construction of meaning</td>
</tr>
<tr>
<td><strong>Analysis of learning sees learning as:</strong></td>
</tr>
<tr>
<td>meaning-making, growth in ways one participates in community, acculturation - implicitly assuming an actively constructing individual</td>
</tr>
<tr>
<td><strong>Focus of analyses:</strong></td>
</tr>
<tr>
<td>individual’s participation in culturally organized practices and interpersonal interactions</td>
</tr>
<tr>
<td><strong>In looking at a group we stress:</strong></td>
</tr>
<tr>
<td>analysis of social interaction among members of groups or communities, eschewing analyses of individual differences as objects of measurement</td>
</tr>
</tbody>
</table>

Please refer back to Table 3.2 to discover how the social, the cultural, and the constructivist aspects of Wenger’s constructivist, activity, socialization and organizational learning theories coalesce in the socio-cultural constructivist assumptions illustrated in Table 3.3. What I find most promising about socio-cultural constructivism is its social and cultural rather than individual and psychological focus coupled with its understanding of learning as the construction of meaning within a socio-cultural milieu.⁷

⁷ Since I find the individual and psychological foci of some learning theories to be the problematic aspects, I enthusiastically embrace socio-cultural constructivist theory. I feel that socio-cultural constructivist theory takes the best (the social, cultural contexts and the constructivist understandings) and leaves the rest. Another learning theory closely related to socio-cultural constructivist theory that I appreciate but cannot fully embrace is constructive-developmental pedagogy. I find constructive-developmental pedagogy’s emphasis on individual developmental, psychological frameworks problematic although I appreciate the constructive aspects.
Cognitive constructivists, according to Duffy and Cunningham (1996) and Cobb (1994), see learning as the process by which individuals construct themselves and their world, resolving conflicts by accommodating to experiences thus making sense of the world. I appreciate cognitive constructivist’s conceptualization of learning as a process of meaning construction. While I find their “constructive” assumptions much more comfortable than behaviorist’s explanation of learning as adaptation to “external reality” by stimulus-response-reinforcement, the method that I suffered from in my early schooling, I still find cognitive constructivist’s focus on individual psychological processes problematic. I do not believe that separating out and focusing on the individual psychological processes gives us the full picture of learning and meaning making. I feel that social and cultural contexts are vitally important as well. I thus embrace socio-cultural constructivism’s emphasis on the socially and culturally situated context of cognition in which, according to Rogoff (1994), “learning occurs as people participate in shared endeavors with others, with all playing active but often asymmetrical roles in socio-cultural activity”(209). I developed the Edunet action research project as a socio-cultural constructivistically grounded rhizomeic, online, unstructured mentoring/learning community where participation in dialogue and shared meaning making could facilitate learning.

While I embraced socio-cultural constructivism as the theoretical umbrella for the Edunet project, approaches and aspects of complementary constructivist methods informed this project as well. I found such instructional approaches as cognitive apprenticeship (Brown, Collins, & Duguid, 1989), situated learning (Lave, 1988), and legitimate peripheral participation (Lave & Wenger, 1990) weaving through the Edunet online community as it developed. Cognitive apprenticeship, situated learning, and legitimate peripheral
participation are built upon and revolve around: (1) authentic contexts, (2) access to experts, (3) collaborative construction of knowledge, and (4) coaching and scaffolding. Since these four aspects of cognitive apprenticeship, situated learning, and legitimate peripheral participation provided the cornerstones for the Edunet project, I will return to these instructional approaches later in the discussion section to further inform the data analysis.

Now that I have laid out the socio-cultural constructivist grounding of this action research project, the time has come to delve into the rich Edunet research data. Careful consideration of postings to Edunet will explicate the intersections of theory, practice, voices, and potential future visions.

**Connecting Voices, Visions, Research, and “Lifting as We Climb” to Transform SafetyNets into CyberLadders**

I suggested earlier that as this action research project progressed, I found that the Edunet listserv turned out to be much more than the safety net that I had hoped it would be for future teachers, their future students, practicing educators, and education professors. I will return to my original research questions, elaborated by the answers that I found through my research, to illustrate how I came to realize that the Edunet listserv was not only a SafetyNet but that it was indeed a CyberLadder that facilitated “Lifting as We Climb” for participants in the Edunet electronic community.

**Question One: What kinds of communication and connections occur in an unstructured electronic mentoring list for future teachers and practicing educators?**

---

8 Scaffolding is a supportive framework consciously and conscientiously constructed in order to facilitate or enhance learning. Scaffolding can include the support of other individuals, aspects of the environment that provide support, as well as cultural and historical contexts which others bring, or which are provided for support (Duffy & Cunningham, 1996).
Initially I logistically handled the qualitative analysis of the rich documentary and data resources of this project by printing out and making photocopies of the entire body of documentary resources as these resources were generated or became available. I then used color highlighters to visually code the data into categories according to themes (subjects) and functions (e.g. sharing information, asking questions, expressing opinion). My plan had been to cut up these highlighted copies, tape the units of analysis onto file cards that I could sort further as analysis proceeded. It became evident early on that I had to find a more efficient and ecological method of logistical management of analysis, as trees and time were being consumed at tremendous levels with the original analysis plan. Besides, my peer debriefer pointed out that there were not enough highlighter hues to designate unique colors for all of my themes and functions categories. Fortunately, I was able to purchase the qualitative research software NUD*IST™ and then upgrade to NVivo™ when the new NUD*IST™ upgrade software became available. This qualitative analysis software enabled me to carry out my research agenda without having to cut down on the number of categories that I was analyzing and without having to simplify the nuances of analysis that I have hoped to employ.

Table 2.1 in the second chapter of this dissertation enumerated the categories of “functions” that posts to Edunet served. As I explained in the second chapter, I coded each post under as many different functional categories as were applicable. Categories were not mutually exclusive.9 Perusal of the categorical “functions” of posts provides a place to begin in answering my first question about the kinds of communications that occurred on this

9 Please see Table 2.1 in the second chapter for a full listing of the categorical functions of Edunet posts.
unstructured electronic mentoring listserv. Functions that are of particular interest in determining the kinds of communication that occurred on Edunet include the functions of:

- Sharing information
- Sharing experience
- Reflecting on personal experience (as it relates to subject or topic)
- Reflecting on other's experience (as it relates to personal experience or a specific topic)
- Asking for information, opinions, or specific details on "what it is like" or "what is really happening" out in the schools
- Discussing "what happened in class" as an example of a specific topic or issue
- Sharing "research" and pointing out how this research relates to specific topics, subjects or issues
- Engaging in debate over matters of "fact"
- Engaging in debate over opinions or feelings
- Posing questions or scenarios to stimulate thought
- Relating "Academic" issues (what is being taught in classes) to "Professional" issues (the REAL WORLD)

Dialogue is at the center of socio-constructivist theory. Ira Shor (1992) describes dialogue as "a capacity and inclination of human beings to reflect together on the meaning of their experience and their knowledge" (p. 86). The "functions" above are the epitome of Shor's description of a socio-constructivist learning environment. Asking, sharing, discussing, debating, relating, and reflecting were daily occurrences on Edunet. Each one of these higher order dialogic "functional" categories logged over five thousand coding instances in the final Edunet analysis. Of perhaps even greater import than the high numbers of coding instances for these categories is the fact that each student in each of the classes for which I required postings to Edunet posted at least one message coded under one of these categories. In my years of teaching before the creation of Edunet, I had never managed to engage every student in higher order discourse and dialogue. The Edunet listserv provided the environment, scaffolding, and community for such communication to flourish. My study
of Edunet gave me the opportunity to recognize and to rejoice in the higher order discourse that this unstructured mentoring listserv facilitated. To delve into the discourse, I will now turn to the primary data, the Edunet postings, to investigate further the kinds of communication that occurred, and to explore the connections forged on Edunet.

The following post illustrates how Edunet indeed met both of the initial founding goals of the project: to use technology to facilitate connections for future educators and practicing educators; and to help teacher education students realize that what we were discussing and learning in class had direct application to the “real world” of education. The original poster of this first message below is a student in an Introduction to Education course posting about a question from another course that she was taking – not the Intro course for which she had subscribed to Edunet. The response is from a school psychologist in a state across the USA from the location of the posting student.

************************************************************
Hello! My question of the day to all of my (hopefully) future colleagues is: have you ever, and how often, used z-scores when assessing a student’s performance? I’m just wondering because we’ve been talking about it this week in my educational psych class and it’s a little confusing to me. I better learn it quick, though, because we’re getting tested on it tomorrow!! Dr. ____ says that to find the z-score, you subtract the class average (on a test) from the student’s raw score and then divide it by the standard deviation. Is this right, my fellow ed psychers? I hope so, that’s how I’m memorizing it!
************************************************************

You are exactly right. A z-score is one type of standard score with a mean of 0 and a standard deviation of 1. A standard score (if you’re
interested) is a way of transforming each person's score into a scale with a known mean and standard deviation, thus allowing for reasonable comparisons to be made. To tell you the truth, I have no clue if many classroom teachers use standard score comparisons in determining student grades. Were I a classroom teacher instead of a number-bound school psychologist, I would be more interested in ascertaining if the student had mastered the concept I felt essential in the lesson/chapter, as opposed to knowing his/her standard score on a given test.

************************************************************

Without Edunet it is unlikely that this education student in the Midwest USA and this school psychologist from a Mid-Atlantic state ever would have had the opportunity to discuss z-scores or to carry on a dialogue about education and educational issues. Each day that classes were in session, one or more posting such as this referring to or asking questions about what students were learning in their classes appeared on Edunet. The connections that grew out of these postings, for this particular student and educator and for all of the other students and educators on Edunet, provided invaluable opportunities for educators and future educators to communicate and to engage in dialogue about learning and teaching. “In a very important sense, education is dialogue” (Wells & Wells, 1992, p. 32). Dialogue about education, among teacher education students, teacher educators, practicing educators in the field, and friends and families of participants, flourished on Edunet. The preceding post and response is but one example of such dialogue.

Of importance in considering my first research question about communication and connections is the fact that this z-score discussion, as was typical of such discussions that arose over items or issues that came up in students’ classes, did not end with the first
response. The z-score discussion and related threads about standardized scores and statistical measurement continued for over a month. Edunet students picked up on the school psychologist's suggestion that concern over student mastery of concepts was perhaps of more importance for classroom teachers than standard scores on a certain test. The Edunet students quickly asked, if this was true, then why they should bother learning to calculate z-scores. An engaging discussion, and at times debate ensued over the uses and value of standardized measures, what teachers should be measuring or assessing, how to best measure and assess learning, and indeed what constituted "learning" anyway. Feedback from students at the conclusion of the z-score discussion included the following illuminating comments:

- I didn't realize that annoying little details like z-scores had anything to do with actually being a teacher!

- I thought that most of this stuff we were supposed to be learning in class really had nothing to do with REAL LIFE and what I needed to know and do as a teacher. Hearing real teachers and school psychologists and administrators talk about this stuff helped me realize that I really do need to know it.

- I was amazed that different teachers and administrators, etc. had different ideas about important issues like standardized measures and standardized testing and assessment. I see now how important it is to do in-depth research for our group presentation. We'll need to know about all of this when we get out in the schools.

Before Edunet, in my own teaching experience, I had been hard pressed to find ways to open up meaningful dialogue about the importance and "real world" applications of issues and topics that we were studying in the classes I taught. The postings and feedback above, which are typical examples to represent the volumes of similar data and evidence, point out how Edunet created a virtual space and time for meaningful dialogue and facilitated
communication and discussion between and among teacher education students, teacher educators, practicing educators, and others interested in education the world over.

It is important to note that specific questions and issues from classes, of which the above z-score post is an example, represented only ten percent of the specifically academically focused postings to Edunet. Another 25 percent of the specifically academically focused postings revolved around major, general questions about education, and the future of education. Many of these major education question posts and discussions wove together strands and threads from the global to the local and from the political to the personal. The following response, interspersed with the original post which is preceded by carets [ >], provides a typical example of one such common “future of education and what this means to each of us personally and professionally” theme on Edunet.

******************************************************************

You wrote:

> In our classes we are always being warned
> about having to defend why music should be
> offered during the school day. At the
> school I went to band and choir were both
> offered during the school day for credit.
> Is this unusual? How is it set up in other
> schools?

This is not unusual. I am a former band and chorus teacher, and these classes were always offered for credit during the school day.

> Will I need to defend my program a lot?
> What are some of the defenses that have
> worked?

As more and more sectors call for accountability in schools, especially for teaching basic literacy to students, I imagine you will have to do your share of justifying the music program. In
schools where the band and the chorus are merely performance classes, preparing for one concert or contest after another, I cannot think of any justification for inclusion in the school day. Those types of music classes are analogous to the football or basketball program—they cater to the few who elect the performance class, the learning is narrowly limited to putting finishing touches on a few pieces of music, and little else is accomplished.

What defenses work? Certainly not the "old" defenses of promoting citizenship, or the like. The only defensible position is that students LEARN something in these classes that they don't get anywhere else:

- They should be learning about the sensory, formal and technical elements of music;
- They should be learning about the expressive qualities of music;
- They should be learning about the major periods and personalities of the past and how music reflects the culture of the time;
- They should be learning how to participate in music activities—either as performers or consumers;
- They should be learning how music shares aesthetic elements in common with the other fine arts.

The band and chorus teachers in my district are in the process of developing a four-year revolving curriculum to address these issues. Once implemented, the students who elect a four-year participation in band or chorus at the high school level will leave having completed four-years of coursework in the fine art of music. This is, of course, one person's opinion!

