

**COMMUNITIES OF PRACTICE: THE UTILITY OF WEB-BASED
COMMUNICATION TOOLS IN ASSISTING NEW, ADULT, ONLINE
LEARNERS' TRANSITION TO FORMAL DISTANCE EDUCATION**

A Record of Study

by

RENÉ PATRICIA MILLER

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

December 2007

Major Subject: Agricultural Education

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Approved by:

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ABSTRACT

Communities of Practice: The Utility of Web-based Communication Tools in Assisting New, Adult, Online Learners' Transition to Formal Distance Education. (December 2007)

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Institutions of higher education are harnessing the communication ability of the Internet to offer classes and academic degree programs. This study investigated adult students during their first semester in a distance delivered doctoral program. The purpose of the study was to examine the use of web-based communication tools and their ability to establish a community of practice enabling the new students to share solutions related to distance doctoral study.

This case study included the entire cohort of a distance delivered Ed.D. in Agricultural Education administered jointly by Texas Tech and Texas A&M Universities. Data collection methods included a semi-structured telephone interview, containing an adapted Sense of Community Index and postings on a Wiki (editable web page). Data analysis produced a participants' profile and their use of web-based communication tools. This study found that (a) a variety of web-based tools enabled the students to connect with their cohort on a routine basis, (b) it is possible to establish a community of practice using a variety of web-based communication tools, (c) after one

semester the cohort is an embryonic community of practice (d) the students were able to assist each other with concerns that helped them acclimate to learning online and their doctoral program, (e) students appreciate the flexibility that distance education offers but some prefer a traditional education, (f) students were frustrated with the technology during the first few weeks of their program, (g) new doctoral students desire instruction in the use of the course management system, the online library, and scholarly writing, (h) the students feel a strong sense of community, (i) use of web-based communication tools are vital as they assist in the student's learning, (j) students felt isolated from their cohort until they participated in a group project even though they had the use of web-based communication tools at their disposal.

The results of this study suggest that opportunities for students to engage socially with their peers should be built into the design of online classes and degree programs. Future research is recommended to examine the sustainability and desirability of virtual communities of practice.

DEDICATION

I dedicate this Record of Study to the most important people in my life.

To my late dad, Jerry Ryneerson and my mom, Lorraine Ryneerson; you have always believed in my ability to do anything I wanted to do if I was willing to work hard enough. You showed me how to do it and I am forever grateful for your love and support!

To my husband, Kevyn; your love, patience, and encouragement mean the world to me. You have tolerated the disruption of our life as I furthered my education and you learned to cook. You are fantastic!

To my daughters, Jess and Kasey; you both said “Follow your dreams, momma, follow your dreams.” With your love and encouragement I have. I am so proud of you both for becoming amazing women. Shoot for the stars, girls, shoot for the stars!

ACKNOWLEDGEMENTS

Words are not adequate to express my gratitude to the co-chairs of my committee, Dr. Kim Dooley and Dr. David Doerfert. Your guidance as I navigated the maze of doctoral study and research is invaluable. I am so glad that I followed my gut instinct and selected you both as my chairs. That was one of the better decisions of my life. You have demonstrated patience, care, and compassion. You have shared your knowledge and experiences. You are two of the finest teachers I know.

I would also like to thank my committee members; Dr. Scott Burris, Dr. Larry Dooley, and Dr. Theresa Murphrey for their willingness to serve on my committee and their examples of how to be great teachers and researchers.

Gratitude is extended to Dr. Glen Shinn and Dr. Matt Baker. Gentlemen, I can't thank you enough for answering my many emails over the years.

Thanks also go to my friends and colleagues and the departmental faculties and staff at both Texas Tech and Texas A&M Universities for making Doc@Distance a great experience.

Last but not least, thank you Kevyn, Jessie, and Kasey for your love, support, and patience. I couldn't have done this without you.

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CHAPTER I

INTRODUCTION

Background and Setting

The World Wide Web (WWW) has increased the ability to communicate with people all over the world through online connections. The WWW has enabled higher education to harness the communication power of the web to deliver online classes and degree programs to place-bound students. The past ten years have shown explosive growth in both the numbers of higher education online courses offered and the number of students participating in online courses. The most recent study by the Sloan Consortium (Allen & Seaman, 2006) reported that almost 3.2 million students took at least one online course during the 2005 Fall semester, an increase of 900,000 more students than in 2004. More than 96% of institutions with enrollments of 15,000 or more students offer online courses with doctoral/research institutions delivering the highest rate (greater than 80%) of online offerings in the form of courses or full degree programs. Jeff Seaman, the chief information officer and survey director of the Sloan Consortium, stated “This is the largest study to date and it tells us online learning is growing without any sign of a plateau” (Babson College, 2006, November 9, ¶ 2). Many academic disciplines offer online classes, certificates, and full degree programs with agriculture being listed as one of the top ten disciplines developing online learning at the post-secondary institutional level (National Center for Education Statistics, 1998).

This record of study follows the style and format of the *Journal of Agricultural Education*.

Online learning has been highlighted as a delivery system for distance learning in higher education as it can provide students who are dispersed across the nation with a wealth of interaction and rich learning experiences (Reiser, 2002). The discipline of Agricultural Education is offering classes and complete degree programs via online learning (Dooley, Kelsey, & Lindner, 2003; Miller & Miller, 2005).

Higher education, traditionally focused on young adults learning in a classroom, is experiencing a shift towards providing online education to a variety of age groups (Bates, 2000). The profile of a *traditional* college student is defined as an 18-22 year old, full time student, living on campus. Today, those students make up only 16% of all undergraduate enrollments. A large percentage of college and university students are *non-traditional*, as 40% of today's students' study part-time instead of full-time and 58% are 22 or older. These non-traditional students are juggling work and family obligations as well as full or part time study (Stokes, 2006). The *non-traditional* student label applies to online learners. According to Moore and Kearsely (1996), most distance education students are adults between the ages of 25 and 50. That fact has not changed in the last ten years. The most recent study by Noel-Levitz (2006) found that 81% of online learners are 25 or older, 68% are women, the majority are employed full-time, are married, and own their own home. Over 45% have the goal of obtaining a master's or doctoral level degree. Most online classes (82%) are taken by off-campus students. Figure 1 illustrates some of the demographic characteristics of online learners.

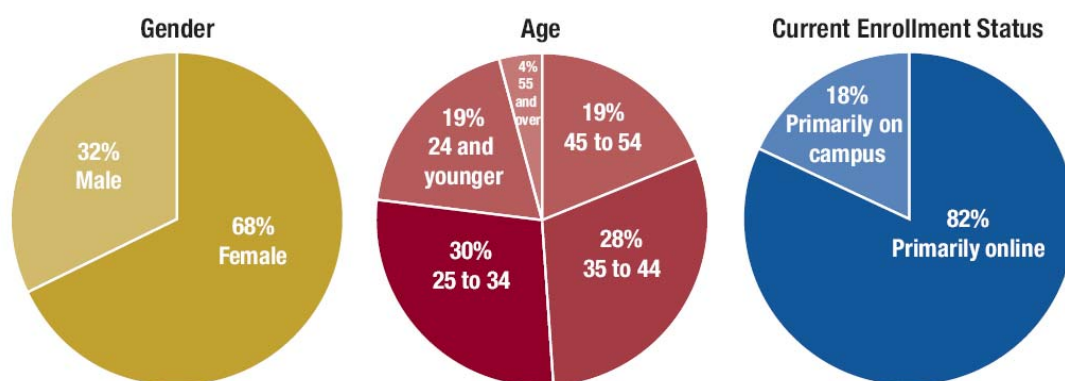


Figure 1. Demographics of online learners by gender, age, and enrollment status.
Note. From the “National Online Learners Priorities Report” Noel-Levitz[®], Inc, p. 4. Reprinted with permission.

Table 1 compares selected demographic characteristics of resident and online students (National Center Education Statistics, 2006; Noel-Levitz, 2006).

Table 1

Demographic Comparison of Resident and Online Students.

Characteristics	Resident	Online
Gender		
Female	58%	68%
Male	42%	32%
Age		
<24	47%	19%
>25	43%	81%
Employed full time	24%	>50%
Married	20%	>50%
Raising children	25%	>50%

As the demographics of higher education change, a critical area of study revolves

around how to motivate adult learners to become fully absorbed in the online learning process. Educators must develop strategies based on the characteristics of those adult learners (Park, 2004). Learning in an online environment requires more than content knowledge. Students must possess the ability or learn how to perform in an efficient and effective manner as they adapt to online learning (Hillman, Willis, & Gunawardena, 1994; Kazmer, 2000; Lim, 2001; McVay, 2000; Stokes, 1999).

Doctoral degree programs require a shift in attitude and activity for most students (Brooks & Fyffe, 2004). Doctoral students must adjust to the role of a graduate student, learn the culture (values, attitudes, and expectations) of the group they are joining, learn about academic life, and learn about the specific discipline they have chosen to study (Austin, 2002). As more graduate level degree programs are offered online, there is concern that students separated by time and distance from the institution and each other, may require using proven pedagogical strategies in a new context (Wikeley & Muschamp, 2004). Students may find that their mind-set, attitudes, and perceptions that have been successful in the conventional classroom will work against them in a new online class environment (Dringus, 1999; Eastmond, 1994; Harasim, 1989; Langer, 1997). Studies have shown that individual participation has less of an impact on learner satisfaction than perceived interaction in online classes (Fulford & Zhang, 1993; Sherry, Fulford, & Zhang, 1998).

For over 20 years, social learning theories have held a prominent place in learning research (Nicol, Minty, & Sinclair, 2003). While views of social theorists differ in significant ways, one common thread states that interaction and dialogue are

fundamental for productive learning (Cohen, 1994; Qin, Johnson, & Johnson, 1995; Roschelle, 1992; Slavin, 1994). Reisetter and Boris (2004) documented that students highly value virtual teacher availability and peer chats. Rovai and Wighting (2005) report learning occurs most effectively when there is a strong sense of community among the learners. Creative use of communication technologies can enhance the quality of online learning by providing opportunities for student networking. In an online learning environment, student networking must occur while students are in different locations. Distance students do not have the same opportunity as on-campus students for informal communication with their peers (Miller, Murphrey, & Edgar, 2006).

Using a variety of media to deliver instructional content and to facilitate communication enhances learning (Cain, Marrara, Pitre, & Armour, 2003). In fact, one study documented that the greater the number of communication channels available for students to interact (network), the more positive students were about their online learning experience (Williams, Nicholas, & Gunter, 2005).

Previous research suggests that communities of practice among face-to face learners are beneficial as they provide interaction and dialog between experienced members and newcomers (Wenger, 1998b). That communication not only promotes the relaying of knowledge, it also promotes the cultivation of new knowledge and understanding (Gray, 2004). Community knowledge is an important part of a community of practice, which means that the sum of community knowledge is greater than the sum of the knowledge of individual participants (Gherardi & Nicolini, 2000). Knowledge can increase through discussion (Bielaczyc & Collins, 1999). Facilitation, a concept that is

integral to constructivism, can be useful in guiding discussion topics among the participants in the community (Bielaczyc & Collins, 1999; Fischer, 1998; Palloff & Pratt, 1999). Originally, the idea of communities of practice applied to groups of people that interacted in face-to-face settings (Lave & Wenger, 1991). Johnson (2001) asked if current technology can be used to support the collaboration needed to establish a distributed or virtual community of practice applicable to online learning.

Statement of the Problem

With the advent of online learning creating virtual or distributed learning communities, how can Agricultural Education departments support new, adult, doctoral students to be persistent and confident in their abilities to learn in an online educational environment?

Statement of Purpose

This study will assess the effectiveness of using web-based communication tools in their ability to establish, support, and maintain a community of practice with a new geographically distributed, jointly administered Ed.D. cohort (Cohort III). The working hypothesis is that using web-based communication tools will allow the new adult students of the cohort to build a community of practice and the resulting interaction (networking) will support them as they transition to being satisfied and successful learners in a distance delivered doctoral program.

Research Objectives

The following objectives guided this study:

1. Explore and describe whether a community of practice can be established using web-based communication tools, examine whether those tools help new adult online doctoral students adapt to online learning, and increase a student's satisfaction and perception of success with online learning.
2. Explore and describe whether a sense of community is desired, important, and lessens the feeling of isolation that may occur with new, adult, doctoral, online students.

Methodology

A semi-structured interview was conducted with each student at the end of their first semester in the jointly administered Ed.D. program assessing their use of web-based communication tools. During this interview, each student responded to the 16 statements of the Sense of Community Index (SCI) as well as demographic information (see Appendix A). The data from the transcribed interviews and the postings of the Wiki was evaluated using Content Analysis for emergent themes to be grouped and analyzed by the researcher. Correlations were investigated between dominant themes with responses from the SCI.

Definitions

Adult Learner— A student over the age of 25 years old (Moore & Kearsley, 1996).

Andragogy — Adult learning theory (Knowles, Holton III, & Swanson, 1998).

Centra[®] – Web-based conferencing software.

Community of Practice — A group of people, with like-minded interests, that share knowledge and experience, contributing to informal learning within a social setting (Wenger, 1998b).

Distance Education — Formal education where the instructor and the students are separated by time and place (Moore & Kearsley, 1996).

Instant Messenger – Computer software allowing real-time chat.

Online — Information and communication accessible through a computer networked to the Internet (American Heritage College Dictionary, 2007).

Pedagogy — The art and practice of teaching (American Heritage College Dictionary, 2007).

Self-Directed Learner — A learner that takes responsibility for his or her own learning (Knowles et al., 1998).

Virtual — Connection to other people or ideas using a computer networked to the Internet.

Web-based Communication Tools — Computer hardware and software that allow people to communicate via the Internet. Communication may be asynchronous (delayed) or synchronous (occurring in real-time).

Web Browser — Software that allows a computer with Internet access to read information available on the Internet.

Wiki – Web page that can be edited with a web browser.

Assumptions and Limitations

Four assumptions were made while conducting this study. First, the participants responded with truth and candor in their interviews. Second, the students were new to doctoral study at a distance. Third, the interviews occurred shortly after the participants' first semester in their doctoral program, minimizing the effects of distortion or memory loss. Finally, each participant entered into online doctoral study with their own attitudes, perceptions, and biases about a distance delivered doctoral program.

One limitation of this study was that student explanations of Centra[®], instant messaging, and email use were from description only; there were no transcripts to decode. Additionally, the size of the population studied limits the generalizability of the statistical analysis.

Significance of the Study

The findings of this study will be significant to higher education institutions that offer online courses and degree programs. Administrators and instructors will gain insight into the mind-set of new, adult, doctoral, online students. This insight will allow instructors and administrators to better understand whether social communication is needed by adult, distance, doctoral students both in and out of the formal classroom. The insight will illuminate what web-based communication tools are utilized by students to network with each other and whether that communication was beneficial to them as they adapt to online learning and doctoral study. The results of this study will provide valuable information related to course design, the development of orientation programs, and mentoring for online students.

CHAPTER II

LITERATURE REVIEW

The theoretical framework for this study is based on constructivism (Piaget, 1973). The learning theories of Dewey (1938), Piaget (1973), Vygotsky (1978), and Bruner (1996) propose learners will gain new knowledge based on existing experiences and knowledge. In this perspective, the instructor is a facilitator of knowledge. For Dewey (1938) knowledge is based on active experience. The main purpose of education is to improve the reasoning process as applied to solving problems. Knowledge builds around the process of discovery and is dynamic (Dewey, 1938). Vygotsky (1978) stressed that learning is dependent on the social context in which learning occurs. His theory called *social constructivism* stresses the worth of interaction with people other than the instructor, i.e. other students.

Adult Learners

Distance education, built upon a unique relationship between learners and instructors, calls out for a qualitatively new pedagogy (Huang, 2002). One of the most attractive aspects of online learning is that it allows adults to pursue their education, arranging it around their everyday lives (Vrasidas & McIsaac, 2000). Adult learners bring their particular needs to the online learning environment. The learning theory of constructivism has been proposed as being applicable to online learning (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). Petraglia (1998) expands that thought by arguing we should make “the attempt to make learning materials and environments correspond to the real world prior to the learner’s interaction with them” (p. 53).

Knowles (1998) theorized that adults learn differently than children; andragogy, adult learning theory, has six principles. First, adults need to understand the importance of what they are learning. Second, adults are self-directed learners, meaning they take control of how they learn. Third, prior learning impacts what is to be learned. Fourth, adults need to be ready to learn. Fifth, adults prefer learning using a problem-solving approach. They assimilate knowledge better when problems are presented using a real-life setting. And finally, for adults to be motivated to learn, the new knowledge must help them solve problems they perceive as important.

Another adult learning theorist, Brookfield (1986), investigated four unique learning processes that are exclusive to adults. First, adults take control of their learning through self-direction. Then, after adults have found the appropriate resources, they can think contextually and critically about the information. Third, teaching should be based on adults' experiences, which are a valuable resource. Finally, adult development is dependent on their ability to learn how to learn. This leads to lifelong learning.

Andragogy and constructivism stress that an individual must own the learning process, through experiential learning and a problem-solving approach to learning (Knowles et al., 1998). Figure 2 illustrates constructivism as applied to adult learning. The assumptions of distance learning for adults meet the guidelines of Learner-Centered Psychological Principles (American Psychological Association, 1997)

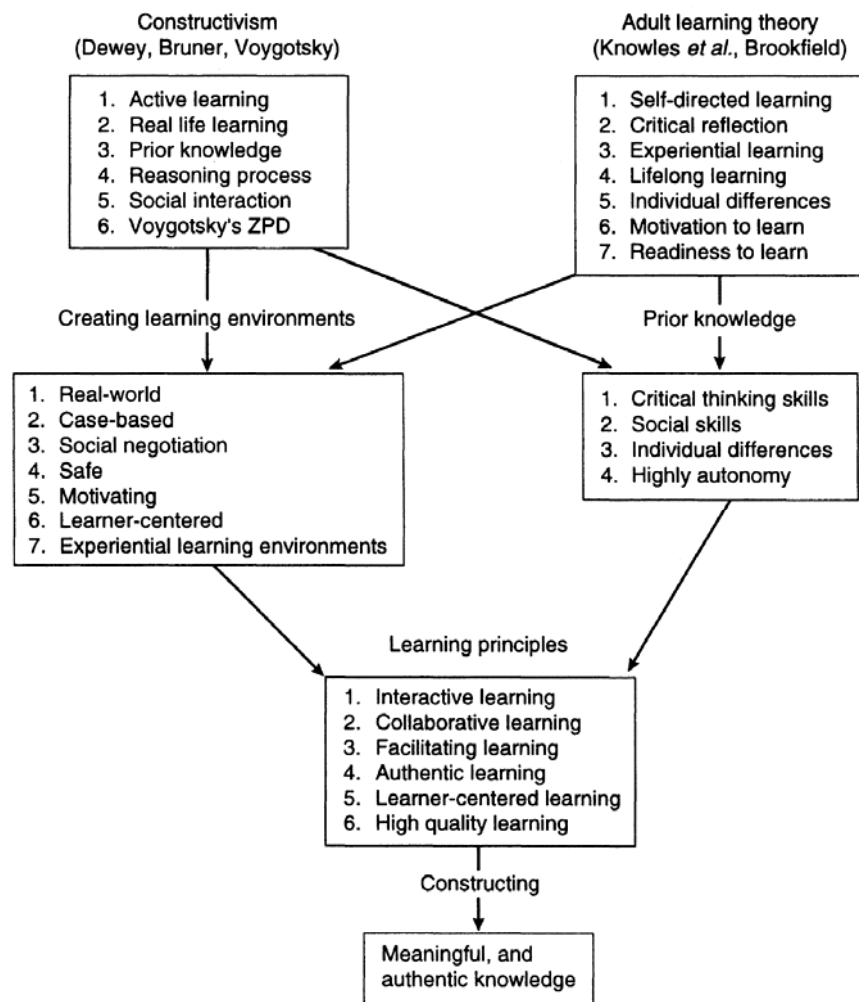


Figure 2. Constructivism applied in adult learning.

Note. From “Toward constructivism for adult learners in online learning environments” by H. Huang, 2002, *British Journal of Educational Technology*, 33(1), p. 37. Copyright 2002 by Wiley-Blackwell, Ltd. Reprinted with permission.

Learner Readiness

As the population ages, the demand for continuing education among older adults will increase. Straka and Stöckl (1998) point out that the ability of an adult to be a self-directed, lifelong learner cannot be taken for granted. For adults, a self-directed learner must learn practices, attitudes, and study strategies (Schröder-Naef, 1999). The readiness

and ability for an adult to succeed in an online learning format is furthered when there is a combination of appropriate learning environments with strategic training (Straka & Stöckl, 1998). Wickersham and Dooley (2001) reported that the learner and their willingness to be self-directed, control the difference between completion and non-completion of an online course. Online retention rates are a concern among higher education institutions. While the percentage of students who drop out of brick and mortar institutions has held steady at 40-45% for the last 100 years (Tinto, 1982), the drop out rate for online classes has been consistently higher (Diaz, 2002).

Grow (1991) posits that the ability and confidence for a student to be educationally self-directed is linked to their expertise and familiarity within a particular field. Motivation, especially confidence, is related to achievement (Keller, 1999). Bandura (1982) and Mager (1992) believe that performance depends on a feeling of self-efficacy. Online learning presents many obstacles for adults who have little else but classroom exposure for their learning environment. Adults have known from the age of five onwards, that learning equals courses, curricula, and classrooms. Most adults have had 13 years of classroom experience in school, possibly followed by four years of college courses, and then potentially back in a classroom experience again for work related learning. This experience must be overcome if new learning models are to be successful (Clark, 2002). Smith (1999) stated “With an increasingly diverse range of pedagogical methods being employed by academics, little that students have previously learned in traditional classrooms has prepared them for the era of online learning” (p. 1). Students in our culture are used to the educational paradigm of the instructor as the “sage

on the stage” (King, 1993, p. 30). In an online environment, the instructor is more of a facilitator or “guide on the side” (King, 1993, p. 30), allowing students to learn collaboratively from one another. This is a huge shift for many adult students, one in which they need to be prepared (Palloff & Pratt, 2001).

Literature has suggested that university students are developing the skill sets needed to succeed in an online learning environment, but authors agree that as universities plan and deliver their academic programs, they need to address this issue in a formal way (Oliver, 2001). Stokes, Basford, and Cannavina (2004) find that students lack the educational readiness for interactive learning media. They also report that students have the transferable skills and enthusiasm to enable the use of those skills in future learning situations.

Students new to distance learning, specifically an online learning environment, find themselves adjusting to a new educational environment supported by unfamiliar technologies (Kazmer, 2000). Students actively engaged in online learning recommend increased training for using and managing the technology in their distance program would be beneficial (Dooley, Lindner, & Richards, 2002; Kelsey, Lindner, & Dooley, 2002). Faculty have reported students were unprepared to use web-based technology and unprepared to communicate effectively via electronic means (Bozarth, Chapman, & LaMonica, 2004; McVay Lynch, 2003). Increased training in technological skills and learning attitudes might increase learner satisfaction, leading to a greater student commitment to online learning (Biner, Dean, & Mellinger, 1994).

Doctoral Study

Original thought, critical judgment, and a contribution to knowledge are crucial criteria for a doctoral student to develop her/his own *voice*. Development of that voice creates a need for doctoral students to be immersed in a research community (Wikeley & Muschamp, 2004). Designing a research study is an essential part of the successful completion of a doctoral degree. Shinn (1994) articulated that research is a creative process and a research study will have a greater chance at success when it occurs in an environment that allows for interaction among faculty and other students. It is not surprising that graduate students learn from observing and interacting with faculty, but it is important to recognize that they also have a strong reliance on their peers to make sense of their graduate school experiences (Austin, 2002). Doctoral study requires a shift in attitude and activity for most students (Brooks & Fyffe, 2004). Lipson (as cited in Elphinstone & Schweitzer, 1998) highlighted some of those shifts, stating that postgraduate study requires the student to look within to assess their hopes, fears, goals, and their ongoing experience of learning. Fanger (as cited in Brooks & Fyffe, 2004) points out that most doctoral students will be writing a dissertation for the first time and the writer may experience problems such as mild depression, panic, and tedium, not realizing that those problems are perfectly common and normal, experienced by many graduate students.

An individual becomes part of a group, organization, or community through the process of socialization. Part of the socialization process includes learning about the culture of the group: its values, attitudes, and expectations (Golde, 1998; Staton &

Darling, 1989). A graduate student experiences several socialization processes concurrently: socialization to academic life, socialization to the profession, socialization to a specific discipline, and socialization to the role of a graduate student (Golde, 1998). Golde (1998) states that graduate students face four general socialization tasks: (a) they must wrestle with *Can I do this?*, b) they ask *Do I want to be a graduate student?*, (c) as they learn about the academic profession and the specific discipline they wonder *Do I want to do this work?*, and (d) they may question *Do I belong here?* as they face the task of trying to fit in with a department.

Concern for the above issues prompted the University of Melbourne to develop a peer support network and online course for postgraduate (research doctoral) students aimed at increasing their success and allowing the students to have ready access to skills tutorials, ideas, and resources. An online community of practice environment for the place bound students allowed them to collaborate, interact, and form supportive networks. The program, *Postgraduate Essentials*, was designed to support the new doctoral students in the transition from conventional learning modes into a community of independent learners and reflective researchers (Larcombe & McCosker, 2005).

Communities of Practice

The theoretical construct of communities of practice is based on the anthropological perspective that explores how adults learn through common everyday social practices. Wenger (n.d.) defined a community of practice as “a group of people who share an interest in a domain of human endeavor and engage in a process of collective learning that creates bonds between them” (p. 1). Communities of practice,

self-organizing systems of informal learning, are different from other communities in three main ways. First, is a focus on the domain of mutual interest, as members are distinguished from other people due to their level of proficiency and knowledge. Second, members engage in joint activities and discussions. They help each other and share information as the group interacts and learns together. It is through these interactions that the group builds community, fostering relationships around the domain. Third, through sharing, the group develops a collection of best practices and uses their shared experiences to solve problems. The shared collection of experiences becomes a common knowledge base giving adults the skills they need when facing new situations. The communities stay together through shared learning and interest. Members in a community of practice participate in the community only as long as it provides them with value and benefits. In summary, a community of practice is a group of people who share a concern or a passion for something they do and they learn how to do it better as they interact on a regular basis (Gray, 2004). This definition takes into account that learning may be the reason that the community comes together or it may be an incidental outcome of the interactions of individuals.

Communities of practice encompass the technical acquisition of skills as required by a specific practice, but add the dimension of allowing the informal and social aspects of creating and sharing knowledge. Individuals in a community of practice learn to function in that practice as well as become acculturated to the community's behaviors, viewpoints, and language. Participating in a community of practice, even at its periphery, is considered authentic learning and it is through participation that members

learn *how to do* and just as important, *how to be* (Wenger, 2001; Wenger, McDermott, & Snyder, 2002).

Wenger (2004) recently has addressed the challenges particular to distributed communities (those separated by time and place), addressing issues of visibility, size, affiliation, priorities, and cultural differences. He cautions that there is no perfect technical solution and that the creation of a successful distributed community has to do with social, cultural, and organizational issues. It is suggested that there is potential for the development of online communities of practice. An online community of practice can provide a space for newcomers to become acculturated and learn elements of the practice through joint problem solving and sharing of stories.

Gray's (2004) study reported that it is possible to meet the informal learning needs of a professional association. The coordinators of the Alberta Community Adult Learning Council participated in an online community of practice designed to support informal workplace learning. The study found that through active participation and peripheral *lurking*, newcomers to the association were oriented to new skills and the culture of practice. Findings included that the role of the online facilitator is critical in sustaining the online community.

The above example demonstrates the merit of a community of practice for newcomers to a professional association. The lessons learned may apply to new adult online learners in a university setting as they transition to an unfamiliar academic environment. Figure 3 illustrates the potential benefit of using community activities on adaptation to formal distance education for new adult online learners.

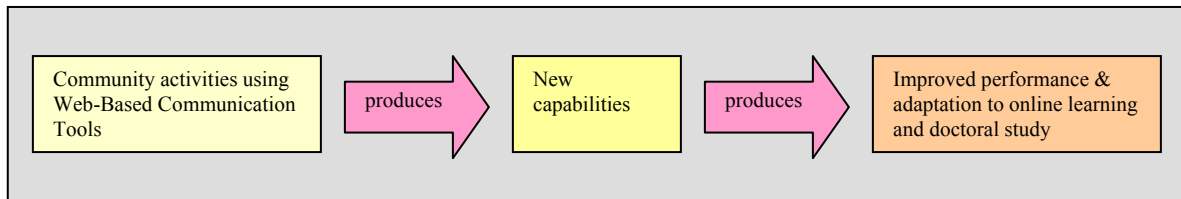


Figure 3. Causal model of community activities on new adult online learner adaptation. Adapted from Snyder and Wenger (2003).

Sense of Community

Humans have five basic needs, one of which is the need for belonging (Glasser, 1986). Being part of a community supplies an individual with a sense of identity, belonging, emotional connection, and wellbeing (Rovai & Whiting, 2005). The social phenomenon of community might be a useful concept in support of online learning (Brook & Oliver, 2005) and this application of theory is supported by the learning theories of Dewey (1938) and Vygotsky (1978) that state social interaction is important in knowledge construction. Vygotsky (1978) argues learning is not merely the accumulation of new knowledge, learning is a product of social interactions and learning is the process of learners being integrated into a knowledge community. Dewey (1938) also strongly argued for a social view of learning. The pedagogical benefits deriving from a learning community are: reduced attrition (Tinto, 1998), promotion of critical thinking skills (Fink, 2003), and making it easier to achieve learning outcomes (Gibbs, Angelides, & Michaleides, 2004).