************************************************************

While the above reply was only "one person's opinion," this one opinion, shared with the Edunet community, provided an entire semester of dialogue, discussion, debate, and reflection. Conversations woven from the threads of this post included discussions on
accountability, course or program objectives, the place of arts and sports in our schools, the purpose of schools, and the parts each of us would be called to play as education moved into the 21st century. To emphasize the point I made earlier, *this discussion could not have happened in one of my face-to-face classes devoid of the Edunet listserv enhancement.* In face-to-face only classes, experts, such as the former music teacher cum District Curriculum and Technology Director, whose reply launched this meaningful dialogue, would not be available to respond to individual questions, concerns, and reflections of each student. I was fortunate, with the Edunet project, to have many outstanding educators from around the world willing to share their experience, expertise, ideas, opinions, and to engage in meaning making with the students that I was teaching. I consider such dialogue exponentially powerful because, according to Baxter Magolda (1999), a constructive-developmentalist who also raises her voice for socio-cultural constructivism, “Pedagogy must be an interdependent relationship between teacher and students to engage the students’ way of making meaning in the context of the course goals” (p. 209). Edunet facilitated such interdependent relationships and connections between all of the students, teachers, teacher educators, administrators and others subscribed to the listserv. As the posts above begin to demonstrate, students were able to learn and rebuild their worlds in the best sense of socio-cultural constructivism through connections, reflections, and meaningful dialogue with others on Edunet. To further demonstrate how Edunet provided an actualization of socio-cultural constructivist learning theory we now will explore my second research question.

*Question Two: How does an opportunity to engage in dialogue with other education students and educators out in the field help to encourage and/or develop voice?*
The development of voice is another central component of socio-constructivist learning theory. Winter (1998) points out the importance of the development of voice, not only individually, but in concert with others.

If thinking is crucially a matter of finding an individual voice it is also about understanding oneself in relation to the cultural traditions within which one finds oneself; it involves, therefore, thinking in dialogue with others. Other people’s thinking, based on their experience, is a key resource in enabling us to think creatively about our own, to think critically about the thoughts we started with in order to construct a new cognitive space, into which we might, provisionally, decide to move (p. 67).

As I illustrated with the previous posts, Edunet created a space to think in dialogue with others, providing the key resource of other people’s thinking, thus enabling participants to think creatively about their own thinking. Robert Grudin (1990) tells us, “To learn is not merely to accumulate data; it is to rebuild one’s world” (p. 152). The rebuilding of worlds was facilitated on Edunet through following Baxter Magolda’s (1999) suggestion that, “Connecting to students’ experience and using it as the foundation for learning encourages students to rebuild their worlds because the learning experience is meaningful to them” (p. 209). The post asking about z-scores in preparation for an upcoming test, which ended up in an ongoing discussion about much more than z-scores, and the post about defending one’s discipline, which evolved into a discussion of goals and objectives for courses and the meaning of education, are examples of how Edunet enabled and encouraged students to share their experience. Students’ experience, in this manner, provided the foundation for learning and the rebuilding of their worlds.

Posts on Edunet were not limited to students and other participants bringing up topics, individual issues, or asking isolated questions. According to Cooper (1991) “telling our own
stories is a way to impose form upon our often chaotic experiences and, in the process, to develop our own voice” (p. 97). Edunet provided an environment where students did tell their own stories, and I submit, did develop their own voice. Richard Hopkins (1994), certainly a proponent of socio-cultural constructivist principles, would agree, I conjecture, as he suggests:

[N]arrative might provide a cohesive, even protogenic, operating principle for tying lived experience into subject matter in the schools. Narrative is a deeply human, linguistic process, a kind of primal development impulse. We are storytelling creatures. We do not just tell stories; we live them, defining ourselves through them. Our narratives are the expressive, temporal medium through which we construct our functioning personae and give meaning to our experience (p. xvi).

Sociologist Laurel Richardson (2001) also points out the importance of writing stories, narratives, to understand ourselves and the world:

Writing as a method of inquiry is a way of nurturing our own individuality and giving us authority over our understanding of our own lives … What you write about and how you write it shapes your life, shapes who you become … Language constructs one’s sense of who one is, one’s subjectivity. What something means to individuals is dependent on the discourses available to them … As you write, you can find yourself connected to others; the meaning you construct about your life connects you to others, making communion – community – possible (p. 35-37).

Personal narratives accounted for approximately 30 percent of the postings to Edunet. As stated before, coding categories are not mutually exclusive, so a post could potentially be coded in a number of categories at the same time, e.g. as a personal narrative, a specifically academically focused post, and a relating of academic issues to the “real world” post. In face-to-face only classrooms, I was not as successful at creating an atmosphere and carving out the time for sharing of personal narratives that could tie lived experience into the subject matter of the course. With Edunet, however, such sharing seemed to grow organically as the
listserv community developed. The following post is but one example of the Edunet messages in which students are sharing their personal stories, developing their voice, and connecting their experience to the subject matter of the course.

************************************************************
I would like to add to this debate but bring the discussion to a slightly different topic. That is, if a teacher is not grading on the ability of the student, then is that teacher being professional in his field? To explain why this is important, I will have to tell you about my Thanksgiving vacation. My father got a cold. Nothing big, but dad was sick. This was Monday. Tuesday dad had a pain across his shoulders that was bothering him so he went to the doctor. He was hassled about not waiting to see his own doctor, (his doctor wasn't on call) but finally got in. At the doctors he complained of his pain across his back, his upset stomach and how he believed it to be his heart...a pain so bad that he told the doctor it made him cry. The next day dad stayed home from work to rest for the holidays. That was Wednesday. Two hours and forty-five minutes into Thanksgiving my brother and I were giving my father CPR on his bedroom floor.

My father passed away on Thanksgiving, one day after seeing the doctor. The point of this being that the doctor told my father that his pain wasn't related to his heart so refused to check him for his heart. The doctor did feel it right in his judgment to give dad pain relievers to ease the tremendous pain. If this doctor would have been more of a professional he could have caught the heart attack and responded appropriately (according to the autopsy).

To relate this to education, is this point of professionalism. Many of us are in college right now to become professional educators. All semester we talked about how close should we get to the student and we have talked about "weed out" courses some of us are suffering through
right now. My point is that even though if you don't teach a kid well, he/she will live. But unlike my dad's doctor, we, as teachers, should be willing to think more of our profession. We should be developing our professional skills and thinking about major issues in education rather than worrying about getting too close to students, or worrying about whether or not year around schooling would mess up our summer vacation plans. The main point is that when you chose your profession do it because you love to do it not because of the money, benefits, vacations.

No, the child won't die, but you are keeping them back from their potential if you don't care, and it's that caring that is just as important as the subject you teach.

******************************************************************************

At the end of the semester of this posting, the student who shared this poignant and highly personal story thanked me for Edunet and for the assignment requiring posting to the listserv. He said that he never would have been able to share the story of his father's death in a regular face-to-face only class, and he stressed that sharing this story and relating it to teaching and education was the most important thing that had ever happened for him in his fourteen plus years of schooling. Of further import, although this particular student posted prolifically to the Edunet listserv, in class he spoke only when he was required to speak.

This one posting alone would have been enough to convince me that an unstructured mentoring listserv fostering dialogue between future teachers, practicing educators, and anyone interested in education encouraged the development of voice. As I previously mentioned, however, this post was not an isolated incident, nor was it atypical. Nearly 30 percent of all posts to Edunet shared personal narratives. These posts and the dialogue that
sprang up around them provided fertile ground for students to tie their lived experience to the subject matter and issues under discussion. Student voice was indeed encouraged and developed. Therefore, the research analysis suggests positive results on the second question. However, what does the research articulate about my own voice, as a participant-observer action researcher? This brings us around to my third research question.

**Question Three: How does participation in an electronic mentoring community affect my own practice?**

A shocking realization exploded into my consciousness early on when I began requiring Edunet posts from students in the courses that I taught. I had never realized that what I thought I had said in class, and what I thought had happened in class was not necessarily what students had heard or what they had experienced or perceived. Occasionally, in a face-to-face class, I would realize that not all students had heard or understood a concept or point from class when, in an exam or final paper or presentation this concept or point was expressed incorrectly, incompletely, or, even worse, in incredibly mangled form. Usually, at that point, it was too late to do anything to address the misunderstanding because we were so far beyond that point in the course, or the semester had actually ended. With the Edunet listserv, however, I found that I would receive immediate feedback from the students, on what they thought that they had heard, and what they thought had happened in class.

To my chagrin, and at times intense embarrassment, students posted statements that I had allegedly made in class, or events that had allegedly occurred in class. Since Edunet regularly boasted over 500 subscribers from counties around the world, the happenings in my classroom were now springing from behind my classroom door into email boxes across the
globe. The inner workings of my classroom became daily digital reports to the world. Such exposure was initially shocking for me. Upon reflection, this exposure turned out to be the best formative assessment tool I possessed for obtaining immediate feedback on students’ meaning making and understandings so that I could adjust my methods and address misperceptions or misunderstandings while the class and I were still in a teachable moment.

An example that I had given in class about how ideas and beliefs can change dramatically over time prompted an episode that provides an illustration of how Edunet informed and affected my own practice. In class, I had said something to the effect of, “I was actually a Young Republican when I was in high school, and I organized our school campaign for Nixon, if you can believe that!” I did not mean this comment as a slam against Republicans, nor even against Nixon. I merely meant it as a demonstration of how far one’s ideas and beliefs could swing over time, as I thought that the students understood that I was currently quite a liberal as evidenced by my stances on educational ideas and issues we discussed in class and on Edunet. In fact, students had commented on and joked about my liberal tendencies, so I did not think that what I said would have come as a surprise to anyone, nor did I think that the comment would feel demeaning to anyone. I was wrong. The following post, which immediately appeared on Edunet after I made the above statement, was particularly painful to me, but also quite a learning experience. This post helped me realize that the words and examples that I used in class were very powerful, and even if I had not intended the words or examples in a derogatory or belittling manner, that did not mean that students were not hearing my words as derogatory, belittling or demeaning.
In our secondary education class we were talking about our high school experiences when all of a sudden there were comments made that gave me the feeling that anyone must be very stupid if they supported the Republican Party. Lots of people laughed and thought it was the funniest thing. I wasn't laughing. In fact it pissed me off at first, but later it served as a very valuable lesson to me that teachers should not be trying to influence students by standing on their soap box to push their views on issues. Just because teachers have students as audience doesn't give them the right to bash others that don't have the "right" opinion. I find this type of action very unprofessional and it has no place in the classroom. What have I been hearing all my college career? To accept and to have an open mind with everyone. Well, I say practice what you preach.

If you slam Republicans and in the next breath say that we should accept some other idea or group, that is plain and simply a glaring contradiction.

So, what is my point? My point is the fact that we as educators can wrongfully influence students. There may be obvious differences as to how we act, talk or dress, but that is totally different than point blank getting in someone's face and saying that it was inconceivable to support Richard Nixon over JFK. If a student asks for your opinion I wouldn't care about that as long as it didn't turn into mud slinging the other views.

So, what's your opinion?

This student's post provided a "very valuable lesson" for me personally which I am sure I would not have had the opportunity to receive were it not for the Edunet listserv. For a student to have the motivation, opportunity, and the forum in a face-to-face class to confront
an instructor about allegedly “point blank getting in someone’s face” and “bash[ing] others that don’t have the ‘right’ opinion” would be highly unlikely. It would be even more unlikely for such a confrontation, if it did occur, to become a reflective learning experience for the student and the instructor. The Edunet listserv provided opportunity, the forum, and an atmosphere that facilitated reflective dialogue and productive “confrontation” from which all of us could learn.

In the aftermath of this incident I found solace in Eisner’s (1997) suggestion that human feelings and reactions, negative and positive, aid rather than pollute understanding. I did personally apologize to this student for my words and my example. I thanked him for his posting, which helped me to identify an aspect of my teaching that I needed to improve upon. The entire listserv also benefited from an enlightening discussion on thinking carefully about what we say in the classroom, and on being careful so that we do not inadvertently state something in a manner that implies that “our viewpoint” is the right one. A number of students, from the face-to-face class where this incident occurred as well as others who were not in that face-to-face class but participated in the Edunet discussion, told me that this discussion was a turning point in their understanding of how important their words in the classroom could be. I know that this post and this incident have had a monumental lasting impact on my own practice.

Other ways that participation in and study of Edunet have influenced my practice have not affected me as viscerally as the so-called “Republican-bashing” incident. Again, bashing was not my intent, but I learned from this incident that meaning is in the eyes and ears of the receiver. The immediacy of feedback and responses from students, and the volume of meaningful dialogue and reflection about course concepts, issues, and ideas,
certainly provided me with opportunities to identify and clear up misperceptions and inaccuracies in students' understandings as these misperceptions and inaccuracies appeared on Edunet. Such feedback also helped me to reconfigure lessons and activities so that such misperceptions and inaccuracies were less likely to occur the next time I taught that concept, idea, or issue.