The concept of community has been examined and discussed by many scholars over the years and there is still no standard definition. After reviewing through 94 occurrences of the term *community* in sociological studies, Hillery (1955) stated that

community is characterized by two domains: locality and/or a sharing of common interests. While it is still difficult to define community 50 years later, it is understood that community is a central component in the lives of most individuals (Brook & Oliver, 2002). Emphasizing community as a form of emotional connection that develops through social relationships is consistent with Sarason's (1974) Psychological Sense of Community (PSOC). McMillan and Chavis (1986) built upon Sarason's foundational work and define the PSOC concept as a "feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). A similar definition suggests that there is no feeling of community until the members experience a sense of trust, safety, and belonging (Furman, 1998). Several authors (Fisher, Sonn, & Bishop, 2002; McMillan, 1996; McMillan & Chavis, 1986) have suggested that common expectations, shared values and beliefs, interactivity, connectedness, mutual interdependence among members, trust, and spirit are the most fundamental aspects of a learning community.

Higher education is changing from a teacher-centered to a learner-centered focus (Dawson, 2006). Feldman (2000) calls this a transition from the "age of the individual to the era of community" (p. xiii). Due to this pedagogical transition, communities of practice, in particular the concept of learning communities, are being developed and integrated into higher education (Kilpatrick, Barrett, & Jones, 2003). This shift from a behaviorist to a social constructivist approach is also supported by Gibson (2003) when she argued that a focus on socially constructed networks with student-to-student

interaction is more in line with the current perception of effective approaches to learning. Communities of practice and learning communities are terms that have been used interchangeably, as both concepts relate to the impact that socialization has on the process of learning (Dawson, 2006). A more specific definition of a learning community is:

Learning community ... consists of the feelings of community members regarding the degree to which they share group educational norms and values and the extent to which their educational goals and expectations are satisfied by group membership. (Rovai & Whiting, 2005, p. 101)

Learning communities are also defined as “a bounded group of students involved in cooperative learning online” (Misanchuk & Anderson, 2004, ¶ 3).

When connecting to others in new situations we create a degree of interpersonal contact or simply put, social presence is defined as “the degree to which a person is perceived as a ‘real person’ in mediated communication”(Gunawardena & Zittle, 1997, p. 9). In their 1997 study, Gunawardena and Zittle found social presence to be a strong factor in predicting a student’s satisfaction with learning in an online learning environment. A more recent study by Gunawardena, et al. (2001) put forward that social presence in an online learning context facilitates the building of trust. Social presence is one variable that is important and contributes in building a sense of community among online learners (Aragon, 2003; Bibeau, 2001; Garrison, Anderson, & Archer, 2000; Rovai, 2002a; Tu & McIsaac, 2002). Aragon (2003) thinks that social presence should be the first component established to initiate learning online. Rovai’s (2002a) study

found that social presence and social quality are two factors that have a positive correlation to a sense of community.

Web-Based Communication

Technology can facilitate the growth of an online learning community by providing a gathering and communication space for its members. An effective and accessible use of technology for online discourse can foster virtual learning communities (Schwier, 2002). It is crucial for a learner to feel that (s)he is a part of a learning community where his or her contributions add to a common knowledge pool and where a feeling of community spirit is fostered through social interactions (Rovai & Whiting, 2005). In the traditional on-campus classroom, students can informally interact with each other before and after class in common spaces such as the classroom and hallways. Those chance encounters encourage informal communication and social connections that enhance the students' pedagogical experience. Meeting in the common spaces allows for casual discussion about class material, assignments, other courses, school events, and other topics that might not be appropriate during class time. Students taking online classes do not have those common spaces that allow for informal interaction and communication (Nicholson, 2002).

Learners should receive encouragement to communicate with other students outside the formal venue of the online class whenever possible (Bold, 2006). Using a variety of media to facilitate communication and deliver instruction enhances learning (Cain et al., 2003). The Internet has advanced the ability to interactively communicate, blurring the lines between time and distance. Students that participate in online

instruction can access a variety of web-based communication tools that enhance the interactivity and the social aspect of the learning process (Parker & Rossner-Merrill, 1998,)

Bold (2006) described how she used a Wiki to support collaboration among her online students. A Wiki is a set of related web pages that can be authored individually or collaboratively by a group. Using an ordinary web browser, a page is authored through the display of a simple mark up language. Collaborative documents can be displayed immediately without knowledge of HTML tags (Bold, 2006). A document can be changed using the *live edit* feature in a web browser while connected to the Internet. In contrast, a collaborative document in a course management system (CMS) requires using a word processor to save the document, the document needs to be uploaded, and then downloaded by the other authors. After they have made changes the process starts over again, with each author having to wait to make changes.

In Nicholson's 2002 study, he found that online students who used instant messenger (IM) services felt a strong sense of community and IM gave them another venue for informal social communication allowing them to share information about class material, information about school, and their degree program. IM has been shown to support online students emotional well being, sense of belonging, as well as social presence awareness (Rossade, Heins, & Hampel, 2005).

Instant messaging services comprise a small program that runs in the background on a user's computer connecting to a central hub program on the Internet. The central hub program allows users that have the same software to connect to each other. When

users are aware that a person they want to communicate with is available they can send messages to each other and respond in real-time. The IM service notifies the user when other users on their approved list are available to send messages. This is comparable to a student lounge; it is as if a student can talk to another person in the room allowing for a common space for a chance meeting with others. Some IM services allow multiple participants in each chat, even allowing two users to talk if both have a microphone attached to their respective computers. If the users have a broadband Internet connection and webcams, the participants can see and talk in real-time. Another feature of IM is that users can send files to each other without using email (Nicholson, 2002). An attractive feature of IM is that most services are free and come already installed on a computer (Miller, Jenkins-McKendrick, & Murphrey, 2005).

Web-based conferencing programs allow students another avenue to communicate in real time. These programs such as Centra[®], Elluminate[®], or Breeze[®] allow multiple participants to talk to each other, view a PowerPoint presentation, and if they have a broadband connection see a small video of the presenter. A person with a 56K dialup connection can participate using the program if no video is included. Use of the software is very straightforward. An administrator can set up a virtual meeting and then a URL for the meeting is sent to the participants. In addition, online meetings can be recorded and accessed at a later date for review. Students have reported that using a web-based conferencing system helps them feel connected to the rest of their classmates (Miller et al., 2005).

Summary

The number of online classes and complete degree programs is increasing every year. The number of students enrolling in those classes and programs is also growing. The majority of the students enrolling in online learning are adults that are seeking additional education to further their career or to change their career path. Adults learn differently than children. The learning needs of adults dictate that classes need to be designed so that adults can own the learning process. For adults that are new to online learning it cannot be assumed that they will be self-directed learners. These students can benefit from training in using the technology, training in electronic communication, and training to be confident self-directed learners. Studies have shown that students who receive instruction on how to use the technology as well as instruction in learning attitudes are more satisfied with the online learning experience.

Students that are new to doctoral study have a need to be immersed in a research community. For students that enroll in an online doctoral program, there is a need to find a way for them to be part of a group and to be socialized into their new learning environment. While studies have shown that developing a community of practice for on-campus doctoral students is beneficial, the question arises as to how to create a community of practice for online doctoral students. A community of practice allows for informal learning and for socialization that is integral to the creation and sharing of knowledge.

An important aspect of a community of practice is the psychological sense of community a person feels. A person experiences a sense of belonging when they feel

that they matter to the other members of the group and that members' needs will be met because they belong to the group. In a learning community, the socialization that occurs within the members because of their group affiliation with others that are experiencing the same events and emotions, helps make the process of learning more satisfying. For a member to feel part of an online learning community they must feel as though they have a social presence in the online learning environment.

When adults are new to online learning in a doctoral program, it is suggested that web-based communication tools may provide a common place for them to gather and communicate. When the technology is easily accessed it can help foster a virtual learning community. Will that same technology allow for a community of practice to be established over the life of the doctoral program? Is a community of practice an integral ingredient that will help online doctoral students succeed in their program of study and be satisfied with learning in an online environment?

CHAPTER III

METHODOLOGY

Research Design

This study was classified as expansion research within the qualitative research paradigm using naturalistic inquiry but it also includes a descriptive and correlational component. The purpose is not to yield the same results as previous studies; the purpose is to expand on the constructed realities and processes of previous studies and “seek initial illumination of the context of another study” (Erlandson, Harris, Skipper, & Allen, 1993, p. 45). Qualitative research is “concerned with understanding behavior from the subject’s own frame of reference” (Bogdan & Biklen, 1998, p. 2) with the researcher wishing to understand how people “think and how they came to develop the perspectives they hold” (p. 3). Quantitative research takes an objective, detached stance towards the setting of the research participants (Gall, Gall, & Borg, 2003) and in this study the quantitative data will be used to augment the findings of the qualitative component. While some researchers believe that qualitative and quantitative research is incompatible, Gall, et al. (2003) opined “another possibility is that both views have some measure of truth” (p. 26). For this study, both research paradigms are contributory in constructing theory.

Qualitative Component

Qualitative inquiry pays particular attention to meaning in context and the researcher looks for underlying meaning while gathering and analyzing the data (Merriam, 1998). A principle of qualitative studies is that “reality is holistic,

multidimensional, and ever-changing” (Merriam, 1998, p. 202) allowing the researcher to understand how the participants in a study make meaning of their experiences (2003).

A case study design was used to answer the research questions. According to Gall, et al. (2003), a case study is used to explain a phenomenon – the events, processes, persons, and/or things that interest the researcher. This study used a purposive sample, “the goal is to select cases that are likely to be ‘information rich’ with respect to the purposes of the study” (Fraenkel & Wallen, 2006, p. 483).

The natural setting for this study included all of the graduate students from Cohort III (C3) admitted to the Agricultural Education Ed.D. program in 2006. This degree program is jointly administered by Texas A&M University and Texas Tech University. The program delivers instruction at a distance, using multiple delivery technologies. The purposive sample is comprised of all 19 students of C3 residing across the United States with one student located in Canada.

The researcher designed a Wiki (editable web page) as a dedicated shared web space for the cohort to interact virtually outside of the institutional classroom. The Wiki was a private space for the students having no interaction from faculty members, with the researcher assuming the role of facilitator. During C3’s face-to-face (f2f) induction (August 2006, College Station, TX), the cohort attended a session that introduced them to the reason for the study, taught them how to use the Wiki, were given a handout that explained how to use the Wiki, and were instructed in the use of an activity to promote engagement and dialog among the cohort. During the introductory session the participants were asked to sign a Student Consent Form (see Appendix B) approved by

the Institutional Review Board – Human Subjects Research of Texas A&M University, IRB #2006-0421 (see Appendix C).

Quantitative Component

Before undertaking any measurement of community, it is imperative to understand that community is a sense, not a tangible thing and it is a member's sense of community (SOC) that needs to be identified and then measured when studying community development (Brook & Oliver, 2002). McMillan and Chavis (1986) developed a four-dimensional model to understand the SOC experience. This model posits that a SOC encompasses four discrete entities in a member's SOC; membership, influence, integration and fulfillment of needs, and a shared emotional connection.

Membership refers to the feeling of belonging and emotional safety created by being part of a defined community. Influence captures the idea of community cohesiveness and attractiveness being dependent on the communities influence on its individual members and the members' feelings of control and influence over the community. The third dimension, Integration and Fulfillment of Needs refers to the idea that common needs, goals, beliefs, and values provide the integrative force for a cohesive community that can meet both collective and individual needs. Lastly, Shared Emotional Connection refers to the bonds developed over time through positive interaction with other community members. (Obst & White, 2004, p. 692)

McMillan and Chavis (1986) suggest that all four elements work together in creating and maintaining an overall sense of community. The model was developed to encompass both geographical and relational communities from traditional neighborhoods, university settings, workplaces, including virtual settings (Obst & White, 2004).

The model theorized by McMillan and Chavis provides a mechanism for understanding SOC but it does not measure the experience. In 1986, the Sense of Community Index (SCI) was developed (Chavis, Hogge, McMillan, & Wandersman) based on the four dimensional model proposed by McMillan and Chavis (1986). The SCI has been demonstrated to adequately assess SOC reliability across contexts: $\alpha = .71$ (Pretty, 1990), $\alpha = .80$ (Perkins, Florin, Rich, & Wandersman, 1990), $\alpha = .69$ (Pretty & McCarthy, 1991) and more recently $\alpha = .80$ (Obst & White, 2004). Chipuer and Pretty (1999) stated a decade of research has established construct validity of the SCI.

The SCI was administered to the study participants over the phone as part of the semi-structured interview in December 2006. The researcher adapted the 16 statement SCI used by Brook and Oliver (2002) changing *VLC* to *Doc@Distance* (D@D), the nickname used for the Joint Ed.D. program. Table 2 illustrates how each question relates to one of the four scales of SOC.

Table 2

Psychological Scales Related to Each Adapted Sense of Community Index Statement

Statement	SOC Scale
I think D@D is very helpful in meeting my needs in flexible delivery.	Integration and fulfillment of needs
People in D@D seem to share the same values	Integration and fulfillment of needs
Other students and I want the same things from D@D	Integration and fulfillment of needs
I think that D@D has an appropriate scope in what it tries to do.	Integration and fulfillment of needs
I can recognize most of the people who participate in D@D.	Sense of membership
I feel at home in D@D.	Sense of membership
Many of the other people in D@D know me.	Sense of membership
Members in D@D welcome other members' documents and suggestions for help, etc.	Sense of membership
I care about what other members think of my actions in D@D.	Sense of influence
I feel I have influence in what happens when members work together in D@D.	Sense of influence
I feel that other people in D@D would help me if I requested help.	Sense of influence
I feel my opinions and ideas are welcomed by others in D@D.	Sense of influence
It is very important for me to participate in D@D.	Shared emotional connection
People in D@D seem generally to get along with each other.	Shared emotional connection
I expect to continue in D@D into the future.	Shared emotional connection
People in D@D seem to have similar understandings and interests.	Shared emotional connection

Data Collection

At the end of the students' first semester (December 2006), each participant was interviewed using a semi-structured open-ended interview protocol (refer to Appendix A) developed by the researcher with the SCI included in the interview, assessing their experience with the Wiki and other web-based communication tools. The personal interviews were recorded and transcribed. Respondents were coded with a unique identifier to track trends in the data to ensure confidentiality.

The researcher used web-based communication tools to conduct the interviews. The first three interviews were conducted using Centra[®] but it was abandoned for Skype[®], a voice over IP tool that allowed the researcher to converse in the same manner as a land line telephone. Initially it was thought that Centra[®] would be a good tool to use since C3 was familiar with it as they had used it for formal course work. While Centra[®] allowed for conversation in real time and the conversation could be recorded, the lag time that occurred interrupted the flow of conversation. Additionally, reviewing the recorded conversation for transcription of the interview was awkward due to the inability to rewind the conversation. Skype allowed the researcher to call each respondent on their landline or cellular telephone using software and a headset attached to the researcher's home computer. Another piece of software recorded the conversation and it was easy to stop/start and rewind the recording, proving to be more useful during the transcription of the interviews.

Following the completion of the cohort's first semester, postings on the Wiki were evaluated using content analysis to assess engagement. "Content analysis is a

technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications” (Fraenkel & Wallen, 2006, p. 483). Patton (2002) writes “Content analysis is used to refer to any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (p. 453).

Data Analysis

The constant comparative method was used on collected data to compare across categories and construct meaning (Denzin & Lincoln, 2000). This method described by Glaser and Strauss (cited in Erlandson et al, 1993) employs four distinct stages: (a) comparing incidents applicable to each category, (b) integrating categories and their properties, (c) delimiting the theory, and (d) writing the theory.

Credibility is supported through prolonged engagement, establishing trust and a rapport with the respondents. The researcher is a member of Cohort II (C2) of the Joint Ed.D. Program and was the facilitator of the Wiki allowing prolonged engagement. Triangulation, enhancing credibility, was achieved through analysis of the semi-structured interviews and the content analysis of the student postings on the Wiki. Draft copies, for peer debriefing of the findings, were sent to a department head at a separate institution, who teaches online classes and has participated in online classes. Member checks were accomplished by sending a synthesis of each interview to respondents, asking for verification of accuracy. Transferability was achieved by providing enough detail from the purposive sample and resulting thick description, so that others can decide if the findings may be applied to other situations. While naturalistic inquiry does

not attempt to generalize the results of one study to another population, some generalizations may be applicable in similar situations. Keeping detailed records of all collected data and resulting analysis achieved dependability. A copy of each interview was printed and a synthesis of the answers was provided to each respondent for verification or correction. All documents and notes were retained for inspection. Lastly, confirmability of the study was addressed by including quotes from the raw data that support the construction of theory and conclusions proposed by the researcher. While researcher bias may be impossible to completely separate out of the study, the design of this study may introduce new or unique insights that follow from certain biases of the researcher.

Qualitative research is an activity that locates the observer in the sphere of the study (Strauss & Corbin, 1990) and while a qualitative inquiry does not require distance from the data and objectivity, the researcher is aware that the dual role of facilitator and researcher may affect the participant's responses to the research questions. However, due to *theoretical sensitivity*, that limitation may be counterbalanced due to the researcher possessing the personal and professional experiences necessary to develop an awareness of the subtleties in the meaning of the data and the ability to understand the context. The researcher kept a self-reflective journal throughout the research study in an effort to explore presuppositions, assumptions, and biases allowing participant's meanings to dominate the findings.

Responses from the SCI instrument were coded True = 1, False = 0. Analysis for the quantitative part of the study include descriptive frequencies for the demographics of

the population, assessing each member's SOC, and looking for correlations among various demographic categories with a member's SOC. The researcher looked for patterns from the qualitative portion of the study to see if those patterns are supported by the data from the SCI. Data from the interview and the content analysis of the Wiki were evaluated using Wenger's (1998b; 2001) communities of practice framework. The resulting analysis was used to offer illumination of the research objectives as they concur with theory, negate existing theory, or expand on existing theory as illustrated by the literature review found in Chapter II.

CHAPTER IV

FINDINGS

This study focused on a new group of online students and how they have used web-based communication tools during their first semester in a distance delivered doctoral program. Did use of those tools help the students develop a community of practice that allowed them to help each other transition to competent online learners? The web-based tools were selected because they were easy to use, free, and could be accessed without a broadband Internet connection.

The findings are the result of applying content analysis on the transcripts of the semi-structured interviews and the postings on the Wiki. I interviewed all the participants during December 2006 with the exception of the last interview which took place in January 2007. All participants were very open and cordial. This may be due to the fact that I had experienced what they had just a few years prior and could empathize with them. In addition, I had interacted with them on the Wiki, and they had personally met me during their induction.

The first part of the chapter is a profile of the participants of the study. I can't give you personal details about each participant in order to maintain confidentiality. The members of the cohort know each other well enough to recognize the real person with the pseudonym that is designed to protect their identity. The following themes emerged to help explain them as a group and as distance learners in relation to this study.

1. Personal Characteristics.
2. Internet Access.

3. Attitudes toward Online Learning.
4. Adjusting to Online Learning.
5. Perceptions of Doctoral Study.
6. Self-efficacy with Class Content and Technology Use.
7. Personal Sense of Community.
8. Importance of Social Connections.

The goal is to communicate how they feel about distance learning, the adjustments they had to make to become distance learners, how well they understood the process of doctoral study, and their feeling of community, as it relates to learning for their doctoral program. The second part of the chapter illustrates how they used the web-based communication tools.

Participants' Profile

Personal Characteristics

The new cohort of 6 women and 13 men were inducted into the Joint. Ed.D. program during a three day on-campus visit at Texas A&M University in College Station, TX. The entire cohort, 19 students, consented to be part of the study. This cohort is unique in that they are the first international cohort inducted into the program. The majority of the students in this cohort reside in Texas, the other five are scattered throughout the U.S. and Canada. The youngest participant is 27 years old and the oldest is 51. Several of the students had recently been awarded their master's degree in 2005 but one student had been away from a formal classroom for 15 years receiving a master's degree in 1991. In order to understand the participants I present Table 3 to

illustrate some of the characteristics of the participants in this study. To protect the confidentiality of the participants they were each assigned a pseudonym.

Table 3

Selected Participant Characteristics

Student	Age Range	Years Since Last Awarded Degree
Veronica	>35	15
Mike	>35	13
Jim	>35	13
Shannon	>35	12
Dorothy	>35	9
Andrew	>35	6
Tammy	>35	6
Jason	>35	1
Kyle	>35	1
George	>35	1
Carl	<35	6
Katie	<35	5
Max	<35	4
Jeff	<35	4
Tim	<35	4
David	<35	3
Don	<35	3
Susan	<35	1
Tony	<35	1

All the students were very busy people. For their first semester in the program, they were enrolled for 6 hours of class. Some of them had new babies in their house; others had small children and/or teenagers living at home. Everyone in C3 was a working professional; attempting to juggle work and family responsibilities as well as school. Several professions are represented in the cohort; three taught at the post-secondary level, five taught high school agricultural science, eight were employed by the Texas Cooperative Extension Agency, and three were employed as administrators in their place of employment. Learning at a distance was not new to all participants. While completing their master's work, five of the cohort had taken one or two distance classes; online asynchronous, delivered on CD-ROM, delivered by video tape, and one student was able to attend a class at a distance delivery site so (s)he had face-to-face (f2f) contact with the instructor on a routine basis.

Internet Access

High-speed Internet access is a requirement of the program. Every Wednesday the cohort was required to connect to class for three hours via interactive television (ITV or TTVN). Some of the students used a web cam and Polycom PVX[®] software which allowed them to connect to class anywhere they had a high-speed Internet connection. Others in the cohort had to travel to a connection site that had all the equipment needed for them to connect to class. Four of the cohort members used the same site, nicknamed *Mission Control*, and several of the other cohort members shared a connection site with another cohort member. As such, not all students attended class in an isolated setting. Several of the cohort members traveled for their job and they carried their Polycom

camera or a web-cam with Polycom PVX[®] software as well as their laptop computer with them on trips. When they arrived at their destination, the student would connect to class at the designated time provided they had access to a high-speed Internet connection. Andrew traveled a lot for his job and has connected to class from hotel rooms and airports. Jeff also traveled and reported that he had been able to connect to class from motel rooms, unfortunately in some of the areas where he had to travel; he could not find a motel that provided high speed access.

None of the cohort members connected to the weekly ITV class from their home. Jason, who admitted to having high-speed access at home, stated that he did not use that connection for school, as he did not do his class work from home to provide some balance in his life. For the others in the cohort, they worked on class work (connecting to WebCT[®] and Centra[®]) from home and work. WebCT[®] was the CMS used by both universities and Centra[®], a web based conferencing system, was used during the cohort's first semester on Tuesdays to supplement their Wednesday class time. Several of the students lived in rural areas and only had access to a 56K dial-up Internet connection; the remaining students possessed some kind of broadband access at home: DSL, Wireless, or Cable modem. Before they started the program several students did not have a broadband connection at home. After admittance to the program they upgraded their dial-up connection to a broadband connection.

While the requirement was that the students connect to class so that they could interact with the instructor and the other students, those connections were not always

possible. At times, the ITV system malfunctioned or commodity Internet was unreliable due to weather or high traffic usage, for those times there was an alternate way to view the class, (note; I did not say interact with the class.) The weekly class was streamed live over the Internet and a student could view the class using an ordinary web browser.

Watching the class over the Internet did allow a student to view the class session so they did not miss the content that was presented, but watching did not allow for interaction with the instructor and the other students.

The classroom that was used for the Wednesday class could be reached by telephone if a student wanted to interact with the professor or the other students while watching the live stream. There was a 10 second lag time difference in the audio and video put out by the ITV system and what was heard over the Internet using a web browser. If a student was watching the live stream and called the classroom to answer a question, the instructor had often already moved on or another student had responded. While watching the live stream was not the ideal way for a student to *attend* the Wednesday class session, it was an alternate avenue to be used so the student did not miss the class. One additional feature of the ITV sessions is that they were recorded so that they could be viewed again at a later time.

Before they were inducted into the cohort the students were informed that they had to acquire the required equipment, have high-speed Internet access or be able to travel to a dedicated ITV site, which were only located in Texas. It was possible to submit assignments and use WebCT[®] and Centra[®] with a 56K dial-up connection but

obviously the process was quicker and smoother with a broadband connection.

Attending class was not always easy for the students as they had to juggle their work schedule to accommodate the class schedule. They all declared that without a high-speed internet connection at home or work or both, it would not have been possible to be a student in the distance delivered doctoral program.

Attitudes toward Online Learning

I wanted to know how the cohort felt about online learning especially since participating in an online class was a new experience for most of them. Only five of the students had taken one or two online classes for their master's degree, the rest of their classes had been delivered in a traditional classroom on campus. I asked each member of the cohort what his or her thoughts were about learning at a distance.

Carl: The program itself is very realistic, especially for those that have a full time job and cannot get away. I'm really enjoying the program right now. I realized that it would be a lot of work, just didn't realize how much work.

Jeff: For these classes it is okay. I think classes with labs won't work very well, like biology and animal science. I am old fashioned. I think when people go to school they ought to go to school. I'm being a hypocrite because I am keeping my job. I have mixed emotions about it; I think it depends on the particular case. I think these type courses,

philosophy and research methods can be done online. I think the key is access. I have had pretty decent access to both of the instructors.

Jason: I'm really okay with it. I had a bit of trepidation, just because I was unfamiliar with the technology.

Katie: I like it. I felt I would do better with a traditional f2f lecture setting. But, I like the flexibility that the program offers.

Veronica: I have loved it! I love the flexibility. Time commitment, I am doing okay. I do a lot of the work on weekends. My kids are grown so I can do that.

George: I think it is a good thing. Especially for someone that doesn't have the luxury to go and attend classes at a major university to complete a doctoral degree. This is an advantage, a luxury we have today. I think it is great!

Tim: Not bad, it really isn't. The only thing I have some problems with, it seems like there is a loss of personal communication, especially being a person who is out of state, because it actually is a little bit tough to schedule time to talk to teachers and stuff. The only other thing I will say about it, is you have to be regimented and make sure you keep a schedule, because if not, you can get behind really quick.

Dorothy: Learning with the video is the best thing I have ever done!

Technology wise I have learned so much. I have solidified a lot of

information that I thought I had down and I have learned even more.

It is just the best thing!

Kyle: I think it is good.

Max: I like it! It is new, it is different! The technology is improving all the time. It doesn't have near the downfalls that it used to have.

Jim: Well, I like learning at a distance. It is the best option for me in my life right now. Having been out of school for 13 years it is a learning curve getting back into being in a student frame of mind. When I was a student before, I was married but I didn't have any kids. Now I have a full time job that is more than a 40 hour a week job. Plus I have two under three years old. Trying to balance work and school and family is a challenge. I think I made it through the first semester alright.

Mike: I think there is an adjustment period especially for people that seem to be not as up to par on the new technology. The issue that I had personally was, I had trouble focusing on the actual instructor with some of the distractions that were taking place in the classroom when people were having sidebar conversations. All of that ended being a distraction to me so I had to adjust to that.

Susan: I am totally for distance learning. But, I think in the future if I had a choice I would be selective on the courses I took. Such as the Research class, I don't think that I should have taken that over TTVN.

I should have had a class that I sat in. It is not so much that I couldn't ask questions, it is just that the time was divided between two teachers. I needed more direct instruction for that class.

Tammy: I did not like the courses I took in my Master's program. However the technology was extremely new and the instructors were learning that they were going to have to do things differently to make it work. Because I recognized that, I suppose I was more tolerant than most people. I've always been an early adopter of technology in the classroom so that helped me as well. Now, I really like it. I think I prefer it over driving to a regular classroom if you want to know the truth.

Don: It takes a lot of self-discipline. That is probably my biggest deal, the time and the self-discipline to stay on task.

Tony: I think it is fine. I do appreciate the personal or semi-personal interaction of the videoconference. I enjoy having the flexibility and the freedom to follow up through email and phone calls, it has been helpful.

Andrew: I'm okay with it, there are some advantages and disadvantages in distance ed versus f2f in person. I don't know if there is anything that I have missed as a result of doing it online.

Shannon: Beneficial, it fits into my lifestyle. To be in an on-campus program I would have to travel 100 miles and quit my job. That isn't realistic. I would prefer on-campus but that choice is not the most realistic.

David: I like the flexibility it gives me. But, I do have a hard time concentrating without the professor there, like monitoring and making sure everyone is paying attention. It is easy to get distracted by other emails or cell phones or things like that.

As I listened to each student, collectively the cohort does like online learning. Some of the students were in the program only because they could not find an on-campus program that would accommodate their lifestyle. Being a distance student was not their ideal way of earning a doctoral degree. Attending class on-campus would be the first choice for some of the students if they felt they had that option. They think that distance learning is acceptable, but they would prefer to sit in a traditional classroom. They miss the f2f experience and immediate feedback they would get from their instructor. They also miss the ability to talk to their fellow students finding it hard to develop relationships when they can't see or talk to each other.

A few in the cohort love the technology but the main reason the cohort likes online learning is the flexibility. None of them are willing to or can afford to quit their job in order to go to school, nor are they willing to move their family so that the student can attend class on-campus. The flexibility of taking classes at a distance is attractive to the students and compensates for what they feel are the shortcomings of the delivery method.