Confusion over magnet schools and micro-society schools provides one good example of how immediate feedback from students helped me to address misperceptions about course content and issues. I showed a video in the Intro to Education class. This video featured a magnet school that operated under a micro-society format. Perhaps because these two terms applied to the featured school, some students seemed to be erroneously interchanging the terms. Postings to Edunet the day that I showed the video made it clear that these two terms needed clarification, so I posted a message to Edunet outlining and explaining the differences. This clarifying post also gave me the opportunity to provide more resources on both magnet schools and micro-society schools, and a discussion arose around each of these topics. In my face-to-face courses before Edunet, if students missed the day that we watched this video, they might totally miss any discussion of magnet schools and micro-society schools. Because of the opportunity and environment for dialogue provided by the listserv, magnet and micro-society schools continued to be topics on Edunet for weeks after the original and clarifying posts. And, the next time that I showed the video, I made sure to point out, before and after the video, the definitions of magnet schools and micro-society schools. I also explained, in detail, that this video was about a magnet school with a micro-society format as the attracting focus.
Edunet, as demonstrated with the above magnet and micro-society school example, provided an immediate formative feedback loop enhancing my ability to identify students' confusion or misconceptions and to address any potential misunderstandings while the topic was fresh in our minds. Often, as in the magnet and micro-society example, such dialogue and discussion also gave educators in the field the opportunity to talk about and learn more about topics and issues that may not come up in their own school or community. Such figurative CyberLadders up, over classroom walls, and into digital dialogue online informed and enhanced my own practice as well as the practice of the educators and future educators who participated in Edunet. Delving into my fourth research question will further explicate this point.

**Question Four: How can the experience of this mentoring community inform and enhance teacher education and educational practices?**

To begin to answer this fourth question, I would like to reflect upon a major issue facing twenty-first century educators. This issue is technology, and the use or misuse of technologies for teaching and learning. Because the Edunet listserv utilized computer-mediated communication technologies, it is important to consider how these technological aspects, as well as other aspects of the mentoring community inform and/or enhance teacher education and educational practices. To bring the technology question into focus, I will draw upon Snyder's (2001) exhortations concerning technology and pedagogy in the twenty-first century.

Education is at a critical crossroads. Teachers have within their power the opportunity to shift their own and their students' beliefs and understandings about technologies - about their place in education as well as their wider cultural importance ... At the beginning of the twenty-first century, to ignore the cultural and educational significance of technologies...
is shortsighted. As the new communication and information technologies are used more and more widely, teachers need to think critically about their use and provide their students with the skills to do likewise (Snyder, 2001, p. 43).

As if in answer to Snyder's challenge, the Edunet listserv not only provided educators and education students with the opportunity to use technology, but also with a forum in which to develop skills to think critically about technology, teaching, and learning. The following quotes highlight how the Edunet electronic mentoring community facilitated dialogue that informed and enhanced the practice of the educators and future educators who participated.

In this class we have used our email accounts extensively. In my high school, we didn't have any email, in fact I didn't even know about it until my junior year when one of friends in college told me about it. I think using email in high schools would help the students to become introduced to computers and widen their knowledge by hearing from other people outside of their school.

I agree that using email in high school classes is a good idea. I think that email could be very useful at any age. Think of the group projects and study issues that could be discussed when students cannot always get to one central location. There are many broad issues beyond the classroom that email and the internet could facilitate. Teachers could also participate in discussions and clarify issues so that students have feedback “during” the project rather than all of the feedback coming after the project. Computers will become more a part of our daily lives as the technology expands and becomes less expensive. Students who know how to use computers, how to be productive with them, and how to find resources with them will have an
advantage over others. We are lucky to have a head start on all of this because of Edunet!

Edunet provided much more than merely a technological connection, however. Edunet provided a facilitative and supportive environment for the dialogue essential for socio-cultural constructivist meaning making. According to Sumara & Davis (1997):

In order to understand processes of learning (that is, human cognition), then, the commonsense divisions that tend to be drawn between one individual and another and between human subjects and the world must be troubled ... we are continually participating in a process of interpretation ... any understanding (remembered, lived or projected) is in a continual process of being re-interpreted (p. 412-413).

Just such a troubling of learning, and dialogue about how to enhance educational practice took place continuously on Edunet. The following post and reply provide one example of Edunet's educationally enhancing conversations.

> Ask any student what they learned today and 90% of them will say "nothing." Ask them what happened at school today and you might get the same answer but much more often you will hear about a fight, or something that happened in or out of class that really had little to do with learning.

Do you suppose that this is because, when asked what they learned in school today, students interpret the question to be "What did you learn in school today that relates to your life?" And do you suppose that the reason we often hear "Nothing" as an answer is that we don't teach in a way that encourages "real life" connections?
One of my biggest contentions is that a "good" teacher is one who answers the question "Why do we have to learn this?" before it is ever asked!

And ... the reason students can answer the "what happened at school" question much more readily is that they answer from an experiential base. If learning were more active and experiential, perhaps students would be able to answer the "What did you learn today" question just as easily.

********************************************

Thoughtful epistemological dialogues like the one above, which happened at the minimum weekly, and often occurred daily on Edunet, demonstrate the rhizomeic rooting of this electronic mentoring community in socio-cultural constructivist theory. I consider these dialogues rhizomeic because of the way that dynamic and constantly changing connections and relationships flow from and through the Edunet posts. Such conversations pondering learning and the potential enhancement of learning through active experiential activities in classrooms demonstrate how Edunet facilitated socio-cultural constructivist conversation and meaning making. Drawing again on Sumara & Davis (1997):

Teaching is understood to occur in the relations between the individual and the collective, between accepted truth and emerging sense, and between actualities and possibilities ... therefore, what is imagined, what is fantasized, what is guessed at, what is intuited, are not marginalized to the fringes of valued thought and resulting actions, but are understood as vitally contributing to the conscious experience of everyday life (p. 417).

The relationships between accepted truth and emerging sense and between actualities and possibilities were explored and interrogated constantly on Edunet. Such exploration and interrogation is the essence of the meaning making at the core of socio-cultural constructivist theory. Wenger (1998) calls educators to find inventive ways of
engaging students in meaningful practices, of providing access to resources that enhance their participation, of opening their horizons so they can put themselves on learning trajectories they can identify with, and of involving them in actions, discussions, and reflections that make a difference to the communities that they value (p. 10).

The Edunet research informs and enhances teacher education and educational practices by demonstrating promising socio-cultural constructivistically informed methods of engaging students in meaningful practices, actions, discussions, and reflections that make a difference to the teaching, learning, and education community. The following section will highlight the intersections of learning theory literature and the Edunet research data and analysis, providing an enumeration of the major findings of this interpretive, critical, emancipatory, action research project.

Revelations of the Research

As I intimated earlier, cognitive apprenticeship, situated learning, and legitimate peripheral participation are instructional approaches closely tied to socio-cultural constructivist learning. The Edunet research findings support, expand upon, and clearly articulate Ron Oliver and Jan Herrington’s (2000) research into the critical elements of cognitive apprenticeship and situated learning. Since cognitive apprenticeship and situated learning exemplify and compliment socio-cultural constructivist theory, I will use Oliver and Herrington’s (2000) following list of critical elements as a framework within which to reflect, from yet another vantage point, on the capsulated Edunet research findings.

1. Authentic contexts
2. Authentic activities
3. Access to expert performances and the modeling of processes
4. Multiple roles and perspectives
5. Collaborative construction of knowledge
6. Reflection to enable abstractions to be formed
7. Articulation to enable tacit knowledge to be made explicit
8. Coaching and scaffolding by the teacher at critical times
9. Authentic assessment of learning within the tasks

(p. 180-182)

Authentic contexts

Socio-cultural constructivist learning theory, and the instructional approaches of
cognitive apprenticeship, situated learning, and legitimate peripheral participation, all call for
authentic learning environments that reflect the ways in which knowledge and learning
outcomes will be used in real-life settings beyond the classroom or learning environment.
Edunet provided such authentic contexts where teacher education students, practicing
teachers, administrators and teacher-educators could problematize, problem-solve, theorize,
discuss, and reflect upon the real-life issues facing them. Recall the z-score question that
evolved into a dialogue over standard scores, outcomes based learning, objectives, standards
and the meaning of education. Also, recall the ongoing discussion about defending music and
sports and the arts as academics fields worthy of inclusion in schools. These posts
demonstrate the actualization of authentic contexts that the Edunet listserv facilitated.

Authentic activities

Real-world relevance is the key to authentic activities as well as authentic contexts.
Such relevance was facilitated on the Edunet listserv through the unstructured, rather than
prescriptive nature of the listserv and the posting assignment.\(^{10}\) The unstructured nature of
the listserv can be demonstrated with this excerpt from the “Welcome to Edunet” sent to all
subscribers:

\(^{10}\) Unstructured rather than prescriptive activities are hailed as most conducive for authenticity (Brown et al.,
A major purpose of Edunet is to facilitate open discussion on educational topics and issues, so anything to do with education is fair game here. Our hope is that Edunet will connect and help foster communication and collaboration among educators and future educators. The connections we build on Edunet could help us weave the threads of theory and practice into an empowering and luxurious tapestry that will enrich all of our lives.

Originally, to get the discussion going, I asked a couple of questions that I think about constantly as I strive to do the best job I can of preparing pre-service teachers for their future. The first was for those who are or who have been out teaching. The second is for those who haven’t had a great deal of teaching experience yet.

1. What are some of your biggest challenges as you work in education ... and what could your teacher education and preparation program have done to help you meet these challenges?

2. What are your biggest fears or concerns about what it is “really” like out there in the classroom ... and, do you have any ideas about what your teacher education and preparation program can do to help you address these concerns?

You certainly don’t need to answer these questions, these were just potential discussion starters. If you have other questions or issues that you’d like to discuss with other educators, please bring these up. That is what this listserv is all about. The discussion you are hoping for might not happen unless you bring it up.

The unstructured complexity of this Edunet posting assignment provided opportunities for teacher education students and educators alike to engage in authentic activities that cut across and integrated subject areas and the curriculum.
Access to expert performances and the modeling of processes

"Scaffolding with others, both experts and fellow learners, provides the foundation for learning" (Miller & Miller, 2000, p. 169). Such scaffolding was the organic root of the Edunet rhizomeic online mentoring community. In real-life settings learners often learn through interactions with others who have more experience, through experts. All too often teacher education students have to wait until the final semester of their program, during their student teaching, to experience such real-world expert performances, modeling, and scaffolding. Edunet provided a way electronically to load this access to experts into the front end of the teacher education program instead of the tail end. The conversations on accountability, course or program objectives, the place of arts and sports in our schools, the purpose of schools, and the parts each of us would be called to play as education moved into the 21st century are excellent examples of how access to experts around the world enhanced the learning and meaning making of all Edunet participants. If it were not for Edunet, the students in the classes that I taught would never have had such access to these expert teachers, educators and administrators the world over.

Multiple roles and perspectives

Socio-cultural constructivist theory honors the depth of knowledge and understanding that is gained from exposure to different perspectives and different representations of the subject material. Edunet provided a rich and vibrant atmosphere in which participants voiced different perspectives and different representations of reality on an ongoing basis. Often the education students on Edunet would take on the role of “expert” as they shared their research into a particular idea or issue that other educators on Edunet knew little about. Hot topics
which generated and facilitated the airing of differing perspectives and representations each and every semester included: sex education, multicultural education, home schooling, standards, religion and schools, discipline, special education and inclusion, creationism vs. evolution, competition vs. cooperation, grades and grading to name but a few. In a face-to-face class without an online listserv component, students might have access only to the perspectives of the instructional materials for the class, the instructor, and the students who were physically in the classroom with them. The students and educators of Edunet had a direct line to hundreds of perspectives from the world over to consider and to reflect upon when making meaning of important educational topics and issues.

**Collaborative construction of knowledge**

As its name implies, collaborative rather than individual construction of knowledge is the bedrock of socio-cultural constructivist learning. “Contextual knowing involve[s] constructing one’s perspective in the context of one’s experience, available information, and the experiences of others” (Baxter Magolda, 1999, p. 51). The Edunet data suggests that an online unstructured mentoring community is an excellent environment for collaborative construction of knowledge. The posting commenting on the value of email for connecting with others outside of one’s school, and expanded upon with the reply brainstorming ideas about how email could enhance teaching and learning is one good example of such collaborative construction of knowledge.

**Reflection to enable abstractions to be formed**

One of the most exciting aspects of Edunet for me was the deep and meaningful reflection facilitated in this online mentoring community. As I have shared previously,
Edunet provided an environment that encouraged thinking in dialogue with others, which in turn facilitated rich reflection and elaborated meaning making. In face-to-face only classrooms, I found it difficult to impossible to provide an atmosphere, time, space, and environment where meaningful reflection was a given instead of an exception. The Edunet online mentoring community provided a 24-hour, 7-day per week forum where students, teachers, novices, experts, and others interested in education could reflect on issues and ideas and deliberate on both their learning and their learning processes. Of course, it is important to realize that this 24-hour per day, 7-day per week access must be planned for and considered so that this anytime anywhere learning doesn’t require 24-hour per day attention from the teacher!

Socio-cultural constructivists consider it best practice to provide learners with the opportunity to reflect on their own learning by comparing themselves with experts and other learners in varying stages of accomplishment. Edunet surpassed my wildest dreams of facilitating such meaningful reflection. The depth, breadth, and volume of novices and experts from around the world to join the reflection and meaning making would not have been possible without the electronic connections of the internet. The conversation about why students say they learned “nothing” in school today is but one example of the thoughtful reflection and dialogue between novices and experts that would have been difficult to orchestrate without the online connections to experts that Edunet facilitated.