Adjusting to Online Learning

Whereas the students like learning online, some students felt they had to make adjustments in order to function in their new learning environment. In the previous discussion, several of the students mentioned that they had to make adjustments.

Question: Has it been an adjustment for you to be an online learner and what has helped you adjust?

David: A little bit yeah. It requires more dedication and more self motivation. The Wiki helped a lot. It helped me understand what other people were going through. We had a place we could share. 'Hey I was having this problem, did you?' That helped me along and for some reason that kinda petered out about half way through the semester which really aggravated me because I was still using it. It was good having a lifeline because I can't get you on IM or I can't get you on email but I can post this question and somebody will respond to it.

Shannon: It hasn't been an adjustment to being an online student; it has been an adjustment being a student again. The adjustment is trying to fit school into my routine; scheduling, reading, getting back into the study habit. Nothing in particular has helped me adjust; I have had to rely on personal skills in order to juggle all the student aspects. Juggling the time management needed to get everything done.

Susan: Yes. You guys talked to us about it, I don't think I have really found out what is the best time for me to study. I study here and there

whenever I can get it in. I really need to do what you recommended and establish that set time for me to study. That was a big adjustment, going back and learning to study again, doing research, doing papers, trying to figure out APA. Oh my goodness, I need a class on APA. I think being at Mission Control with the other three guys, we help one another out. And not just that group but you know whenever I need something I can go to WebCT[®] and send a message out and just about everybody will respond and try to help. It is great – there is so much support.

Mike: Yes it has. One, adjusting to the technology and two, being able to transition to the new style instead of a traditional classroom setting. I can tell you two things that would have helped me adjust. One, I think having a prerequisite course in grammar, punctuation, writing, APA style, any of that would have helped me quite a bit. I just suffer and from listening to other members of my cohort they suffer from that too. The other thing, as much as people try to tell me about the time commitment, I honestly believe that I still underestimated it and even it was stated, we were told you need to carve out 15 hours per week, I still think that is an underestimation. I was almost spending as much time per week on the classes as I was on my job.

Max: It has been an adjustment for me to be a student again. I don't think it has been an adjustment to being an online student. The gizmos and gadgets were frustrating at first. I was struggling more with memorizing passwords to get into everything than anything else. Yes, the interaction with other students helped me adjust. You are doing this study on the Wiki and we got too busy half way to three quarters of the semester to utilize it the way we should have. But that interaction with students, whether it was the Wiki or Centra[®] or MSN[®] [alternate name for IM used by the cohort], those three technologies alone just allow us to interact, bounce ideas, and questions. You know, put our arm up in the air and get some help. This is crucial to get through this.

Kyle: Yes, I am used to seeing the professor and if I have a question I ask basically right then and am used to immediate feedback. I know we have that on ITV but it is hard to get the facial expressions and there is that lag time when asking questions and going back and forth. You know you've got 18 other classmates, they are all there and then the camera switches. It has been a little bit of an adjustment. If this had happened years ago, or I could have been younger would have helped me adjust. I wasn't that much up on the technology.

George: Yes it has. I love the way everything is presented. I know there are some obstacles we have to go through with TTVN and all the connection sites. I have had to get used to the delayed transmissions and the frozen screens and such as that, but for myself, it was a little bit of a challenge because I can relate better, like we are, over the phone or directly f2f. Even though TTVN is really f2f, I'm hesitant to ask a question during class that I might normally have asked if we were in a normal classroom setting. I think that is due to my fear or hesitancy due to someone else already being on and one of us would get cancelled out. I was probably the least responsive of our cohort at least as far as using TTVN. It was kind of a feeling that it wasn't worth the trouble. I think I am still adjusting but I'm starting to come around. My work can be very stressful, so that along with the classes took adjusting and adjusting work to some extent for classes. It is an adjustment getting used to doing school things on a weekend when that normally is family time. But, my family has been very supportive.

Jason: Because I teach, I am in an educational environment all the time anyway. It was not a big leap at all. No one particular defining moment that I found helpful. I do think the Wiki initially helped us all. It kind of helped us all feel more comfortable about being in the

program and trying to struggle along because of the challenges at the start. There were some other people that definitely were freaking out about the technology and posted it. It helped me feel like I wasn't alone. I think for the most part we all got through the semester, I know later on everybody got the hang of it.

Carl: For the most part it is right on track. I think the program itself makes it a little more difficult because it requires more time management as opposed to synchronous classes. I think that as far as what I was expecting from WebCT[®] and TTVN is on cue, but as far as the work involved I don't think I was expecting that. I think a number of things have helped me; initially the f2f in College Station was very beneficial. Secondly, after the Wiki was set up, that was super as far as communication. As the semester progressed, we got using MSN[®] conversations. The technology was a little bit faster and we went to Centra[®]. After the contact info page was set up on the Wiki, I'm not sure who initiated using MSN[®] but the question was posed, why don't we use MSN[®], and some included their MSN[®] contact info on the Wiki. That allowed us to add contacts to our personal MSN[®] and that way we can see who is online and if we have any questions we can ask at that time.

For some students the challenge came in becoming a student again. The fact that they were online was not the issue. Max and Shannon stated the same thought “it has been an adjustment being a student again.” They had to reestablish their study habits, relying on “personal skills” to manage their time so that they could juggle school while working full time and fulfilling family responsibilities. The answers show that the students were not ready for the rigor of doctoral classes nor the level of effort needed to do their course assignments. The students had been informed by C2 and the faculty that they needed to make time in their lives for the program. That advice was not fully understood until this cohort started classes. The time needed to do the required readings and work on assignments was more than they expected.

A couple of the students expressed concern about being able to use the technology and they found it difficult and frustrating for the first several weeks in the program to effectively use WebCT[®]. The students wished they had received instruction on how to use the CMS. They felt unprepared and frustrated as they tried to submit assignments using a CMS that was new to them. Trying to upload assignments turned into a time consuming process and added to their already difficult job of trying to find time to do all that was required for their class work. Another frustration was learning to correctly cite references using APA style guidelines as well as write in a scholarly way.

The technology used for the weekly ITV class was selected to emulate a classroom setting as closely as possible for students located in different places but it is not the same as sitting in a classroom. A student has to press a switch on a microphone

to talk and wait a few seconds for the instructor or other students to respond. Getting used to the lag time was hard for some students and a few felt intimidated by the process choosing not to ask questions during class. The students also had the expectation that using the technology would be flawless and their frustration level with the technology rose when they had difficulty connecting to class, the system dropped their connection, they experienced poor audio, or the video froze. For those that struggled with the technology, by the end of the semester they had learned how to effectively use it or they learned to accept that it was not perfect.

Perceptions of Doctoral Study

Doctoral study requires immersion in a research community. The cohort was presented with various aspects of the Joint Ed.D distance delivered doctoral program during their induction. This was their initial exposure to their new research community. I interviewed them after they had been in the program for a semester; I wanted to know if they understood that immersion into their research community would be necessary on their part to be successful.

Question: Do you have an understanding of what is expected of you in a doctoral program? Do you understand the time commitment, the process to earn your degree, the culture, the discipline of Ag Ed, the language of this level of study, and research?

Almost from the start of the interviews, most members of the cohort did not understand what I was asking. I got frustrated with trying to define each item listed above and modified the question to:

Question: Describe your level of understanding of the requirements of doctoral study, the rules, the processes, and the expectations? What is your feeling of proficiency or competence in yourself in meeting the requirements of the D@D program?

Jeff: I don't have a clue, and I'm thinking that you are gonna find that across the board. I don't have a good feel for the requirements; I am completing each task as we go along. That was one thing with not being familiar with the system and how it works, we got kinda shuffled through in our f2f and the amount of material, and I, and this is probably a bad thing, I haven't even given two thoughts to my committee to know what I need. I only know two people, Dr. [name deleted] and Dr. [name deleted]. Even the GPA that we are supposed to maintain won't be a problem for 99% of the people, but we didn't know what that was. Somebody asked the question the other day and it was addressed. So for the rules of the program in regards of the timeframes and like the dissertation, I found out the other day that it is five chapters. I am assuming we will learn more things about the dissertation as we go. I don't have a good feel for the requirements. I

am just completing each task as we go along. I think I am pretty good as far as being able to meet the requirements of the program. I don't ever feel overwhelmed.

Jason: I don't know a great deal of what is to come. I have a better idea of what is expected of me, but I still don't feel exactly sure of here is what I'll be doing and here is what is to come. I am okay with not knowing, at times I would like to be able to explain it to others better, but I am okay with not knowing. I feel pretty good right now. In the beginning I didn't have time to read everything and I didn't have a real deep grasp of things that I would like to. I feel like I am heading into the next phase with a pretty firm foundation. This is quite gratifying.

Veronica: I'm probably still learning this stuff. I don't think I could tell you what is going to happen in the next four years. I guess at some point I have to select some classes on my own, that we won't take as a group. Picking the committee, I don't know exactly what I am going to do with that. It is definitely a lot of learning. I am not uncomfortable with not knowing, they will guide us. I'll ask questions and get help. My feeling of competence is somewhat high. If I could get through the first semester with my heavy professional workload, I got it made. I am a little bit black and white. I like a lot of instruction and they [the

instructors] want us to be more self-directed. I am probably not as good at that. So I am having to adjust to that. In time I will get to doing what is expected and feeling more comfortable.

Tim: I have a basic understanding and with understanding come expectations. It is almost scary in some ways because one day you're thinking ... I don't know if this is gonna work out or not. With each new semester there will be more information to understand about the program and being a doc student. I'm very hard on myself, so I would say that I am 70% confident which is a low percentage in this ball game, but, do I think I can work my you know what off and make it, yes, I do believe that.

Dorothy: As far as being comfortable with the processes and expectations I would say that I am about a seven. I am so unclear on this committee choosing. How am I supposed to ask somebody that I met for two days in Texas to work with me on something that is so pivotal to the completion of the program?

Max: I am much more prepared and confident than I was 10-12 weeks ago. I think interaction with folks like you and those who have been there and done that, even the professors has helped. I am okay with knowing that there is a lot more information to come at us in the

future to understand all that. My feeling of competence is getting better all the time.

Jim: I am comfortable with what I understand and I feel like I will take the new information as it comes. It doesn't overwhelm me not knowing. I feel like I am capable of meeting the requirements.

Mike: I somewhat understand the process but there are still things that are unclear. On a scale of 1-10, 10 being a very clear understanding, I would say that I am at a 6 or 6.5. I am kind of a big picture guy. So tell me everything upfront so I can see how it all fits together. I prefer to know everything upfront. At the induction I was overwhelmed by the amount of information given to me, but I really think I could have handled some more information. It would have brought more clarity to my understanding of the program.

Susan: I don't want to see everything at this point. I like to be spoon fed. 'This is what you need to know now. And, this is what you need to know here.' I would get totally overwhelmed and would burn out thinking about everything. I do feel very competent, I can do it.

Tammy: I believe that the first f2f meeting outlined very well all the factors you mentioned. Being no stranger to higher education, it was no surprise to me when they described how we should start lightening our work load; make our family aware of the time it would take, etc. I

think taking methods of quantitative research in the first semester really helped solidify what would be expected in the dissertation and actually calmed any apprehension I had because there is a recipe for success. On a scale of 1-10, with 10 being the most comfortable, I say I am around an eight, I'd have given myself a 10 if I didn't have to tackle statistics again!

Tony: I think I am learning at a good pace. The understanding of where we need to go will get to where it needs to be. I have had some offline discussions with professors which has been helpful, via in person and by telephone. I would rather have all the information at once, I had to go seek out more information. I feel pretty good about my competence in completing the requirements. I would recommend some type of course or mini workshop or something for students to learn APA before they take on this type of work.

Shannon: I have a good grasp of the above. I have found that relationships are hard to build due to the distance. I feel good about my competency.

David: I don't think I am mentally prepared for what it is going to take to write my dissertation. I would have liked a little bit more information at the f2f, but the information I got was enough to make me comfortably scared.

The feeling of being able to meet the requirements of the program was very high even though some in the cohort expressed that they did not have a clear understanding of what the requirements were. At the end of the first semester some of the students are still expecting to be told what to do each step of the way, they are resistant to the idea of being self-directed and searching for answers on their own. A very big concern of many of the cohort members at the end of their first semester in the program was how to pick their committee members.

Self-efficacy with Class Content and Technology Use

Confidence in the ability to do something comes from a sense of achievement. Motivation is bolstered by a sense of confidence. Each member of the cohort was confident that they would be able to complete the requirements of the distance doctoral program. Initially when I asked the following question I used the words self-efficacy instead of proficiency or competence. I had to explain what self-efficacy meant, thus, I adjusted the question.

Question: What is your feeling of proficiency or competence in yourself in
doing the course work and using the technology?

Everybody exhibited confidence with David summing up the feeling of everyone in the cohort by stating “I haven’t had anything that was expected of me that I wasn’t capable of working on.”

Proficiency with using the technology brought about mixed reactions from the cohort. Initially, a few of the participants struggled with using the technology. They responded:

Carl: I am a very technologically savvy individual. I enjoy tinkering with the technology. I enjoy it immensely.

Jeff: Me and most of the others wouldn't have had any problems the first three weeks if somebody had shown us how to do things.

George: On a scale of 1-10, I probably started out at a 3 or a 4. I feel like now I am probably at 5 or 6. I may be behind most of the cohort but I'm getting there. It is a work in progress.

Max: My proficiency is good, I wish it was better.

Mike: It is growing each day. It was my first experience with WebCT[®] and I struggled with it at the beginning because I didn't know how to submit assignments and some of those things like uploading files to the server. That part was kind of rough at the beginning, but as I got into doing it repetitively, it seems that the confidence grew because the comfort level grew. I think I am pretty good with the technology at this point.

Susan: I need work in this area. I tried to log on to the Wiki a few times, I am comfortable with WebCT[®], the iPods, you know, for some reason I would download it but I had to have support to get things done.

Shannon: At first there may have been some reservations, but even then I had used half of the applications either with work or classes I had taken previously.

The first several weeks of the semester were an exercise in frustration for some students as they learned to use WebCT[®]. They did not have the skills needed to make submitting assignments an easy task. The students suggested that they should have been taught how to complete WebCT[®] tasks before they were required to use WebCT[®].

Another area of concern for some of the students was their lack of confidence in their scholarly writing skills. Scholarly writing in the Agricultural Education discipline requires following the APA style of writing (American Psychological Association, 2001). Using APA for the first time caused some students distress, they did not have the writing skills that the instructors were demanding they use for their assignments. One student recommended that some sort of writing course be offered before the students start their course work.

Most of the students were confident in using the technology needed to connect to class on Wednesday and complete their course work. For those that didn't feel competent, by the end of the semester their confidence had improved. All the students said that help was available when they needed it. For many, they would contact the instructor from the respective course. Some of the students were able to utilize technology support staff at their place of employment and many of the students turned to each other to get help. They would contact each other using Email, IM, they posted questions on the Wiki or in WebCT[®], and on the rare occasion they would use the telephone.

Personal Sense of Community

The literature cited in Chapter II illustrates that a basic human need is a sense of belonging (Glasser, 1986). That sense of belonging or being part of a learning community has been shown to increase critical thinking skills (Fink, 2003) and makes it easier to achieve desired learning outcomes (Gibbs et al., 2004). Sarason (1974), who pioneered the seminal work on Personal Sense of Community (PSOC), stated that a person just *knows* when they are part of a community. I incorporated the Sense of Community Index (SCI) into the interview to give credence to the students feeling of community. Unfortunately, I discovered this test two months after the cohort had been inducted. Ideally, administration of the SCI should have taken place at the time they were inducted and then again after the first semester to get a better sense of the growth of their feeling of belonging.

Every student in the cohort exhibited a strong sense of community having at least 75% *True* ($n = 16$, $M = 14.74$, $SD = 1.41$) answers on the SCI as shown in Table 4 (True = 1, False = 0). Eight students showed a very high sense of community by answering True to every statement on the SCI.

Table 4

Participant Responses to the Sense of Community Index (n = 16)

Student	True	False
Carl	14	2
Jeff	15	1
Jason	12	4
Katie	16	0
Veronica	15	1
George	16	0
Tim	16	0
Dorothy	13	3
Kyle	13	3
Max	15	1
Jim	16	0
Mike	16	0
Susan	16	0
Tammy	16	0
Don	12	4
Tony	16	0
Andrew	14	2
Shannon	14	2
David	15	1

Note: True responses indicate a strong feeling of community. False responses indicate a weak feeling of community.

Table 5 illustrates how the cohort collectively answered each statement on the SCI. The area that showed the least agreement was a feeling that not all students wanted the same outcome as a result of being in Doc@Distance. A few of the students elaborated on their answers when they returned the transcript of their interview. Jason stated, “Some, like me want to be teachers and researchers, others have no interest.” Max agreed, “I have a goal to be a college professor – not everybody wants the same thing.” Tammy does think the cohort wants the same thing, she wrote, “A diploma!! And the opportunity to work with and learn from great people.”

Table 5

Collective Responses to the Sense of Community Index (N = 19)

Statement	True	False
I think D@D is very helpful in meeting my needs in flexible delivery.	19	0
People in D@D seem to share the same values.	16	3
Other students and I want the same things from D@D.	11	8
I think that D@D has an appropriate scope in what it tries to do.	19	0
I can recognize most of the people who participate in D@D.	18	1
I feel at home in D@D.	18	1
Many of the other people in D@D know me.	17	2
Members in D@D welcome other members' documents and suggestions for help, etc.	18	1
I care about what other members think of my actions in D@D.	19	0
I feel I have influence in what happens when members work together in D@D.	17	2
I feel that other people in D@D would help me if I requested help.	19	0
I feel my opinions and ideas are welcomed by others in D@D.	17	2
It is very important for me to participate in D@D.	19	0
People in D@D seem generally to get along with each other.	19	0
I expect to continue in D@D into the future.	19	0
People in D@D seem to have similar understandings and interests.	14	5

Note. Adapted from Brook and Oliver, (2002).

I wanted to examine if relationships existed between some of the characteristics of the cohort and their PSOC. I transformed the sixteen statements of the SCI into one additive index resulting in a Cronbach's alpha of .54 and then correlated that index with

the variables of IM use ($M = .37$, $SD = .50$), gender ($M = .74$, $SD = .45$), age ($M = 36.74$, $SD = 6.71$), previous online courses ($M = .26$, $SD = .45$), perform class work at home, work, or both ($M = 1.53$, $SD = .84$), and broadband availability at home ($M = .74$, $SD = .45$). Running a bivariate correlation on these variables showed no statistically significant correlations, $\alpha = .05$ set a priori, as seen in Table 6.

Table 6

Correlations between Sense of Community Index and Selected Participant Variables

Variables	SCI
Use IM to interact with cohort members	.18
Gender	-.20
Age	-.28
Previously took an online class	.03
Perform class work at home, work or both	.41
Broadband access at home	.06

Importance of Social Connection

One important ingredient missing in a distance student's experience is the ability to gather in the hallway before or after class and talk about whatever students want to discuss. A distance student cannot go out with other students after the class to study or socialize. Distance students cannot make a date to gather with other students to study or work on a group project. The distance student does not have a *place* that will encourage

social connections with the other students. They do not have the same opportunity as an on-campus student for informal communication. This important ingredient is supported by theory as Vygotsky (1978) proposed that social interaction is very important in the learning process.

The participants in this study are adults that value the flexibility of the doctoral program they are enrolled in. Do they care that they may not be able to have a social connection? Is that an aspect of learning that isn't important to them and they are willing to forego so they can reap the benefits of their distance delivered education? Some of the students in the cohort strongly expressed that it was important, while others were absolutely certain that a social connection was not. I asked the students if they thought an informal social connection was important or necessary for them to be successful in the Doc@Distance program. I followed up by asking if an informal social connection helps them learn. Some of the students agreed:

David: I don't think it is necessary, but I value it. It adds a human face to the fact that I am doing my coursework online and seeing the teacher on the TV. Having a way to know that one of the students is raising a certain type of cows in Iowa that helps. Cuz then, when I am expecting him to reply back to me I understand that he is running a cow operation, he is a teacher, he has three kids, it helps to understand what is going on. Yes, through email and through the Wiki when it was active we were learning outside of class. We were doing the same

thing on the Centra[®] study sessions. We all came to a greater understanding. Coming off of my notes I would not have made as good a grade if we hadn't shared in those study sessions.

Shannon: I think it is important. Interaction with other people builds relationships. Those relationships are useful for building trust; you learn who you can count on. Can you count on the other person to follow through and do what they said they will do? The relationships are also good for formal teaching and working with the professors. Without the informal connection how are we going to know if people are going to follow up with what they are supposed to do.

Andrew: It is important but not necessary. Relationships are important when doing group work. There has to be a certain level of trust that the other group members will follow through and they need to know that you will follow through. There is an expectation that has to be met for the group work to be a productive activity.

Tony: I would say that it is helpful and it depends on the individual. For me it is important.

Tammy: Yes, for me I think it is needed. I don't want to feel like it is just me and one professor. Learning informally is definitely important; we are the sum of our experiences.

Mike: I would say that it is important but not necessary. I feel that we need an opportunity to bond with these people. We are going through a lot

together and I think that sometimes you can share experiences and it helps other people get through.

Jim: I think we all need to help each other when we can. Nobody is going to be an expert in every subject. Somebody is gonna slip a little bit and say 'Hey I didn't get that.' We have all had a time when we didn't get a handout or couldn't download something or 'I missed that one, could you send it to me.' I think we are all going to need it at times or with different subjects. I think it would be horrible doing it in a vacuum with no interaction.

Max: Yes – it really helps me to know that others face the same problems I face and that our lives are similar. For me personally I think it is necessary. I am a social creature. If I had to sit and get all this information off even MSN[®], I have learned how to read people's personalities in what they type. I like the voice interaction of Centra[®], and I like the voice interaction of the f2f [ITV] and I love to get together with everybody.

Dorothy: Yes, I think it is necessary because people are social butterflies. I think that people that get this far in their education are people that are not good at being by themselves. I think that people pursue such a high degree and expect so much out of themselves to receive this degree, they need the social interaction. They need to know that there are people out there doing what they are doing. Maybe struggling at

the same time or being successful at the same time and I think it is necessary. I was able to help on a topic during a Centra[®] session when the instructor couldn't be there. I received emails over the next several days and was able to help. It makes you feel good and strengthens your knowledge of what is happening.

Tim: Since needed is different from necessary I would say yes. I think it allows people to bond more. But if I had to say is it absolutely necessary, I would say no. It is important to me, but not necessary. It allows you to bond with other people, plus it allows you to feel that you know what is going on. Some of these classes are going to have group projects so if you can kind of pick – I'm more like these people – you will more than likely stay with those people.

George: Hmm, that is difficult. I would say it is important but it is not needed. Even though I do correspond a lot by email, my typing skills leave a lot to be desired. I do very little text chat because I am not a fast or proficient typist. The other cohort [C2] there seems to be a camaraderie where everybody is helping everybody and I really like that. We all have different talents and abilities and it is very helpful and it all works out well.

Veronica: I think it definitely helps. It makes it more enjoyable and probably easier on all of us. It helps my understanding. I think it is important and necessary. Sometimes I could understand things when explained

by somebody else [other than the instructor]. I even use people out of your cohort.

Katie: I think it is important but I don't think it is necessary. Being part of Mission Control enhances the feeling that learning happens in an informal way. There is bound to be one of the group that understands things the way they were presented and they can explain in a way the rest of us understand.

Jason: I think it has a warming effect. It is early to say, but I feel that working in groups has contributed to whatever success I have had so far. I do feel that a social connection helps me learn. It has been pretty limited exposure that we have had so far. My only real social interaction was at the start of the f2f sessions in College Station and then our group work.

Carl: Absolutely! In fact after we set our group up, we were thinking it would be easier to do our paper and presentation and found out it wasn't so easy. But it did give us the opportunity to connect and make some connection outside of the actual TTVN. I think it is needed and necessary. It allows us to not only draw from our experiences but from the experiences of others.

Not everybody agreed that an informal social connection was important. During the interview with the following three individuals, it was hard to get them to expand on their answers. Kyle, Susan and Don briefly responded:

Kyle: No. I think that I can learn informally in specific contexts. The pre-exam study sessions were helpful but I don't need to have a close bond with the people for the session to be good.

Susan: No. A social connection can be helpful to learning. Even with Mission Control, I think everyone in this program is probably overwhelmed with family, work, and other activities. So for us really to be on that level it is kinda adding on another element to that. So I am thinking, my opinion is that we respect one another, we interact with one another only when it is needed. That is because of our commitments.

Don: Probably not.

Could the lack of desire for a social connection be a personality trait? During the cohorts' induction, they took a fun personality quiz, Understanding Yourself and Others Personality Profile (see Appendix F) after supper their second night in College Station. The students self-scored their responses. The first step was to take the quiz which had 27 statements and the person was to select the best word or phrase that described their behavior style, each statement had four possible choices. To score the responses, he or she would use the Profile Summary Sheet (see Appendix G) to assign a color to their response from the quiz. Each answer had a Red, Green, Blue, or Yellow column. When the respondent had scored the quiz they were to add up how many responses they had for each color. The totals were used to define a person's personality (see Appendix H). Both Don and Susan were *Green* and Karl was *Red*. It is understandable that Karl did not think a social connection would be important as Red's are very impatient and conversing

with cohort members took time away from other tasks. Whereas Don and Susan, both being Green, are very task oriented individuals and again socializing may take them away from tasks they deem are important. This is a cursory finding as the rest of the cohort encompassed all the colors and had traits similar to Susan, Don, and Karl, yet the others thought a social connection was important.

Summary

A composite snapshot of the cohort shows that the members of the cohort were adult learners and new to online learning. The group was scattered across the United States and Canada, they were busy professionals with families and they had access to a high-speed Internet connection at home or work. The group liked online learning although they had to make adjustments in order to be a student again as they had been absent from a formal classroom from 1 to 15 years. The group had some understanding of what it means to be a doctoral student but realized that more details were still to come. The students were confident in their ability to do the work that is necessary to complete their program and most felt competent in using the technology needed to earn their doctoral degree at a distance. The cohort felt a strong sense of community within their group. Most of the students felt that an informal social connection was beneficial to their efficacy in the program. Even though all the students had access to the web-based communication tools to interact with each other, three students felt isolated until they participated in a group activity for one of their classes. After they were involved with the project, the three students increased their interactivity with the remaining cohort members.

Use of Web-based Communication Tools

The idea behind using web-based communication tools, especially the Wiki, was to provide the students a *place* to gather. Would this place help build a community of practice (COP)? The Wiki was set up so that only the cohort members and I had access to read what was posted, post and answer questions, and upload documents. The Wiki was only for the students; I thought they would like the ability to interact and not feel like they had to be guarded in how they posted with respect to faculty members or the program. The Wiki was meant to be a technological solution to help the cohort work together as a COP.

Wenger (1998b; 2001) stated that there is no perfect technology solution to use with a distributed COP but some tools may be useful. A COP is composed of three crucial characteristics. First, there is a focus on a domain of shared interest. In this case, that domain is the doctoral program in Agricultural Education. Second, as members of the community pursue their joint interest in the domain, they participate in joint activities, they hold discussions, they help each other, and they share information. It is through those interactions that community is formed around the domain and relationships are built. The third characteristic is that members of the community develop a set of resources that they share: experiences, stories, tools, and ways to address problems – in other words a shared practice of operating within the domain. It takes time for this to occur.

The themes of this section include:

1. Wiki.

2. Instant Messenger.
3. Centra[®].
4. Usefulness of Web-based Communication Tools.

The sections will demonstrate how the cohort used the Wiki, their use of MSN[®] Instant Messenger (MSN[®] or IM) and Centra[®], a web based conferencing tool, and their feelings on the usefulness of the tools.

Wiki

I chose to set up a Wiki as seen in Figure 4 to allow the cohort to have a dedicated web-space where they could ask and answer questions about the program, their classes, or any topic they might need help with, have a space to store documents, and to allow a way for them to socialize with each other. The use of the Wiki would allow for activities that are integral to a COP (Wenger, 1998b, 2001; Wenger et al., 2002). It could be a repository for documents the cohort wanted to share, they could hold a discussion about class work or any topic of interest, they could post pictures and videos, and it was free for them to use. For students that did not participate in the discussions, they were still able to lurk (read but not post) and learn. Ideally one person could post a question that might be of interest to many in the cohort. A question would only have to be answered once; it would remain on the Wiki and be helpful to all. The Wiki was a tool that was selected because I believed it would be easy for the cohort to access; all they needed was an Internet connection and a web browser. The Wiki could be accessed and manipulated with a 56K dial-up Internet connection. A broadband connection was not required.