**Articulation to enable tacit knowledge to be made explicit**

Reflection and articulation are intricately entwined. Articulation, the voicing of reflections, is essential to make explicit the knowledge one is constructing. The opportunity
for learners to explain their understandings and constructed meanings often involves articulation and defense of ideas and emerging learning. "Understanding involves a fulfilled complementarity of intellect and intuition" (Noddings & Shore, 1984, p. 117). The opportunity for articulation of the intersections of intellect and intuition that Edunet made possible forged the connections for the fulfilled complementarity that Noddings and Shore propose. The following Edunet post is one example of such articulation. Articulation posts like this counted for nearly 45 percent of the posts to Edunet.

************************************************************

I agree with ___ and ___ in that textbooks can only go so far when it comes to picking and choosing a particular style of discipline. In fact, I don't think it's a good idea to get yourself in the mindset that these models are THE answer teachers are looking for. When a discipline problem breaks out in my classroom I want to be able to react quickly without having to reflect for a moment which model would be best suited for the scenario. Each discipline problem you face may be different from other problems that have come up in the classroom before. Each experience is unique. These models can be useful for identifying a broad framework with which to classify different situations, but I believe our intuition must also come into play.

************************************************************

Coaching and scaffolding by the teacher at critical times

As I explained when I was telling how participation in Edunet affected my own practice, student feedback about understandings or misunderstandings provided in postings to the listserv informed and enhanced my ability to coach and scaffold learning when necessary. In face-to-face only classes, I might not even know about misunderstandings or
misperceptions until it was too late. With Edunet, student reflections, articulations, and feedback came almost immediately. I was able to identify coaching and scaffolding needs, and cut my turn around time for coaching and scaffolding to a bare minimum. Because Edunet functioned as a mentoring community, I no longer served as the sole provider of coaching and scaffolding. Other students or teachers or administrators or teacher educators or friends and family of Edunet participants regularly provided coaching and scaffolding as well. Again, in a face-to-face only class, such distributed coaching, scaffolding, and learning would not have been so available. Within the Edunet community, distributed coaching and scaffolding organically sprouted and grew in rhizomeic fashion.

**Authentic assessment of learning**

Postings to Edunet provided opportunities for students authentically to demonstrate their attainment of course concepts, skills, and competencies. Activity and assessment seamlessly intertwined in this real-world context. “What does this have to do with the real world?” became a superfluous question. Articulations of real-world applications and connections were an integral part of the daily dialogue and discussion on Edunet. Again, students voluntarily demonstrated course concept attainment in their posts to Edunet in spite of, or perhaps due to the unstructured, rather than prescriptive nature of the listserv. The following post illustrates the student initiated authentic assessment Edunet afforded:

```
Hi--I need some assistance in making a decision!
My plans are to teach Mathematics at the Middle School level and I do not know what approach to take in teaching these students. I am only a sophomore, but I want to set some kind of style early so that I can later build upon it. I just
```
finished writing a paper and in that paper I claimed that I would incorporate both Skinner's and Ayers' methods into my curriculum. Skinner has an atomistic view that the teacher is the trainer of his students. He also believes that all knowledge should be broken down into its smallest parts then built piece by piece into a wall of knowledge. The students' progress might then be measured through standardized testing. On the other hand, Ayers has a humanistic view that the teacher is a facilitator not a trainer. He believes in teaching subjects through the needs and interests of the student. Ayers encourages the students to engage in hands-on activity to enhance their learning.

When I was peer reviewing a classmate's paper I was struck by her comment that Math should be taught through Skinner's method because decreasing trial and error would help students progress more quickly with complex problems. My classmate also claimed that subjects like Science should be taught using Ayers' method.

--In my opinion math and science are equally complex! I believe that incorporating both Skinner's and Ayers' method would not only test student progress but will allow the student a chance to experience some hands-on skills that could enhance their learning.

To sum it all up--although I know there is not a right or wrong approach to teaching I still would like your feed-back! Despite the fact that it appears that I am set in my ways of incorporating both Skinner's and Ayers' methods, I am still looking for some feed-back to help me make decisions for my future.

************************************************************

I cannot imagine that if I had required students to post their understandings of behaviorist and constructivist teaching methods and philosophies that I would have received a more thoughtful and thorough yet concise demonstration of course concept attainment. This
post is even more precious to me because it is a student-initiated rather than an instructor prescribed or required assessment. Such authentic assessment in a real world context is the epitome of socio-cultural constructivism. This particular student-initiated “authentic assessment” opened up an ongoing discussion on Edunet about different teaching philosophies and methods. While most of the teachers on Edunet knew about behavior management and Skinner’s methods, many had not heard about more constructivist teaching methods like Ayers’. As students articulated their understandings of what they were learning in their classes, many of the practicing teachers were learning right along with the students. Edunet community members were actualizing the “Lifting As We Climb” motto as they raised their virtual voices in dialogue, reflection, and meaning making. This brings us back full circle to the title of this chapter, and to the conclusions.

Conclusions

As the title of this chapter, From SafetyNets to CyberLadders: A Sociocultural-Constructivist Actualization of “Lifting as We Climb,” suggests, initially my desire to create safety nets for learners spurred me to undertake this research. My own less than positive educational experiences fueled my conviction to create safety nets to keep other learners from falling through the educational cracks through which I almost had fallen. My experience teaching future teachers, working with other educators, and immersing myself in educational literature galvanized my resolve to create these safety nets, not only for students, but for teachers and teacher educators as well. My combined situated status as a graduate student, temporary instructor in a teacher education program, and critic of education conventions and prescriptions led me to embrace interpretive, critical, emancipatory, action
research as a means to explore and address this safety net conundrum. I will conclude this chapter with a final summary of my research findings.

The Edunet unstructured mentoring community listserv for future teachers, educators, and teacher educators provided not only the safety net that I had envisaged, but also a virtual cyber ladder. Rather than simply providing a safety net to connect educators and future educators thus decreasing isolation and marginalization, the Edunet listserv community constructed the scaffolding for a cyber ladder upon which students and educators could scale classroom walls into virtual space where they could connect education and schooling to the real world. Such “space” is difficult to impossible to find or create in face-to-face only, temporally and physically confined classrooms.

The scaffolding and rungs of this socio-cultural constructivistically grounded “CyberLadder” transformed the motto “Lifting As We Climb” into a reality for Edunet participants by facilitating connection, conversation, collaboration, caring, and development of voice, critical thinking, meaning making, and reflection. My study of and participation in the online Edunet mentoring community informed and transformed my teaching and my professional practice in unimagined ways. Edunet provided me with immediate feedback on students’ meaning making and understandings, enriched my connections with students, activated mechanisms by which I could provide coaching and scaffolding for students, and facilitated a formative assessment loop for continuous instructional improvement. Edunet also delivered an entire world of expert educators and others who joined with me and the students I taught in dynamic interaction and dialogue that facilitated learning and meaning making.
This research on the Edunet online mentoring community informs and enhances teacher education and educational practices by demonstrating, and illustrating actualization of the core values and critical elements of socio-cultural constructivist learning theory, situated learning, cognitive apprenticeship, and legitimate peripheral participation. Edunet provided and demonstrated authentic contexts, authentic activities, access to expert performances and modeling of processes, opportunities for participants to engage in multiple roles and perspectives, to collaboratively construct knowledge, to reflect, to articulate emerging understandings, the opportunity to receive and provide coaching and scaffolding, and, at all times, authentic “real world” assessment of learning.

The findings above focus on the specific instances of how the Edunet electronic community of practice helped to facilitate questioning and contesting of educational conventions and prescriptions, and helped to actualize socio-cultural constructivist learning. The next chapter will pursue the question of how this particular Edunet study fits into the larger picture of education and educational practice in a rapidly changing world.

References Cited


Public education is struggling to adapt to an intellectual, social, and cultural transformation that [has] ... made it necessary to rethink many of the basic assumptions that guided the development of modern industrial culture. It is increasingly evident that humanity faces the task of moving from an age of modernity into an uncharted post-industrial or post-modern future (Miller, 2000, online, paragraph 2).

Technology, we are often told, is reconfiguring social institutions and relationships. It is blurring the boundaries between homes, schools and workplaces, and between parents, teachers and students. It is reconfiguring social spaces, altering our sense of time and place, and redefining what counts as knowledge and learning (Buckingham, Scanlon, & Sefton-Green, 2001, p. 25).

In tandem, the statements above set the stage for the educational odyssey I will relate in this chapter while they additionally foreshadow the importance of the story I will tell. This tale is of incredible shifts within, and challenges to education. This epic is also brimming with the promise of opportunities. To begin this chronicle I will first look to the literature to explore some of the issues facing education at the beginning of the 21st century. I will weave my research and my experience throughout this saga, and at the conclusion, I will share my inductions and assertions about potentially wise courses of action available to those of us who have dedicated ourselves to the pursuit of learning. Before I launch into this epic, it is important to first point out why my particular telling of this story is worthy of attention.
Intersubjectivity Through “Multiplicity of Locations and Positions”

Examination of the quotes I used to introduce this chapter will help to articulate the importance of the narrative I will share, and at the same time help to point out why my personal exploration of this topic might provide meaningful insights. I do believe, as Miller (2000) points out in the opening quote, that tremendous struggles and monumental challenges face humanity in general and educators in particular as we travel further into the 21st century. I will outline the struggles facing education and educators in the “Challenges Facing Education” section. Before exploring these challenges though, it is important to relate how my personal experiences with education as a learner and as a professional educator have provided me with unique opportunities to engage in the very rethinking that Miller claims necessary. It was, in fact, the rethinking that I have engaged in due to my particular experiences as a learner and an educator, which provided the inspiration and impetus for this dissertation research.

My own educational journey, my particular “multiplicity of locations and positions” (Moore, 1994, p. 3) provide me with extraordinary “intersubjectivity” to apply to the rethinking process that I have undertaken for this dissertation. I ground my use of the term intersubjectivity in a compilation of the denotation of the constituent parts of the term. “Inter” is defined as: between or among, mutually or together. “Subjectivity” is defined as: relating to the thinking subject rather than to the object of thought; relying upon personal experiences, thoughts, and feelings; embracing connections. I will further explain the connotations of my use of the term intersubjectivity in the section that follows. At this point

---

1 I am indebted to Henriette Moore (1994) for her articulation of the value, and therefore importance of “multiplicity of locations” in providing the intersubjectivity which potentially enriches understanding.
it is important to look more closely at what Moore and I mean by “multiplicity of locations and positions.” Barry Kanpol (1997), an educator who has published widely from a critical pedagogy perspective on the role of teachers in the social order, claims that critical researchers must reflect on their personal history and their relationships to social structures in order to attain adequately an intersubjectivity wherein personal voices and relationships to structure are better understood. To further the understanding for which Kanpol is calling, I offer my reflections on my positions and locations, as well as my relationships to social structures that inform the experience and the understandings I bring to this research. I am:

- a graduate student engaged in interpretive, critical, emancipatory, action research;\(^2\)
- an educator working with, and learning from future teachers;\(^3\)
- a Faculty Development Center Director assisting faculty with the enhancement of teaching and learning from pedagogical as well as technological standpoints. While assisting faculty I am also learning with and from these educators;
- a site administrator for an online learning course management system, administering the technology in the service of learning;
- a member of a university campus Information and Instructional Technology Council, bringing pedagogical and technological concerns and expertise to the administrative table;
- a representative to both pedagogical and technological university system councils.

As is hopefully evident from this focused list of positions and locations through which I traverse; technology, pedagogy, and the intersections of technology and pedagogy are the

\(^2\) See the “Methodology: Connecting – Experiences, Passions, and Voices” section of Chapter 3 for a detailed explanation of the interpretive, critical, emancipatory, action research aspects of my research.

\(^3\) See the “Connecting Voices, Visions, Research, and ‘Lifting As We Climb’ to Transform SafetyNets to CyberLadders” section of Chapter 3 for examples of how I learned from the future teachers in the classes I taught.
figure and ground of my world. My simultaneous positioning as student, educator, administrator, pedagogical and technological practitioner provide me with unique opportunities to explore and engage in “intersubjective compromise, where [positional] histories [and realities] intrude on each other in often multiple and contradictory ways” (Kanpol, 1997, Online, paragraph 41).

To further document the intersubjectivity that I bring to this research, I would like to consider the second quote, detailing how technology is blurring boundaries, reconfiguring social spaces, altering our sense of time and place, and redefining what counts as knowledge and learning (Buckingham, Scanlon, & Sefton-Green, 2001). Because of the positions and locations that I bring to this research, and the fact that my research itself is an exploration of technological permutation of boundaries, reconfiguration of social spaces, alteration of our sense of time and place, and redefinition of what counts as knowledge and learning, I feel that this second quote explicates both my life and work. My simultaneous location and positioning at the intersections of technological, social, temporal, corporeal/non-corporeal, and pedagogical thresholds provides me with unparalleled opportunities to engage in the rethinking that Miller (2000), Buckingham, Scanlon, and Sefton-Green (2001) suggest as essential. This dissertation, and in particular, this chapter, are my attempt to voice this rethinking.

**Challenges Facing Education**

In order to consider the challenges facing education, I believe it is important to think about the meanings of history, interpretation, and narration, as these concepts help to frame
understandings of the challenges ahead. I embrace comparative world civilization professor Edward Berggren’s eloquent elucidation of history, interpretation, and narration (below) as the guiding timbre for this section.

Much in history hinges on how we approach the most viable or immediate evidence given to us. This evidence—even at the level of direct experience—is ever subject to interpretation and narration. Each event can be the subject of indefinite re-description and reinterpretation...There are indefinitely many possible worlds...Whichever world we choose, it becomes, in turn, subject to indefinitely many possible interpretations because one can always create another interpretation of that world. In any case, our interpretations hinge upon metaphors, rules, initial enframing assumptions, and countless other choices that are arbitrary constructs...Our worlds turn, as it were, in seas of metaphors... (Berggren, 1994, p. 29-30).

I began with this quote to establish, from the outset, my belief that a list of challenges facing education will vary greatly depending on the list maker. As Berggren points out, interpretations depend upon the assumptions of the interpreter. I have compiled the challenges that I explore here from a variety of sources: the literature of the history, foundations, issues, and perspectives on education; my experiences as a student, educator, administrator, and pedagogical and technological practitioner; and the word on the street, on the airwaves, and over the coaxial and fiber optic cables. I remind you that the source voicing a potential challenge provides the figure and ground framing that challenge. My perspectives cannot help but surface as well since this sea of metaphors in which we are swimming is of my conjuring.

The quotes that I used to open this chapter paint, with a broad brush, two corresponding pictures of the challenges facing education in the 21st century. Miller (2000) suggests that our challenge is in rethinking the basic assumptions of modern industrial society so that we can adapt to the tremendous intellectual, social, and cultural
transformations occurring as we move towards a post-industrial, post-modern future. Buckingham, Scanlon, & Sefton-Green (2001) focus on the technology aspect of the challenge. They see the challenge as dealing with the technological reconfiguration of social institutions, relationships, social spaces, our sense of time and place, and our notions of knowledge and learning. In other words, they see the challenge to be dealing with technology's reconfiguration of our entire world.

Others paint or voice the technological challenge in darker tones. Historian David Noble (1997) warns that technology will be used to automate rather than enhance education. Automation of education, he suggests, will perpetrate comparable ills to the automation of other industries; robbing educators of control over their working lives, the products of their labors, and their very means of livelihood. The corporatization of education and the wholesale production and distribution of technologically prepackaged "distance education" courses could further the deskilling and displacement of educators though "outsourcing" of "teaching" to less skilled, and therefore cheaper workers, according to critical theorist Michael Apple (1982). Lowell Monke (1999), an adamant critic of the "technological orientation" (p. 131) of schools, points out that it is not only the economic, nor even the social impacts of computers and educational technologies that are so problematic. Monke suggests that it is "the impact of the ideology imbedded in the computer on the very structure of education" (p. iv) that must be acknowledged and addressed. Monke claims that our challenge is to alter the entire structure of education in order to dethrone the technological ideology pervading schools and society. Craft (1997) agrees that transformation of the entire structure of education is essential, although technological ideology is not the term she uses to voice her concern. She frames the cataclysmic shift from modernism to postmodernism as the
major challenge. Craft says, "we increasingly need to create a systemic transformation of education...we have had a modernist education strategy being applied in our postmodern society" (p. 89).

Critical ethnographer Barry Kanpol (1997) takes a structural view of the challenges facing education and educators. He sees capitalistic market logic and the resultant race, class, and gender inequities as the major challenges. Kanpol also feels that "teachers are at pains to counter damning oppressive structural constraints imposed on them by the state mandated curriculum, intensification of labor, and other forms of personal and structural oppression" ([Online] paragraph 29). Educational historian Joel Spring (1997) sees society and the educational system challenged and transformed by the impact of urbanization, industrialization, immigration, globalization, and the culture wars.

Beare & Slaughter (1993) point out how, in the context of "compulsive technological dynamism, competitive individualism, and a radical loss of meaning and purpose, schools are in an impossible position, standing as they do at the crucial interface between past and future, charged both with the conservation of culture and with its radical renewal" (p. 15). Christopher Day (2000) recounts, particularly from a teacher's perspective, the educational challenges of the 21st Century.

For many teachers, the last 20 years have been years of survival, rather than development. As social and economic change have placed new demands upon and created new expectations from schools, hardly a year has passed without some reform being mooted, negotiated or imposed in the name of raising standards (appraisal, inspection), increasing "user" participation (open enrollment, local financial management) and pupil entitlement (a national curriculum).... Teachers have had to bear an increased workload; and in 2000, energy levels and motivation remain at best "frayed around the edges" as the threat of increased class sizes, teacher redundancies and teacher shortages grow (p. 101).
The personal laments of the teachers in Scott, Stone & Dinham’s (2001) international study of teacher discontent echo Day’s articulation of these challenges to education. Such reports corroborate and elaborate Day’s insistence that teachers are challenged by low pay, budget slashes, diminishing autonomy, decreased respect, increased workload, confusion, and uncertainty as social, cultural, technological, and economic crises unleash waves of reform or backlash often based on political expediencies rather than sound pedagogy.

Over a decade before Day laid out these challenges, Hord, Rutherford, Huling-Austin & Hall (1987) provided advice for addressing the 21st century challenges to come. They suggested, “Change is a highly personal experience. People are individuals and thus different responses and interventions will be needed for different people ... It is people functioning in a specific context that make change, not newly implemented materials and programs” (pp. 5-6). In his article written over a decade later, Day seems to agree when he says, “To develop schools we must be prepared to develop teachers. A first step in this process is to help teachers to remind themselves that they do have a crucial role to play in making a difference to the lives of students” (2000, p. 110).

I think that Day’s emphasis on the crucial role that individual teachers play in making a difference in the lives of students is an important lens through which to summarize challenges facing education. Each day teachers face the local, personal, individual fallout of societal upheavals from urbanization, industrialization, corporatization, globalization, and militarization. Each day teachers must rethink what they provide to students to try to adapt to the tremendous intellectual, social, cultural and technological transformations reconfiguring the world. Depending on the person framing the challenges, the terms or the emphasis might
differ, but the challenges inevitably revolve around these intellectual, social, cultural and technological axes.

This section on challenges facing education began with a global perspective, and moved to the local (personal), exploring the intellectual, social, cultural, political, and technological challenges facing education and educators. I believe that, as Day suggests, the major challenge for educators and education is making a positive difference in the lives of students. In order to make a positive difference in students’ lives we must successfully negotiate these intellectual, social, cultural, political, and technological challenges. Knowing where we have come from should help us develop a plan for meeting future challenges.

I would like to close this section on challenges facing education, and open the next section on epistemic sea change by returning to Edward Berggren’s richly poetic words: “...Our worlds turn, as it were, in seas of metaphors...” (1994, p. 30). I feel that it is time, now, to plunge into the metaphorical waters and to flow through the past fifty years of educational historicity. Again, I believe that understanding our history, knowing where we have come from, is essential for addressing the challenges that we face. I will frame this narration of educational history by sharing my own educational journey as a student, educator, administrator, and pedagogical and technological practitioner. For, as Winter (1998) proposes,

Where does ‘Theory’ come from in action research?: not mainly from a computer search of “The Literature,” but from a process of improvisation as we draw on different aspects of our prior professional and general knowledge in the course of the inquiry. This theoretical dimension of an action research inquiry may be thought of as a sort of journey of self-discovery (p. 370).
Due to the intersecting multiplicities of positions and locations that I bring to this research, I submit that this recounting of my journey of self-discovery has the potential to make at least a modest contribution to enriched understandings of education and educational practice in the twenty-first century. It is time now to get on with the journey.

**Epistemic Sea Change**

I will call upon Berggren, again, to open this section on the epistemic sea change coursing through education in the past fifty years. In the following quote, Berggren further elaborates on history in general, and educational or pedagogical histories in particular.

> History, as I read it, is about temporality, the dimension in which all learning and living takes place; EDUCATION (PEDAGOGY) is about learning, or that space in which history takes form and shape. Our lives open to time or historicity in an endless educational process. Education is like water moving in snakelike fashion through the geography of existence, cutting out deeper and deeper riverbeds, opening always to new life, opening into the sifting deltas and into the great seas—the oceans of existence, time and space (Berggren, 1994, p. 22).

What I understand Berggren to be suggesting in this passage is how intricately lived experience, education, and learning weave through and in essence write the histories which we then live and learn in flowing, contiguously connected seas of existence, time and space. Although each of us has a history uniquely our own, our histories flow through a collective geography of existence and open into constantly renewed oceans of learning, living, and life. Berggren’s words lead me to believe that it is important to examine and make sense of my own educational history as it flows through the collective geography of existence. I will now share my educational, pedagogical history.

My formal educational journey began when I entered Kindergarten in 1957, the same year the Russians launched Sputnik. At Sputnik’s launch, business leaders immediately
joined with politicians in chastising professional educators for making schools the weakest link in American defense against communism (Spring, 1997). The resulting criticism of schools and schooling spurred American education into a headlong rush to "catch-up" and to improve the nation's schools, particularly in math, science, languages and media services (De Vaney & Butler, 1996). President Eisenhower (1958) urged the U.S.A. to meet the Soviet threat by surpassing the Soviet Union in military power, technological advancement, and specialized research and education. Eisenhower called for nationwide testing of high school students and a system of incentives to stimulate mathematics and science education.

Congress passed the National Defense Education Act in 1958. Concurrently, anticommmunist backlash fueled attacks against humanistic educational theories and practices that had been introduced in schools throughout the first half of the 20th century (Cremin, 1964; Cuban, 1993; Reynolds & Martusewicz, 1994; Spring, 1997; Stevens & Wood, 1995). John Dewey's humanitarian, progressive ideas and ideals of transforming educational practice to "apply the promise of American life—the ideal of government by, of, and for the people—to the puzzling new urban-industrial civilization" had been gaining ground in American schools (Cremin, 1964, p. viii). "By the end of World War II...right-wing attacks were waged against the critical attitudes of intellectuals in academia as subversive of 'American ideals.' Public schools and school personnel began to be scrutinized by citizen's groups for their perceived roles in instilling communist tendencies into the hearts and minds of the nation" (Reynolds & Martusewicz, 1994, p. 227). I would like to point out here that I am not meaning to paint Dewey's ideas or the Progressive Movement that sprang from them as a unitary and cohesive force, nor am I saying that it was only the post World War II anticommmunist backlash that turned the tide of transformation progressivism had unleashed
in schools.\(^5\) I do feel that it is important to point out how such socio-political tensions were shaping pedagogical practice as I was entering school, however. The following paragraph will pull these tensions into closer view.

Since the turn of the 20\(^{th}\) century, Progressive/Pragmatic practices had been taking root in scattered schools across the country (Cremin, 1964; Cuban, 1993; Reynolds & Martusewicz, 1994). Post-Sputnik, the National Defense Education Act, which stimulated funding for efficient, effective, scientific training and education, helped to stymie the Progressive/Pragmatic movement’s growth. (Reynolds & Martusewicz, 1994; Spring, 1997). Rather than embracing Dewey’s humanistic, child-centered, practical as opposed to abstract approach (Dewey, 1916, 1990, [1938] 1963), the race to “improve” education increasingly took the form of behaviorally engineered programmed learning, teacher-centered instruction, commercial textbook/audiovisual driven curriculum, assessment through standardized homework and exams, and promotion of competition and performance ranking (Cuban, 1993; Reynolds & Martusewicz, 1994; Scott, Hill, & Burns, 1963). Dewey’s vision of schools providing “a means for bringing people and their ideas and beliefs together in such ways as will lessen friction and instability and introduce deeper sympathy and wider understanding” (Dewey, 1902) was often pushed to the periphery as political, social, economic, cultural, and technological complexity mounted. Scientific measurement-efficiency theories of classroom management gained ascendancy in the post-Sputnik Cold War freeze (Cremin, 1964; Cuban, 1993; Scott et al., 1963; Spring, 1997; Stevens & Wood, 1995).

My personal experiences with the bureaucratic, efficiency theories of schooling under which my school operated (Bowles & Gintis, 1976; Callahan, 1962; Spring, 1997), chronicled in the third chapter of this dissertation, provide examples of how severely such educational “improvements” affected my learning. I would like to share here, one vivid remembrance of how bureaucratic, efficiency, classroom management theories; the Cold War push for science education; and the reliance on educational films to “teach” the facts; coalesced in an extremely un-educative way for me personally. I feel that this example is particularly apropos because of its illustrative value in exposing real-life impacts of the political, social, economic, cultural, pedagogical, and technological tremors quickening the tides of educational practices since 1957.

During the 1960s, educational films took center stage at my school, especially in my science classes. Through the application of various theoretical lenses provided by critical theory, I understand now that the coalescence of a number of factors placed these educational films at the center of the science curriculum delivered by my school. The National Defense Education Act insistence on the necessity of math and science education provided political impetus. Standardization of curriculum and instruction as a tool for the reproduction and maintenance of hierarchical social and economic structure was another driving force. In this move toward standardization, teachers were devalued as professionals, curricular decisions were made at higher and higher hierarchical levels, and corporate interests gained greater and greater control over the content and the delivery of curriculum (Apple, 1979, 1982). I knew

---

See De Vaney and Butler’s (1996) history of educational media and film that documents how Sputnik’s launch primed federal funds for the introduction of audiovisual materials into the curriculum.
nothing about these factors at the time, however. All that I knew was that I could anticipate two, three, perhaps even four films per week, especially in science class.

I do not remember anything about these science films; in fact I do not remember actually watching these films. What I do remember is the gambling scheme that I developed and orchestrated in connection with these films. As the teacher wheeled out the projector, loaded the film, and turned out the lights, I collected wagers on the exact minute and second that the film would end. My capitalistic appropriation of these film showings stripped the films of any content or curricular relevance for me, and I am sure for my wagering classmates as well. It is painful for me to recognize, as I recall this memory, that I, along with the audiovisual and educational media corporate moguls, was caught up in the capitalistic market logic that Shapiro (1990) identifies as so antithetical to the democratic virtues and educational values that were supposedly flowing from and through schools at the time.