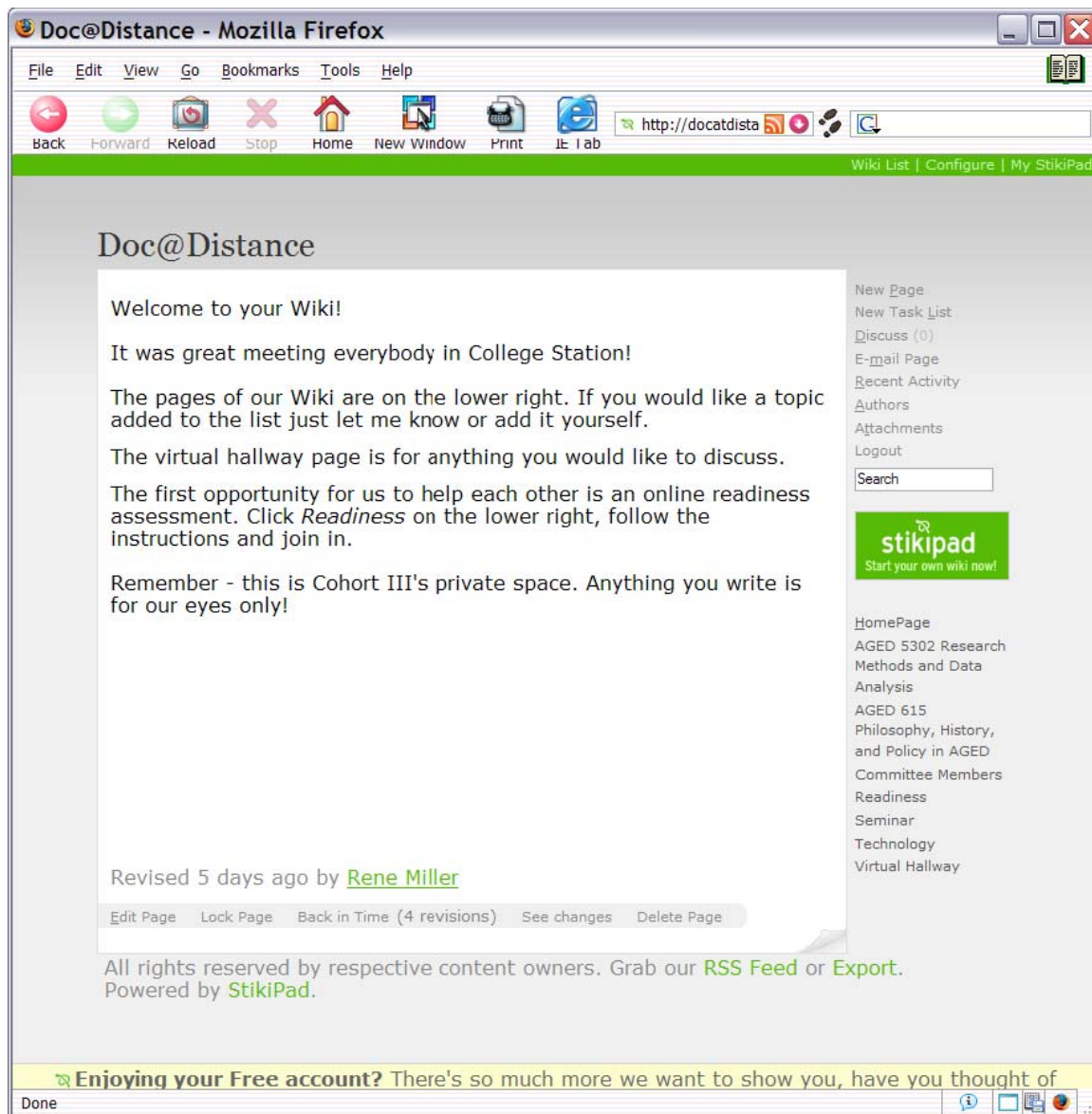


Figure 4. Wiki welcome page.

All of the students were sent an email generated by the Wiki host inviting them to be authors. They had to accept the invitation if they were to participate in the Wiki. No student declined the invitation although some students had to be sent the invitation several times due to spam blockers on their end intercepting the email. I had to send the

email from my university account for the email to finally arrive in the participants' inbox. The students could set their own password for the Wiki, allowing them to use one that was familiar and hopefully easy to remember. The Wiki had pages for each of the two courses that the cohort were taking their first semester as well as pages for other topics such as selecting committee members, technology, and a virtual hallway for discussion about any topic. The Wiki allowed documents to be uploaded so that the cohort could share resources and work collaboratively on projects. A dedicated discussion thread was available for each page of the Wiki. Students did not have to check the Wiki to see if new postings had been made if they set up notification when they signed on as authors, they were sent an email notice when something on the Wiki had been changed. I emailed everyone in the cohort to be sure they knew how to set up email notifications as I thought that was a very useful feature of the Wiki. They received an email for each new post within a few minutes of the post being made.

To encourage use of the Wiki, I asked the participants to take an eLearning Readiness Quiz (see Appendix D) during our f2f session at their induction. When they had completed the quiz they were to use the eLearning Readiness Score Sheet (see Appendix E) to assess their readiness for eLearning. The Wiki had a *Readiness* page for the cohort to discuss their results. I started the discussion with a question, "Without giving your scores for any particular area of the self-assessment, which areas did you identify as those in which you could use some additional study strategies or other preparation?" Only one student took the quiz and posted a comment in the discussion

area. One other student responded but the discussion died at that point. During the interview I asked the students why they did not complete the quiz and most responded that they forgot about it or they did not find it a useful exercise. They had been bombarded with so much information during their induction, the eLearning Readiness activity was a detail that was easily forgotten. For those that chose to ignore it, they were not interested in doing an exercise that was not graded; they saw no value in doing an extra activity.

Regardless of the lack of participation in the eLearning Readiness Quiz, several of the students started using the Wiki on August 22, 2006, the day the author invitations for the Wiki were sent out. The first few posts on the Wiki blended together, making it hard to distinguish where the original post ended and the next post started. As facilitator, I was learning the best way to use the Wiki at the same time as the cohort. I encouraged the cohort to place their comments at the top of each Wiki page instead of the bottom so people did not have to scroll to see the new posting. I also recommended that new posts use either a different font and/or color to differentiate their posting from previous posts by other authors, making it easier to follow individual posts as seen in Figure 5. When someone wanted to add a post to the page they selected *Edit Page*, a link at the bottom of the page they were viewing. That link opened a new web page with formatting tools similar to those found in a word processing program (Figure 6), making it easy to change the style, color, and type of font so that each person posting could individualize her/his post. When the post was done the student would click *Save Page* and their post would

appear on the original page for everybody to read. The cohort also started adding their name or initials at the end of a post to identify their contribution.

Wiki List | Configure | My StikiPad

Home Page (Rev #7)

Howdy! If you are not receiving emails telling you that the wiki has been changed, select [Authors](#) on the right and then at the top of that page select [Notifications](#). Fill in the email address that you would like the notifications sent to. Thanks all ~ René

Hey all, I am playing with the Wiki trying to figure out the best way for you all to respond to each other. This is just a suggestion; after you open a page to edit it, place the cursor at the top and type. Maybe it will be easier on us to know that new posts are at the top of a page. You can always start a discussion using the discuss link at the top right too. ~ René

Welcome to your Wiki!

It was great meeting everybody in College Station!

The pages of our Wiki are on the lower right. If you would like a topic added to the list just let me know or add it yourself.

The virtual hallway page is for anything you would like to discuss.

The first opportunity for us to help each other is an online readiness assessment. Click *Readiness* on the lower right, follow the instructions and join in.

Remember - this is Cohort III's private space. Anything you write is for our eyes only!

New Page
New Task List
Discuss
E-mail Page
Recent Activity
Authors
Attachments
Logout
Search

HomePage
AGED 5302 Research Methods and Data Analysis
AGED 615 Philosophy, History, and Policy in AGED
Catching up in the WIKI
Committee Members
Contact Information
Inside-Dodd's Mind--
A short Story
Linder's Chapter Nine Review--by Dodd and Miller
Personal Stuff...
Philosopher
Assignment
Readiness
Research Evaluation
Assignment
Research Methods
Exam
Seminar
Technology
Virtual Hallway

Figure 5. Color increases readability.

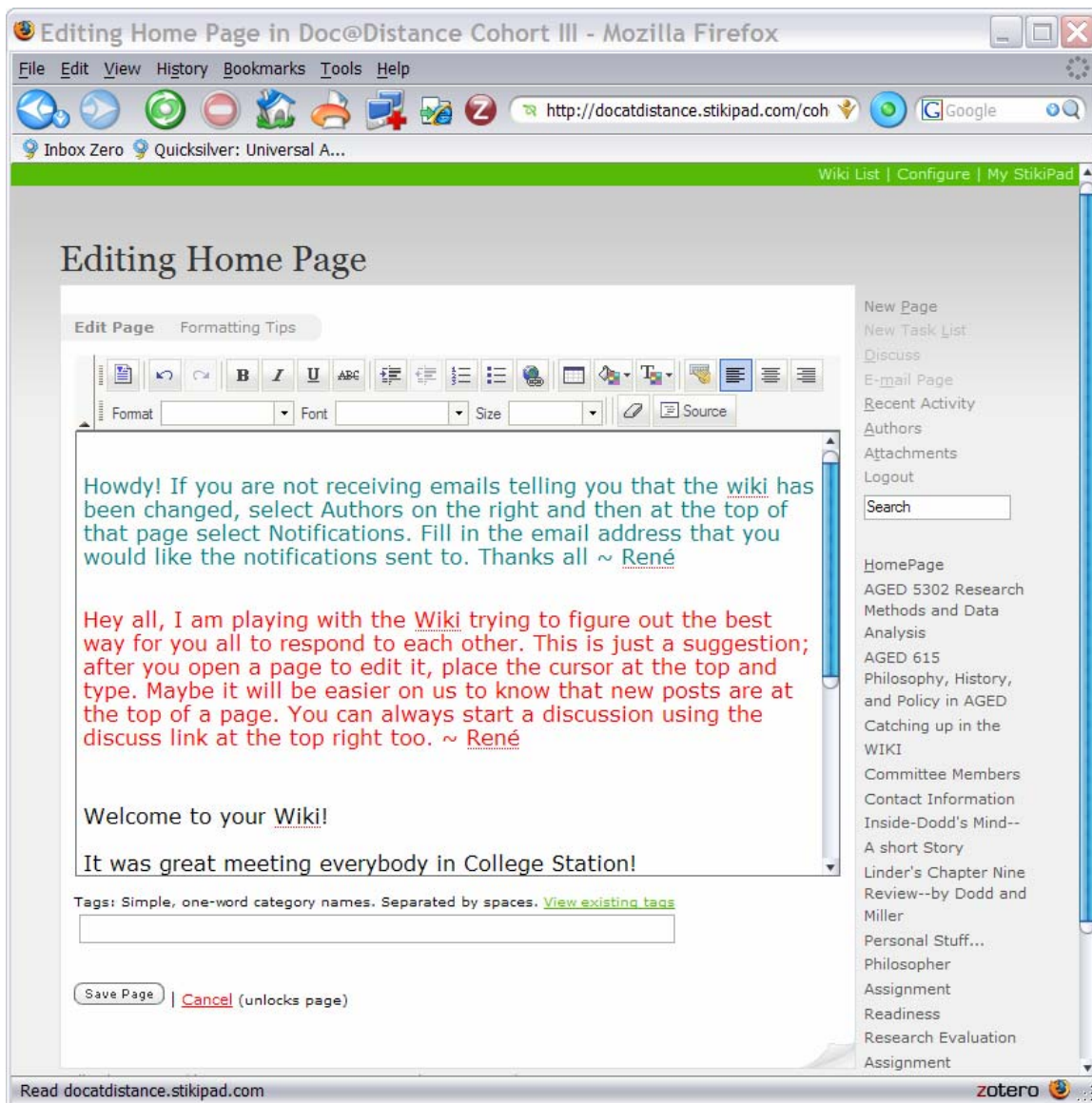


Figure 6. Standard formatting tools available on a Wiki page.

A total of 174 posts were made on the Wiki. All but three students posted on the Wiki at least one time. Five students (one female) wrote 84% (146) of the 174 posts. I acted as a facilitator on the Wiki, posting 20 times in response to questions or comments from C3. I thought that I shouldn't be too present on the Wiki, that the best way to judge how useful it was would be to allow the cohort to post topics that were important to

them. I didn't want to jade their thinking or activity. Even though I had been a new inductee to the program three years earlier, my concerns then, may not be the same as their concerns now. Activity on the Wiki stopped on October 20, 2006. I waited for a couple of weeks to see if activity on the Wiki would start again before I posted on November 11, 2006, followed by the final post on the Wiki:

René: Hey everybody! I haven't heard much lately and I hope school hasn't killed you all. If I can help or you can think of ways to help each other, holler!

Post: Hey Rene, I think we've converted to the IM and Centra[®] world if you want to know the truth. Seems like we're answering our questions faster these days that way.

During the time from August 22, 2006 to November 11, 2006 the Wiki was used to discuss classes, tests, assignments, and committee member selection. The participants shared aspects of their personal life as well. The Wiki was never utilized with the sharing of documents or collaboration on group projects. When cohort members shared documents, they did so through email.

The Wiki was useful when two students kept getting kicked out of the Wednesday ITV session. I will not use names to identify who posted on the Wiki as confidentiality may be breached and the student may be identified by what they posted with their pseudonym. Two different students posted and I responded:

Post: Hi all! I got kicked off Wednesday 3 times...every hour my software states that the session time has ended and asks if I want to continue. If I don't catch it in time...I get disconnected.

Post: I have the same problem with the session ending (relatively) unexpectedly.

René: At the top left of the Polycom software there are three icons. Select the one that looks like a wrench...set the time to zero (0)...click apply. The next time you connect to class the software will not disconnect you.

Students would ask for clarification on assignments:

Post: I either missed something last night or wasn't paying attention, but can someone give a brief synopsis of the assignment? I am a little confused about what we are supposed to be doing.

Post: Honestly, I found it a little confusing too, it may be more clear when he finally gets to the meat of everything next week (I hope).

Another time a student could not attend the Tuesday Centra[®] Session and posted:

Post: Could someone please, ever-so briefly, summarize what happened on Centra[®]? I was stuck in a visioning meeting?

Post: Ok, here goes,

1. [name deleted] created an assignment folder to submit your philosopher pwpt on;

2. your 2 page summary of your philosopher should be posted on his wiki (if you can't figure it out he can do it from a word document you send him) include any links to info you want;
3. he needs the last person to choose their philosopher so he can divide the class into 2 groups for due dates—[name deleted], you'll be in the second due date because yours is the most recent;
4. you don't have to worry about APA notations on the pwpt but should have them on the 2 page summary;
5. the lessons are on pod-cast now;
6. a suggestion for clarifying your philosopher is to contrast them with their biggest nemesis;
7. [name deleted] will send new files tomorrow so get them before class;
8. he'll have the questions the residents are using for the research with the files tomorrow;
9. he's putting everything modules for pod-cast format so you can download them too;
10. look at the materials because he wants us to make a list of possible research areas for the class on 13th but he'll give more info tomorrow night.

I think that is all. If anyone else can think of something please add it because I probably didn't write it down.