My educational film wager scheme illustrates how the shifting tides of often-contradictory ideas and ideals ebbing and flowing through education in the last half of the 20th century sometimes washed students into unintentional and unexamined backwaters. In an effort to navigate out of the backwaters and into the open sea of this saga, I would like to return to the tempests of ideology and practice that were buffeting schools as I continued my educational journey.

Less than a decade after the launch of Sputnik, as I was entering high school, Norman Kaplan (1965) pointed out that in the 1940s, 1950s, and 1960s it became increasingly clear that studies of the relations of science and society could no longer be neglected. Kaplan suggested that increasing understanding of the relations and connections of science and society was the cornerstone of democratic education. In that same year, Associate Justice of
the Supreme Court of the United States, William O. Douglas, (1965) carried the connections of science, technology, and humanity into jurisprudence. Douglas called university law schools to expand and enhance the basis for jurisprudence. He insisted that it was essential to make the connections and to address the issues of human, non-human, and natural systems rights as we moved into an increasingly complex and interconnected world. The educational innovations that Kaplan and Douglas suggested did not come about in the years that followed, however (Tyack, 1974; Tyack, Hansot, & Lowe, 1984). The following words of educational historian Larry Cuban reverberate with lament that the “connective” expansion and enhancement of education championed by Kaplan and Douglas, and earlier by John Dewey and the Progressives, failed to attain realization in the 60s and 70s.

Were policymakers deeply interested in pursuing forms of schooling that aimed at cultivating the intellectual, social, and economic powers of individual children while creating democratic communities in schools, they would see that current classroom organization discourages students from learning from one another, limits the growth of independent reasoning and problem solving, restricts opportunities for student decision-making at the classroom and school level, and largely ignores the contributions that the community can make to the students and that students can make to the community.... Such policymakers would see that existing school organization and teacher-centered instruction would have to undergo fundamental alterations in the interlocking structures of school governance, the graded school, instruction and curriculum, and university linkages (Cuban, 1993, p. 278).

In this challenge to policymakers, Cuban suggested alterations in instructional methods, curriculum, classroom organization and management, school governance, and governmental policies affecting and/or controlling education. Attempts at reform, some in tune with and others in opposition to Cuban’s call, have coursed through education since the 1950s. The framing and the details of reform accounts (i.e. the “power” in control of schools and the degree and/or direction of reform) depend on the standpoint and stance of the tellers.
I will share five different versions or explanations of shifting educational tides up through the 1970s, to set the stage for making sense of the tremendous changes and challenges ahead in the 1980s and 1990s.

Conservative historian and “standards” bearer Diane Ravitch (1983) claims that the problem with education is the “fact” that “the ideas and tenants of progressive education had become the dominant American pedagogy” (p. 43). Economists Samuel Bowles and Herbert Gintis (1976) argue that business leaders and liberal professionals managed to pull off successful administrative and curricular reform (i.e. standardized testing, ability grouping, vocational education and the comprehensive high school) yet effected little humanistic and egalitarian reform because these “reformers” failed to examine and criticize corporate capitalism. Historian Michael Katz (1971) claims that reforms failed to pass beyond classroom doors because reform movements have been essentially conservative in nature and have been aimed at bureaucratic changes instead of pedagogical changes. Educational historian, Joel Spring, (1997) suggests that complex and contradictory political, social, and economic forces acting on schools continuously confound the waves of reform rolling over and through education. Jesse Goodman (1995) constructs yet another historical framing around “waves” of school reform. Goodman identifies three waves of reform: the agrarian, the industrial, and the information age. He argues that the escalation of social functionalism (schools meeting functional needs of society), efficiency and productivity, individualism, and the ideology of expertism “faith in the creation of a caste of experts” (p. 19) through each successive wave reinforced “existing school practices and values rather than transforming teaching and learning in U.S. classrooms” (p. 1).
The preceding views of the shifting tides of educational crises, challenges, and reforms stirred up five powerful currents that came crashing into my already choppy educational ocean of existence. To summarize these views, the different currents sprang from the following interpretations of the problems and challenges preventing schools from realizing positive reform.

1. Humanistic education/progressivism is education’s major problem and an evil force that must be exorcised to bring education back to its true and pure roots.
2. Conservative forces have commandeered reform movements making school bureaucracy and social control rather than pedagogy the foci of change.
3. Unexamined corporate capitalism and profit motives animate schools imposing and perpetuating economic class-based structural and pedagogical hierarchies.
4. Political, social, and economic culture wars over the purposes of schooling throw the profession of teaching, the content of schooling, and the organization of schools into constant disarray.
5. Social functionalism, efficiency and productivity, individualism, and an ideology of expertism have turned waves of reform into stagnating whirlpools that reinforce rather than transform school practices.

It was within this complex, interconnected interplay of goals, objectives, desires, and social forces that I found myself immersed as I swam, and at times merely seemed to tread water, in this sea of learning. I experienced much tossing, turning, and buffeting about during the undergraduate era of my educational journey. I will share these undergraduate experiences next.

When I returned to college in the late 1970s, to finish a degree in Kindergarten-Elementary Education, I was thrilled to discover theorists and practitioners advocating educational methods other than the teacher-centered behaviorist methods employed in the school I had attended. I whole-heartedly agreed with Apple’s (1979) critique of the ideological hegemony of the hidden curriculum. My poor working class roots had instilled in me sensitivity to and affinity for the idea that schools functioned to reproduce the class
structure of the workplace through this hidden curriculum. I felt that it was important to consider Bandura’s (1977) social learning theory even though I did not agree in entirety with his premise. I was drawn to the social aspects of Bandura’s theory, but I was uncomfortable with his psychological focus on imitation and modeling which I felt excluded higher order cognitive processing. I immediately embraced Dunn & Dunn’s (1978) suggestions about the importance of attending to learning styles, and I devoured Gardner’s (1983) pioneering work in multiple intelligences because these student-centered methods seemed to me to flow directly from the humanistic pragmatic Dewey principles that I idealized. When Boud, Keogh, & Walker (1985) published on reflection as a tool for transforming experience into action, I recognized and applauded these ideas as an actualization of Dewey’s words, “growth comes from the continual interplay of ideas and their embodiment in action” (1990, p. 133). Bouton & Garth (1983); and Johnson, Maruyama, Johnson, Nelson, & Skon (1981); provided me with theory and methodology for employing cooperative, collaborative group work in the classroom, again an actualization of Dewey’s words, “the school itself shall be made a genuine form of active community life” (1990, p. 14). Noddings & Shore (1984) validated my notions that intuition and caring constituted valuable professional skills and ways of being. Vygotsky (1978) and Papert (1980) mapped out for me entirely new avenues of thought about active, engaged, scaffolded thinking and learning. I eagerly rushed to my student teaching assignments ready to employ these exciting teaching theories and methods.

As I entered the classrooms where I was placed for my student teaching practicum, I was sorely disappointed to find the child-centered pedagogy and practices in which I believed, absent and unappreciated. The teachers faced huge class loads, copious administrative details, the pressure of a mandated “coverage” curriculum, and the specter of
standardized testing linked to individual teacher and school accountability for student achievement. They were much too overloaded, it seemed, to attempt anything but a teacher-centered, fact-based curriculum!

To my dismay, I soon learned that my student teaching experience was not out of the ordinary when I read Tyack, Hansot, & Lowe's (1984) *Public Schools in Hard Times: The Great Depression and Recent Years* documenting how superficially, if at all, child-centered pedagogy had penetrated most classrooms. While teachers might configure students into groups, they were not employing cooperative, collaborative learning principles in these groups. Calls for efficiency through scientific, professional school management, coupled with the hierarchical administrative structure of schools left individual teachers little power to move from teacher-centered to student-centered classrooms even if they wanted to (Cuban, 1993; Spring, 1997).

At this point in my educational saga, the last two decades of the 20th Century, "high technology" began to flood into schools, complicating even further the labyrinth-like challenges that education and educators faced. I am not meaning to imply here that "technology" was new to the world, nor even new to education in the 1980s and 1990s. Technology, the use of tools to extend or enhance human capabilities, has been with us since the dawn of civilization (Mumford, 1934). Plato (1961), narrating Socrates’ story of King Thamus, points out how the "new technology" of writing, enabling the recorded history of humanity, diminished reliance on memory and devalued memory development. The King Thamus story highlights the challenges that technologies have posed to education and

7 "High Technology" is the term that "technological orientation" critic Lowell Monke (1999), whose views will be discussed more fully in successive sections, uses to identify and categorize the educational computing technologies about which he is so concerned.
educators since the time of Socrates and Plato, and throughout the ensuing ages. Although it is true that technology was not new to education in the 1980s and 1990s, these years did usher in a unique new era of technological opportunities and challenges for education.

Ithiel de la Sola Pool (1984) pointed out in the early 1980s how profoundly computer networking would affect the world. According to de la Sola Pool, computer communication is one of the four most fundamental changes in the history of communications technology. Writing, Plato’s concern in The King Thamus story, dates back 5,000 years, printing 500 years, telegraphy 150 years, and now computer communication dates back 30+ years. Each of these technologies has influenced and affected education and educators profoundly. Three decades after the introduction of computer networking and computer communication, educators struggle with the place of computing and the use of computer communication in schools.

Linda Harasim, educator, researcher, and Network Leader of the TeleLearning Network of Centres of Excellence in Canada, provides an historical framework for examining computer networking’s impact on education. In Shift Happens: Online Education as a New Paradigm in Learning Harasim (2001) lays out a timeline chronicling the enormous innovation and expansion in computing technologies in the 1970s, 1980s, and 1990s. I have gleaned the following events from Harasim’s timeline to illustrate the rising tide of technology as it relates to and flows through my personal educational saga. Harasim records 1969 as the birth of ARPANET, a collaborative network of governmental, scientific, and engineering computer networks. She reports that email quickly followed in 1971. In the 70s, as educational facilities became networked, the floodgates opened and the technological deluge rose rapidly according to Harasim’s timeline. By the mid 1970s, email and computer
conferencing were supplementing university courses. In early 1980 networked computer communication made its way into K-12 schools. Corporations and adult education enterprises offered the first entirely online non-credit courses and training programs in 1981. Online college undergraduate courses, online graduate courses, and online degree programs followed in 1984, 1985, and 1986.

In 1991, while I directed Multi-Media Services at the University of Minnesota-Duluth, developers at the Minneapolis campus of the University of Minnesota built Gopher, one of the first commonly used graphical user interface (GUI) visual tools for the Internet. Gopher presented information as a hierarchical listing of directories and file folders which users could “click on” to transparently jump from one computer to another. Berners-Lee invented the World Wide Web in 1992, the year I left the University of Minnesota-Duluth to pursue a Ph.D. in Curriculum and Instructional Technology at Iowa State University. The World Wide Web enabled posting of text, images, sounds, and movies on web “pages” connected across and around the world through “hypertext” and “hypermedia” links. The Web was a great place to go, but there was no easy way to get there until the following year, 1993, when the National Center for Supercomputing Applications (NCSA) released Mosaic, a program that facilitated easy access to the World Wide Web. Netscape, Internet Explorer, and other such web access “browser” applications followed. By early 1996, estimates placed Internet users at more than 30 million (Stull, 1997).

I spent 1992 through 1996, these years of exponential growth of computer communications, the Internet, and the World Wide Web, studying and teaching with, over, through, and about technology and the Web. The second and third chapters of this dissertation describe how my personal and professional experiences as a student and as a
teacher inspired me to explore the technological permutation of boundaries, the reconfiguration of social spaces, the alteration of senses of time and place, and the potential redefinition of what counts as knowledge and learning in an “Information Age.” The possibility that emerging communication technologies could perhaps facilitate some of the connections that I had found lacking in my schooling thrilled me. The possibility that educational technologies might distance learners even further from authentic meaningful learning frightened me. With these two vastly different possibilities in mind, I took up, as a personal challenge, a search for ways to facilitate connection rather than disconnection. Although all of the political, social, economic, cultural, pedagogical, and technological challenges facing education and educators coalesced in this challenge; my challenge particularly begged the technology question: Does the surge of educational technology imprison us in the belly of the whale, or position us at the crest of the wave?

**Belly of the Whale and/or Crest of the Wave?**

The specter of technology is indeed potentially dark, and formidable. I believe that it is incumbent upon all educators to examine critically technology and the use of technology in teaching and learning to make sure that the rising tide of educational technologies does not wash teachers and learners into a deep, dark belly of a whale. Mander (1991) voices concerns and recommendations about technology, which, although he is not speaking from an explicitly theoretical or educational perspective, might provide guidelines to facilitate a critical examination of educational technology:

---

8 Please see the third chapter of this dissertation for a detailed accounting of the feeling of disconnect I experienced in my schooling.
1. Since most of what we are told about new technology comes from its proponents, be deeply skeptical of all claims.
2. Assume all technology "guilty until proven innocent."
3. Eschew the idea that technology is neutral or "value free." Every technology has inherent and identifiable social, political, and environmental consequences (pp. 49-50).

Attention to these suggestions from Mander, and a look at additional complementary commentaries and warnings should help us think critically about technology. First, let us look at the critiques and warnings against technology.

Noble (1991; 1997) explains how information theory and systems technology are based on a war machines approach to controlling people, which makes these technologies excellent tools for hierarchical control of human behavior. Other educators, theorists, and historians share Nobel's concerns (Andrews & Hakken, 1977; Bowers, 1988; Callahan, 1962; Cuban, 1986; Nunan, 1983; Wells, 1986). Postman (1992; 1995) warns that technologies not only influence but also mold our cultures and our very ways of thinking. In The Whale and the Reactor: A Search for Limits in an Age of High Technology, Winner (1986) suggests that run-away technological ideology threatens to overtake any consideration of humans or humanity. Norman (1993) reiterates Winner's suggestion when he observes, "Technology has decided that machines have certain needs and that humans are required to fill them... We tailor our jobs to meet the needs of machines" (p. 223).

Consideration of such critical thinking about the social, political, environmental (and I would add pedagogical) consequences of technology is essential to facilitate deep understandings and richly informed decisions. While I do believe that it is vital to examine critically both technology and the use of technology in teaching and learning, I do not
believe this critical examination necessitates a slide into technological determinism, however.\(^9\)

I agree with critical theorist Arthur Feenberg’s (1991) concise, yet eloquent rejection of technological determinism: “Civilization is not decided by the immanent drift of technology, but can be affected by human action” (p. 14). While Feenberg rejects technological determinism, in *Questioning Technology*, Feenberg (1999) does share a concern about the amplifying and reducing tendencies of technologies that Don Ihde (1990) puts forth in *Technology and the Life World*, however, as do I. Ihde uses apple harvesting to illustrate the amplifying and reducing tendencies of technologies. Although it might seem to be straying from the subject of education to talk about apple harvesting, I do believe Ihde’s amplification and reduction concept is important to consider, so I will explore his illustration.

Ihde explains that someone picking apples by hand will directly touch each apple, and thus will tend to pick only the most suitable apples, enhancing the quality of the harvest, but limiting the quantity of apples harvested due to the labor intensiveness of handling each apple. Ihde goes on to say that technology use in the form of a mechanical apple picker will dramatically amplify (increase) the quantity of apples harvested, but will reduce (decrease) the quality of the harvest because human touch and the feel of the apple will no longer be guiding the selection process. Ihde makes an important point. The particular apple picking technology that he describes amplifies and reduces harvest quantity and quality respectively.

---

\(^9\) Technological determinism is exemplified by a binary: good/evil, progress/regression acceptance/rejection conceptualization of technology. Technological determinists tend to believe in an either/or “technology is destiny” conception of reality. They see one of two realities, neither of which allows for or recognizes human efficacy. These binary stances on technology are:

1. We have to accept technology as progress, technology is a mere instrument or tool, and is thus value neutral. See Bowers (1988) for an insightful articulation and critique of this instrumental view of technology.
2. We must reject technology and return to a more “pure” way of life because technology is a nihilistic force relentlessly overtaking us (Heidegger, 1977).
I would like to suggest, though, that if the person harvesting the apples had held “quality discernible only by human touch” as a core value, then this apple harvester would not have developed or embraced a machine that eliminated human touch in exchange for efficiency. Honoring the core value of “quality discernible only by human touch” would rule out technologies that did not facilitate, or at least allow human touch.

I believe that our values shape our visions, creations, inventions, and our choices. I am convinced that if our values spring from a principle of “quality discernible only by human touch and human connection” and if we embrace our values, and live by them, a technologically determined belly of the whale cannot and will not imprison us. Linda Harasim (2001) seems to be voicing a similar hope and vision when she proclaims, “Today, we have the unique opportunity and responsibility to engage in designing, at least to some degree, the world that we, and future generations, will inhabit” (p. 21). If we base our designs on the learner-centered, connected, hands-on, heads-engaged values that Harasim and a number of educators including myself champion, then I believe these values will animate the technologies that we invent and embrace.¹⁰

Hafner and Lyon (1996) suggest that connection-centered, deliberate, value-imbued thought fostered the development of networked communication systems. They report that visionaries motivated to facilitate participatory government, intellectual exchange, and interconnected social and cognitive communities brought the Internet and the World Wide Web into being. This interpretation offers a counter-point to the military industrial based values that Noble (1991) posits as the controlling force of information and communications

¹⁰ Please see the third chapter of this dissertation for my visions of facilitative design principles for learning. See also (Laferriere, Breuleux, Erickson, & Lamon, 2000) and (Harasim, 2001).
technologies. These differing slants on the motivational values behind information and communications technology encourage me to recall Berggren’s words, “evidence...is ever subject to interpretation and narration” (1994, p. 29). If I were to take Hafner and Lyon’s interpretation as reality, then I might be concerned that the good intentions and lofty values of some, even though these are the inventers or developers of a technology, do not necessarily ensure that the creation is safe from cooptation or deployment in an antithetical manner. The rush of corporate eLearning titans to corner the market on web-based course development systems provides a good case in point supporting such concerns. It is important to examine this eLearning example.

For-profit corporations are swallowing up web-based learning applications originally developed by educators, for educators in colleges and universities (McCloskey, 2002). The corporate executives leading the new “eLearning enterprises” often cast aside the original pedagogical grounding and principles of the technologies they are “selling” in the race to capture the highest eLearning market share. I have frustrating, painful personal experience with this disturbing trend. I have spent the past four years scrambling to keep pedagogical concerns on the table as the costs of the eLearning enterprises adopted by my university system skyrocket while the corporations jettison the original teaching-learning focus of their products. The professors I work with have had to give up eLearning system after eLearning system as for-profit corporations purchased course management systems originally developed and freely shared by colleges and universities. Yearly costs for one system jumped from $0 to $7,500 to $75,000 in less than three years. The corporation eliminated many of the pedagogically sound aspects of this course management system as they increased the price because these educational aspects did not contribute significantly enough to the cost-
benefit analysis. If we as educators fail to examine and evaluate such technologies and trends critically, using pedagogically grounded principles and values as our gauge, then we could indeed be swallowed into the deep, dark belly of the whale.

In an effort to address the disturbing trends and monumental challenges facing education and educators in the future, the following section will explore and propose potentially wise courses of action available to those of us who have dedicated ourselves to the pursuit of learning. I suggest that these proposed courses of action might help to position us on a learning-enhancing, connected, vibrantly brilliant crest of the wave rather than imprison us in a learning-limiting, disconnected, dark and cavernous belly of the whale.

Setting a Course for a Values and Visions Based Future

I would like to turn to John Dewey’s vision of what schools can and should be to open this section in which I will share my inductions and assertions about wise courses of action for a values and visions based future. I will quote Dewey (1990) at length here, because I believe that his insistence on schools providing authentic social and intellectual communities is as vital now as it was in 1900 when he delivered The School and Society lectures in which he said:

The obvious fact is that our social life has undergone a thorough and radical change. If our education is to have any meaning for life, it must pass through an equally complete transformation....The introduction of active occupations, of nature-study, of elementary science, of art, of history; the relegation of the merely symbolic and formal to a secondary position; the change in the moral school atmosphere, in the relation of pupils and teachers—of discipline; the introduction of more active, expressive, and self-directing factors—all of these are not mere accidents, they are necessities of the larger social evolution. It remains but to organize all these factors, to appreciate them in their fullness of meaning, and to put the ideas and ideals involved into complete, uncompromising possession of our school system. To do this means to make each one of
our schools an embryonic community life, active with types of occupations that reflect the life of the larger society and permeated throughout with the spirit of art, history, and science. When the school introduces and trains each child of society into membership within such a little community, saturating him with the spirit of service, and providing him with the instruments of effective self-direction, we shall have the deepest and best guaranty of a larger society which is worthy, lovely, and harmonious (p. 28-29).

I eagerly embrace Dewey’s vision of schools providing authentic intellectual and social community and connections, for, as I have expressed repeatedly throughout this dissertation, community and connections provide the axis about which my values and my life revolve. Dewey’s vision of schools providing the environment and the atmosphere for connecting and community animates and inspires my work. Values-based educational theorist and practitioner Parker Palmer seems to share this vision. He says, “reality is a web of communal relationships, and we can know reality only by being in community with it” (Palmer, 1998, p. 95). I agree with Palmer. I believe that the highest aim of education in the 21st century lies in weaving the relational webs that Dewey and Palmer suggest are essential. I propose Webs of Support and Engaged Accountability (WoSEA) as an approach to actualizing Dewey and Palmer’s visions.

**Webs of Support and Engaged Accountability (WoSEA)**

My experience, my research, my analysis, and my reflections lead me to propose courses of action or approaches that I have named Webs of Support and Engaged Accountability (WoSEA) as means of weaving community and making meaning of teaching and learning in this 21st century Information Age. My inspiration for the terminology as well as the warp and woof of WoSEA came from a synergistic blending of the concepts of Restorative Justice Circles of Support (Burns, 2001; Swanson, 2000), and the business and
educational approaches of cognitive apprenticeship (Brown, Collins, & Duguid, 1989) and situated learning (Lave & Wenger, 1990). I will explain below the aspects of these concepts or approaches that I utilized and I will highlight how these aspects or strands cross over and through each other to weave WoSEA.

Restorative Justice Circles of Support are designed to be safe environments where crime victims, offenders, and community members come together to address the causes and consequences of crime in a personal way. Participants have the opportunity to tell their own story, and through listening and responding as others share their stories, circle members have the chance to make sense of experiences and the chance to address painful issues (Burns, 2001; Swanson, 2000). When I heard about Circles of Support (COS) I felt that this concept held great promise for teaching and learning as well as for Restorative Justice, so I borrowed aspects of COS that would facilitate academic community building for WoSEA. As I explained in the third chapter of this dissertation, authentic contexts, access to experts, collaborative construction of knowledge, and coaching and scaffolding provide a framework for the synthesis of the cognitive apprenticeship, and situated learning approaches which I incorporated into my Edunet research. I wove these academic community building and scaffolding components together with the Circles of Support concept to provide the warp and woof of WoSEA. I gathered and gleaned applicable aspects, ideas, and terms from each of these approaches to weave my values and my visions into Webs of Support and Engaged Accountability (WoSEA).

As I envision them, Webs of Support and Engaged Accountability are supportive, scaffolded environments (communities) that facilitate connection, conversation, collaboration, caring, development of voice, critical thinking, meaning making, and
reflection. WoSEA are meant to realize the vision of the future that management professor, writer, and consultant Margaret Wheatley (2002) sets forth in *Turning to One Another: Simple Conversations to Restore Hope to the Future*. Wheatley shares her vision with the words, “I believe we can change the world if we start listening to one another again. Simple, honest, human conversation...Simple, truthful conversation where we each have a chance to speak, we each feel heard, and we each listen well” (p. 3). Wheatley continues, “People are the solutions to the problems that confront us. Technology is not the solution, although it can help. We are the solution—we as generous, open-hearted people who want to use our creativity and caring on behalf of other human beings and all life” (p. 19). Webs of Support and Engaged Accountability provide the time, space, and connections (virtual and/or corporeal) in which to actualize Wheatley’s vision.

I feel that it is important, at this point, to consider Wheatley’s conviction that people are the solution, not technology, although she says that technology can help. I agree that it is people, building community, connecting, communicating, committing, and caring, which provide the power and the force to open portals of world-transforming potential. People, not technologies, provide the life, the breath, and the connective tissue for community. Although people are central to community, this does not mean that it is impossible for technology to facilitate community and connections, however.\footnote{Please see Chapter 2 of this dissertation for evidence of the connection and community building facility of electronic communication technologies.} I feel that it is important, at this point, to critically examine critiques that consider technology and community to be mutually exclusive.
The first of Susan Leigh Star’s (1991) “Rules of Thumb for the Sociology of the Invisible” guides my thoughts about the veracity of claims about mutual exclusivity of technology and community. Star suggests:

The rule of continuity: There is no such thing as dualism
By this I mean that any idea that there are two domains that proceed in tandem (the mind and the brain; technology and society; science and interests; gender and socialization) and somehow “affect” each other is silly and should be rejected. Phenomena are continuous, or in Dewey’s words, “experience is a seamless web” (p. 277).

My experience, my research, my analysis, and my reflections lead me to agree with Star’s rejection of dualism, and thus I must take issue with Lowell Monke’s (1999) framing of the “technology-orientation versus community-orientation” concern. Monke presents “technology-orientation” and “community-orientation” as two mutually exclusive archetypal conditions. He insists that everyone understands technology and community in their archetypal essentiality, concurs upon the denotational as well as the connotational meaning of each, and agrees that all actualities fit neatly and unquestionably into one orientation or the other. Monke constructs a dichotomy, a choice between a “technology-oriented” versus a “community-oriented” approach to life and to education. He avows his choice of a community-oriented approach insisting that a community-oriented approach is the only way to develop learners’ inner resources. I agree wholeheartedly with Monke, that a community-oriented approach magnificently facilitates a learner’s development of inner resources. However, I contest Monke’s framing of this issue as if it is impossible to use technology, particularly computers, in any manner what so ever, while at the same time embracing and engaging in a community-oriented approach to education. I think that such apriori rejection of computer use as an anti-community-oriented approach begs the very “strawman
argument" accusation that Monke levels against technology advocates. Criticizing technology use that is not aimed at or based in community-oriented values as non-community-oriented is beside the point, I believe. Such false comparisons set up an easily toppled strawman. I believe that if community building and community-orientation is our value and our interest, that we should examine evidence from studies grounded in community-oriented applications of technology. The second and third chapters of this dissertation demonstrate that computer-based communication technologies can facilitate community and community building. I will return to this point shortly to elaborate more fully how valuable computer-based communication technologies can be for WoSEA weaving.

Before taking up the unique contributions that technology provides for WoSEA weaving, it is important to examine one more critique of technology use in education. Joseph Weizenbaum (1976) warns that technology “enslaves the mind that has no other metaphors and few other resources to call on” (p. 277). While I agree that we should be concerned about the enslavement of minds that have no other metaphors and few other resources to call upon, I do not feel that “technology” poses the problem here. In fact, I propose communication technologies as an excellent way to provide the very resources, the human connections and inner resources which Monke, Wheatley, Weizenbaum, and I value.

Linda Harasim’s (2001) research illustrates why online Webs of Support and Engaged Accountability are especially well suited to facilitate engagement in, examination of, and creation of metaphors by which we can connect with others and make meaning of learning and teaching in this age of information. According to Harasim, “five attributes make

---

12 Please see Monke’s dissertation (1999) page 120 to examine his strawman argument accusation against technology advocates.
online education a unique environment for education. In combination, they enable augmented learning environments that can enhance cognitive activities” (p. 16). The following list explores Harasim’s five attributes of online environments, and points out the unique contribution each particular attribute makes to WoSEA weaving.

1. Many-to-Many (group communication) facilitates:
   - Active exchange enabled by a rich information environment and socio-affective community connections
   - Motivational support of and through communities of peers
   - Exposure to new perspectives, multiplicity of perspectives
   - Opportunity to compare, discuss, modify, and/or replace ideas (conceptual change)
   - Encouragement to work through differences and arrive at intellectual convergence

2. Time Independence supports:
   - 24-hour access — available anytime — not limited to confined class periods or meeting days and/or times
   - Sustained participation due to anytime access, thereby contributing to ongoing knowledge building
   - Individual learning style accommodation - able to respond immediately or reflect and compose a response after reflection — able to participate at peak learning readiness times

3. Place Independence allows:
   - Access to the wealth of Web resources as well as peers and experts across the hall or around the world
   - Sharing and support across and around interests and avocations —connections facilitated on human rather than location based criteria

4. Text-Based / Media Enriched messaging encourages and contributes to:
   - Verbalization and articulation of ideas
   - Focus on and engagement with the message or idea
   - Clear expression of ideas
   - Rich database/web of ideas

5. Computer-Mediated environments enable:
   - Searchable, transmittable, and modifiable archived databases
   - Multiple passes through conference (discourse) transcripts
   - Building tools to exchange and organize ideas and support collaborative learning
   - Building templates, scaffolds, and educational supports for advanced pedagogy
   - Customizable learning environments for all disciplines and evidence-based pedagogies
These five attributes of online WoSEA incorporate, embody, and facilitate the critical elements of cognitive apprenticeship and situated learning articulated by Australian researchers and educators Ron Oliver and Jan Herrington (2000).

1) Authentic contexts
2) Authentic activities
3) Access to expert performances and the modeling of processes
4) Multiple roles and perspectives
5) Collaborative construction of knowledge
6) Reflection to enable abstractions to be formed
7) Articulation to enable tacit knowledge to be made explicit
8) Coaching and scaffolding by the teacher at critical times
9) Authentic assessment of learning within tasks (p. 180-182)

I demonstrated in the third chapter of this dissertation how an online mentoring community provides a virtual space and an environment that meets all nine of Oliver and Herrington’s critical elements. While I have demonstrated that online community can indeed realize and actualize these critical elements, I am not suggesting that online is “the only” or even that online is “the best” medium for WoSEA. I believe that we can and must weave Webs of Support and Engaged Accountability in our face-to-face classrooms, in our K-12 schools, on our college campuses, within our communities, and online across and around the world.

**Community is the Key**

Elementary educator Mara Sapon-Shevon (1995) points out that “Community building is not what you do if you have time, or only for the first 2 days of class. Building a solid, safe community must be a priority and an ongoing commitment” (p. 102). She goes on to say it is vital that we build classroom communities “in which students are comfortable

---

Please refer to the third chapter of this dissertation for a detailed accounting of how these critical elements can be realized online.
showing themselves, being themselves, and being honest about who and what they are” (p. 104).

I could not agree more with Sapon-Shevon’s assessment of the priority of building solid, safe, and I would add supportive, scaffolded communities for learners. Such a solid, safe, supportive, scaffolded community was my aspiration when I created the Edunet listserv online community, and this continues to be my intention as I support faculty in enhancing learning and building community in face-to-face as well as online courses. I also hold this vision of community before me as I currently build the scaffolding for a campus encompassing, mentoring, learning, collaborative venture for faculty, staff, and students at the university where I serve as Faculty Development Center director. Webs of Support and Engaged Accountability, online and face-to-face will provide the means of actualizing this mentoring, learning, collaborative community.

I would like to consider Richard Prawat’s words as a vehicle for examining once again the concept and the reality of Webs of Support and Engaged Accountability. Prawat (1996) says, “If our intent is to build social and intellectual connections between people, commitment may be a more relevant construct than control” (p. 100). I think that Prawat is right. Commitment is an essential construct for building social and intellectual connections between people. In fact, I have embraced commitment as one of the five Cs that provide the foundation, impetus, and animation of WoSEA. C5 - Connection - Communication - Commitment - Caring - and Community are the constructs that weave Webs of Support and Engaged Accountability. WoSEA are not about control and they do not support or facilitate control, especially in the “power over” sense of control. That is why I used the words Engaged Accountability when I named WoSEA. Webs of Support and Engaged
Accountability offer each of us the opportunity to engage in conversation with others, to articulate thoughts, to organize information, to abstract ideas, and come to understandings. Through WoSEA we come to understand our own accountability through our connection, communication, commitment, and caring for, with, and about those we join in community. WoSEA are the actualization of Wheatley’s (2002) vision, “we can change the world if we start listening to one another... Simple, truthful conversation where we each have a chance to speak, we each feel heard, and we each listen well” (p. 3). We can realize this vision whether we weave our WoSEA face-to-face, whether we use computers to connect, communicate, and develop/express commitment and caring, or whether we blend our online and our corporeal WoSEA.

Conclusions

In his dissertation, Lowell Monke (1999) said, “I have read by now hundreds of articles, both in the popular press and in academic journals, concerning the use of high technology in education, and the rarest of finds is the essay that expounds on how computers can be used to facilitate idealism, the struggle for self-knowledge, the strength to follow one’s own vision” (p. 85-86). While I would not characterize this dissertation as being about “high technology” or about computers, I would like to suggest that this dissertation does address the ideals that Monke points out as so important: facilitating idealism, the struggle for self-knowledge, and the strength to follow one’s own vision. I join Monke, Palmer (1998), O’Sullivan (1999), Alger (2002), and Wheatley (2002) in believing that actualization of such ideals are among the highest ends of education. The point where I disagree with Monke is upon his insistence that technology unavoidably thwarts these important human
and humanistic processes and habits of mind. The research that I have presented in this dissertation suggests that eschewal of technology is not an absolute prerequisite to meaningful, transcendent teaching and learning. On the contrary, I submit that continuously questioning technologies, ideologies, and ideological groundings while simultaneously embracing and honoring the human spirit, human connections, and human community, offers us avenues by which we can steer clear of the formulas, systems, and standard methodologies of education Monke reminds us that “Ellul warns against” (p. 114). Monke continues, “we can, I think, discuss approaches, attitudes and relationships. To the extent that we keep the focus in these realms we may elude the technological trap” (p. 115). Following the spirit of Monke’s suggestion for discussion, in this chapter, I have proposed weaving Webs of Support and Engaged Accountability (WoSEA), face-to-face and online, as wise approaches available to those of us who have dedicated ourselves to the pursuit of learning. I believe that these Webs of Support and Engaged Accountability will provide us with the space, time, and encouraging atmosphere to write the narratives that bring meaning to our lives (Postman, 1995) so that we can weather the epistemic sea change of our pedagogical journeys.

References Cited


Chapter Five

General Conclusion

I feel that it is fitting to open this conclusion with Van Maanen’s (1988) insightful words from *Tales of the Field: On Writing Ethnography*, “we are unable to do much more than partially describe what it is we know or do. We know more than we can say and will know even more after saying it” (p. 123). In my research and writing of this dissertation, I have struggled to come up with the words to fully describe the cords of community, pedagogy, and technology that weave throughout my life and my work in my efforts to make sense of learning and teaching in this Information Age in which we live. After putting these words to paper, “after saying it,” I attest to the veracity of Van Maanen’s words; I certainly do know more now than I did before I struggled to put my understandings into words. For this reason, I would like to reframe my words, once more, so that I might know even more through “saying it” one more time.

In this conclusion, I will draw together the meanings I have made of the historical, political, social, economic, and cultural issues, opportunities, and challenges facing education in the 21st century as I have followed these strands through the “connection/disconnection” tension reverberating through my core cords of study: community, pedagogy, and technology. Before I weave these strands together into one concluding fabric of understanding, I must point out the salience of the “connection/disconnection” tension woven through each of the articles of this dissertation.

This “connection/disconnection” tension posed two dichotomous questions as it wove through the community cord of my study: (1) whether “real” human interaction, community,
and connection was as possible online as face-to-face; or (2) whether computer-mediated communication (CMC) isolated individuals, socially and emotionally disconnected peoples and groups, and destroyed "real" community. Through the third chapter, focusing on the pedagogy cord of my study, this tension rose powerfully, and for me, poignantly, in my search for authentic, hands-on, heads-engaged, socio-cultural constructivist, pedagogical practices that might spare students from the disconnecting and alienating teaching methods that I had experienced in my schooling. The "connection/disconnection" tension that wove through the community and pedagogy articles tangled even more tightly with the technology cord in the forth chapter. This tension spurred the following contentious, dichotomous hopes/fears: (1) emerging technologies will facilitate connections, community, and authentic, meaningful learning; or (2) educational technologies will obliterate human connections and community, making authentic, meaningful learning impossible. Historical, political, social, economic, and cultural issues, opportunities, and challenges complicated and pulled tight the cords of these hopes and fears.

In an effort to resolve these underlying "connection/disconnection" tensions, I heeded Dewey's ([1938] 1963) advice and looked beyond either-or equations to develop "deeper and more inclusive" (p. 5) understandings grounded in my experience, research, and analysis. Through each of the cords of my research, I reached beyond either-or dichotomous thinking to develop inclusive, flexible approaches that critically interrogated pedagogical and technological assumptions. Community sociologist Joseph Gusfield (1975) emphasizes the importance of going beyond dichotomous either-or thinking to make sense of the complexities of contemporary life when he says:
In positing “community” as opposite “society,” “traditional” opposite “modernity,” both evolutionary sociologists and modernization theorists have given us an overly simplified and distorted picture of how and in what direction change takes place in contemporary life” (p. 62).

Since my goals with this research revolved around changing, improving, and actually transforming education into Dewey’s ([1938] 1963) authentic “social enterprise in which all individuals have an opportunity to contribute and to which all feel a responsibility” (p. 56), I found Gusfield’s cautions against dichotomous, overly simplified understandings of change particularly apropos. Either-or, dichotomous thinking proved inadequate in understanding the complexities that wove throughout each of the cords of my inquiry. I will briefly summarize how I resolved the tension between connection and disconnection in the community, pedagogy, and technology cords of my inquiry in the following paragraphs.

In the second chapter, I interrogated definitions and conceptions of community, culture, and communications, and found that dichotomous conceptualizations that privileged face-to-face over online communities were counterproductive. I demonstrated how the Edunet listserv that I created and studied fulfilled various sociological definitions of community. I employed numerous analytical frameworks to further explicate and to make sense of the “community” that developed in Edunet. I followed Dewey’s suggestion not to take one side or the other, however, but to come up with a deeper more inclusive plan. In this spirit, I suggested that online enhancements of face-to-face classrooms might synergistically facilitate development of voice, reflection, and community.

In the third chapter, I picked up the pedagogy cord of my research, and I demonstrated, with the Edunet research data, how this listserv facilitated connection, conversation, collaboration, caring, critical thinking, and meaning making on the part of my
students, myself, and the world of expert educators and others who were able to join our classroom community through the internet. I showed how Edunet provided and demonstrated authentic contexts, authentic activities, access to expert performances and modeling of processes, opportunities for participants to engage in multiple roles and perspectives, to collaboratively construct knowledge, to reflect, to articulate emerging understandings, the opportunity to receive and provide coaching and scaffolding, and, authentic “real world” assessment of learning. Again, I demonstrated in the third chapter, the synergistic actualization of Dewey’s ideals through face-to-face classrooms enhanced with online connections.

In the fourth chapter I insisted that eschewal of technology is not an absolute prerequisite to meaningful, transcendent teaching and learning. On the contrary, I suggested that continuously questioning technologies, ideologies, and pedagogical groundings while simultaneously embracing and honoring the human spirit, human connections, and human community, would provide educators with the atmosphere and the elements that Dewey claimed are absent in our schools.

A society is a number of people held together because they are working along common lines, in a common spirit, and with reference to common aims. The common needs and aims demand a growing interchange of thought and growing unity of sympathetic feeling. The radical reason that the present school cannot organize itself as a natural social unit is because just this element of common and productive activity is absent. …the tragic weakness of the present school is that it endeavors to prepare future members of the social order in a medium in which the conditions of the social spirit are eminently wanting (Dewey, [1938] 1963, p. 14-15).

I proposed weaving Webs of Support and Engaged Accountability (WoSEA), face-to-face and online, to actualize Dewey’s ideals of a growing interchange of thought in a medium facilitative of the social spirit. I believe that Webs of Support and Engaged Accountability,
face-to-face and online, will provide us with the space, time, and encouraging atmosphere to make meaning of learning and teaching in the Information Age in which we live.

References Cited