The discussion was available for anybody that needed a rundown of the Centra[®] session, allowing students to lurk and learn. Many of the students noted that they did go to the Wiki and read what was posted and that it was helpful to them. This is one example of a discussion that took place on the Wiki. The discussions contained information that was available for the entire cohort if needed. The students shared where they found text books for their classes. They would support each other when doubt set in and they calmed each other's nerves before and after tests. They discussed:

Post: Anyone starting to worry about this mid-term besides me? If you haven't guessed, philosophy isn't my thing, so I'm starting to get worried about it.

Post: Yes I am worried but you have a good head on your shoulders and it will also be open note/book whatever. And I hate to say this and good thing this is our wiki but if you need help or something you can send a chat invitation.

Post: You're always so positive, thanks. Open note or not, I figure it's not going to be a test where that will be much help. I'll feel better after the 1st one I'm sure.

Post: Just an FYI: remember to review your answers before you submit.
Apparently, the scroll-wheel can and does act on a radio button

group... If I would have reviewed my answers I wouldn't have gotten 2 of them wrong. So, check your answers then hit finish... thankfully, it only ended up dropping me by 0.5 points, but out of 10 that almost cost me a letter grade!

Learning to use the online library was a struggle; again they helped each other by posting:

Post: I want to use the online library resources from Tech and A&M, but I am having difficulty getting past just the catalog cards of what they have.

Post: I just had the nicest live chat with a librarian who walked me thru how to use the library at a distance. You've probably already signed up for a "my portal" with a user name and password. So, once you get to the library main page (I got there from the TAMU webct page) on the left is a Lib Cat? Tab, click on that and it will take you to the search page, type in what you want and it will give you books on your topic. I suggest narrowing the search as much as possible because I got nearly 500 the first time. Most of those you'll have to get delivered thru e-docs if you haven't signed up yet. Back on the home page there's another tab for subject guides, it gives you a list of databases to search (from the home page) categorized by subject area. I hope that helps.

René: I encourage you all to become intimate with the online library. My favorite is TAMU, they offer more than TTU. If you order a book from them they send it to you and provide a return label so it doesn't cost you anything to ship it back. This link is a video tutorial on how to use the library.

<http://library.tamu.edu/portal/site/Library/menuitem.9df7929e030c162ebd078f3019008a0c/>. I encourage you to view *all* the sections. The better you learn to use the online library the less frustration you will have. I asked a TAMU librarian once if there was any need to physically come to the library and she said, 'no, not if you learn to use all aspects of the online library.' Holler, if I can offer my strategies for using the library.

The students had a discussion about their philosopher assignment with 15 different posts revolving around the assignment and how they were all feeling the same frustration with philosophy. They helped and supported each other:

Post: My first time coming on here. Good information. I see that I am not the only one struggling with this assignment.

The same helping attitude carried over to the research evaluation assignment they had for their other class, that discussion had 12 posts. A student posted "Anyone have any thoughts on what is expected?" There were six posts in response to his question.

One of the students started the *Catching up in the Wiki* page. On this page they talked about their homes and remodeling that they had done, they talked about photos

that they uploaded into the documents area of the Wiki, two talked about music, and all did a little venting about being distance doctoral students in an online program:

Post: Boy did you say a mouth full! I think we're all a little frustrated right now because we're all people who like good set parameters. The problem is they aren't giving any.

Post: We *WILL* survive this semester. It may now seem like a distant memory/nightmare, but at some point in our collective lives, we've been through much worse than this.

Post: Based on the comments I have read tonight we all need to be here [the Wiki] and not all of us *get it* as fast as others.

The Wiki started out with six pages; eventually the cohort members that used the Wiki added an additional 10 pages. Why didn't some students use the Wiki?

Carl: In the beginning I thought *Man this is great!* [emphasis added]. I think technology has allowed us to increase our speed in relation to the Wiki.

Jeff: I did get a log in name and I was logging in sometimes once a day, sometimes once a week, I never felt like I had anything to add. Basically if I have a question about class I'm gonna call somebody or send an IM. There really wasn't that much information that was necessarily helpful to me. I do use IM and am on all through the day and we do share real frequently.

Jason: I think it was because Centra[®] started to address some needs. It started to fill a gap that the Wiki couldn't. You get an immediate gratification on Centra[®] and because neither of the instructors were on the Wiki either. I can't say that I purposely avoided the Wiki, I just find that I wasn't drawn to it later on. The Wiki had broad communication about the technology. Plus when we started to work more in groups I think a lot of the communication was more among our group members with whatever corresponding time we had either using email or Centra[®] sessions.

Katie: It [the Wiki] was helpful, especially in the beginning when we didn't know what was expected. I loved the Wiki but there was so many places we had to go for information and it added one more thing for us to click in and it was like CRAP!! It was too much. With Centra[®] and WebCT[®] and everything that was going on we were trying to find assignments and stuff and everything at one time, it became overwhelming.

Veronica: The main reason for me was time.

George: It [the Wiki] was new. I was more familiar with email. I would look at the Wiki but if I corresponded it was through email. But every time someone put something on the Wiki, I was notified with an email. I immediately went to see what was there.

Tim: Okay my theory, I would say that people got in a groove of what they had to get done and the Wiki was one more thing trying to take up their time in getting stuff done. We decided that we were better off just emailing each other. I also think why we got off is we were getting so involved in our studies, we didn't have time to goof off on the Wiki. It was great when one student and another put up personal stuff, but I thought this is business. I don't have time to jot my whole life story down, sorry guys.

Dorothy: I liked it and I would read a lot of what people had to say and a lot of times I didn't post because I got on there with a question, just something I wanted to ask my fellow cohort members, and as I read through I got my question answered. I did post a few things. You said it started to dissipate like the middle of October, that was right about the time where all that pressure hit, big fat presentation, philosophy paper, research midterm exam, and I forgot about the Wiki because I was concentrating on assignments and things that were going on. I have visited a couple of times since. Since I didn't see any activity I haven't added to the Wiki.

Kyle: I got one or two reports from the other guy I call and a lot of it [postings on the Wiki] was just chit-chat and talk. I didn't have much time for that.

Max: I wish we could have used it more for our group presentations. I think if we had started the semester with group presentations instead of finish the semester with them we could have really, really utilized the Wiki for a greater good. The thing with MSN[®], the discussions are gone or the discussions are so off topic from time to time you spend more time editing a MSN[®] chat than anything else. Where with the Wiki you could post the meat to the Wiki and know that it would be there. I think we missed that concept all together.

Jim: I think a lot of times if I had a question or issue I would just email instead of use the Wiki. I hate to check multiple places and I had most everybody's email address.

Mike: I think everybody got so overwhelmed with the workload. You know trying to do your regular 9-5 job and then school work. The Wiki became one more thing that you had to check. The Wiki was something we could voluntarily drop and not have consequences or repercussions. You couldn't stop going to check WebCT[®], because you had to go there to look for new assignments and new postings and different stuff. The Wiki became too much on the plates of most people.

Susan: Why? I didn't go in as much, for some reason one of the students [name deleted] always would let us know what was on there and it is was something we needed, she would say 'you guys need to go to the

Wiki. René has posted such and such.’ When there was a need or specific reference or something that we needed (s)he would send out a mass email.

Tammy: I think as we went along – I know some of them didn’t like it because if they made a comment it stayed there. I did get some emails about that. So that was one thing. Those of us who used it, we liked it because it did stay there. If I had a question, somebody might have already covered it or if I had that question, probably somebody else in the group did too. So we had kind of extremes there. I have decided that I am a social learner. I like the interaction of classmates, exchanging thoughts and ideas. I don’t know that I ever thought that before. The Wiki was a good place to start for us to ‘socialize’ our questions for class. I know that the Wiki is really intended to be more of a log of information about various subjects, but we used it more as posted emails, I think. We should have used it more like a discussion board and it might have gotten more people involved. Initially the Wiki may have served a purpose to get us used to each other and we found other modes of communication. Because it was not instantaneous, you couldn’t use it during class or a Centra[®] session. We are a society that wants things automatically. So once we got used to IM and Centra[®] you could see the use of the Wiki dwindling off.

Also that was the time when out-of-class work had built up and demanded more from us.

Don: Phone is my preferred method of communicating.

Tony: I didn't use it much because I would forget about it or going to the website took additional steps. I would say that most of our class would send emails out to everybody which was helpful.

Andrew: I found it difficult to navigate. It seemed more like a blog or an instant message chat. The organization did not make it easy to find information. Using the Wiki was not a priority. If I had an assignment due soon, I didn't take the time to go to the Wiki looking for information.

Shannon: I didn't use the Wiki much because I forgot the URL and the password. In the beginning I was overwhelmed by using all the applications and remembering the passwords needed for each.

For a time span of six weeks, while the cohort was getting used to being online students, some of them used the Wiki as it was intended to be used. As the semester progressed, more and more students started using IM to ask questions and stay connected with their cohort members.

MSN[®] Instant Messenger

During the time that the Wiki was active I encouraged the cohort to look into using MSN[®] Instant Messenger as a way to communicate with each other. My cohort started using IM halfway into our second semester as a way to stay in touch with each

other and we really enjoyed our contact with each other. C2 didn't communicate with each other by email very often. One of the students liked that idea and put together a cohort contact list comprised of email addresses, phone numbers, and MSN[®] contact information. Not everybody in C3 updated their information nor did they all have MSN[®] sign-in names.

IM was not adopted by all cohort members. Initially it was used during class by a few of the students to communicate with each other without breaking into the ITV class session. Eventually it was used whenever a person had a question or wanted to chat when they saw another cohort member was online. IM would also allow group chats for as many students as were online at the same time.

Cohort members encouraged and helped each other to get MSN[®] set up. One student posted on the Wiki:

Post: I've heard several of us agree with René on using MSN[®] instant messenger for discussing our assignments. Just login to www.msn.com and select instant messenger. Click on the button to download it for free. When you get it done use the page *contact info* to let us all know so we can add you to our contact list. I even live-chatted with René while I was working on my history presentation last Saturday and got some really good info on future classes and professors.

During the interview I asked the students about their use of IM. They answered:

David: I use IM at home. I can't have access at work.

Tammy: I use IM with about half of the cohort members.

Max: Yes, I can use MSN[®] with everybody. The immediacy is wonderful. When I want to contact somebody, I use MSN[®] first, I find that I go there most often.

Dorothy: I'm totally hooked! I have to have it!

Tim: Yes I use it a lot. It is great, but there is only so much typing that you can get done. I know you can invite some people over to a conversation, but that can be confusing.

Katie: Yes I use it a lot when I am away from work. I can't use it there.

Jeff: I IM with people I know. It is the easiest to use and most convenient and will work on dial up. It is simpler for people to get together on MSN[®]. I can ask a one liner during the day with IM, all day.

Carl: I can see who is online any time of the day, I use it all day. If I want to ask a question, I see who is online and ask. I sometimes save text chats if it is pertinent to an assignment.

At the point in time when I conducted the interview, about half of the cohort used MSN[®] to converse. Since that time a few more of C3 have adopted use of IM. One of the final posts on the Wiki explained the drift away from the Wiki to other forms of web-based communication, "I think we've converted to the IM and Centra[®] world. Seems like we're answering our questions faster these days that way."

Centra[®]

The cohort had the opportunity to use Centra[®] on Tuesdays as an instructional supplement to their two Wednesday classes. Centra[®] is a web based conferencing tool that was used by Texas A&M University. The students downloaded the software and once they were scheduled to be part of a conference, they would sign in and they could talk to each other in real time. All they needed was an inexpensive microphone attached to their computer. They could upload documents to share and they could upload PowerPoint presentations. Centra[®] allowed them to share their desktop or applications, and if they had a web cam they could also use video if they had a broadband connection. One attractive feature of Centra[®] is that the sessions can be recorded and listened to at a later point in time. That was beneficial for a student that missed the session.

There was one time when a student could not attend the Tuesday Centra[®] session but (s)he didn't want to miss anything, the student asked on the Wiki, "Could someone please, ever-so briefly, summarize what happened on Centra[®]? I got stuck in a meeting. THANKS!" Several of the cohort members used Centra[®] in their Extension jobs and were able to set up Centra[®] sessions for additional interaction outside of the Tuesday sessions. For students not in Extension, they had to send off an email asking to have a Centra[®] session, when and with whom and a staff member at A&M scheduled the session for them. There was enthusiasm for using Centra[®] on the Wiki:

Post: So, first of all, [name deleted] is the greatest for setting up study group time on Centra[®]. I have been totally test shy...so having the opportunity to not only get prepared by talking about all the papers

and outlines, but the opportunity to discuss candidly our feelings about this test and that test and preparation was SOOO helpful.

Cohort members talked about their use of Centra[®]:

Carl: Centra[®] is probably the more versatile tool, you can talk, you can text, can implement presentations and share applications. Centra[®] is probably the cream of the crop for this program. It is a difficulty in having to have somebody else set up Centra[®] sessions.

Jeff: Centra[®] is pretty good because we can talk, get instant feedback. It is a little better than IM for the group project situation. It isn't as convenient as asking a one liner during the day with IM all day, but it is pretty good.

Jason: Centra[®] started to address some of our needs. It started to fill a gap that the Wiki couldn't. You get an immediate gratification on Centra[®] and because neither of the instructors were on the Wiki either.

Katie: I love Centra[®]! I have missed a few Tuesdays, but for the most part I am there. I also joined sessions that were set up by others in the cohort.

Veronica: I think it is great and I usually made the Tuesday Centra[®] sessions if there was something I wanted to know, like questions about an assignment. To have that much access to our professors is tremendous. I just used it when I needed it.

George: I thought Centra[®] was very helpful. I was familiar with Centra[®] and the Centra[®] sessions were good. The only Centra[®] session I missed was right before Thanksgiving. I didn't ask a lot of questions. I wish I had done more [attend Centra[®] study sessions set up by cohort members]. [Name deleted] was scheduling some study sessions and I wish we had done them from the onset. I joined in on the last two and they were very helpful.

Tim: I like it. We used it for group projects and for study sessions. I thought that was the bee's knees [excellent]. One, it helps with clarification on assignments. Two... the more exposure you have to your professors you learn what they are looking for [instructors were present at the Tuesday Centra[®] sessions]... Three, I think it helps out, there is some information every once in awhile that you won't get the first time, that you can ask the second time and maybe it will sink in or be a little bit clearer. I really like the fact that I can talk to people. That's me, I'm a green personality, but this emailing stuff is like --- I got to see some faces. It's driving me nuts. I am sad when class has ended because that is the only time I physically see the person.

Dorothy: I think it is a fantastic tool. It really helped us with our policy paper the one with five people from across the U.S. I used it nine times

outside of the Tuesday sessions, for the group project and two [name deleted] test study sessions.

Kyle: There is about 2-3 minutes of good stuff and the rest of the time, in my opinion, is a waste. I did find the study sessions to be pretty useful.

Max: I have never seen anything like it and I like it a lot! I also have been researching extensively web cams and audio technology for my laptop to use MSN[®]. We used Centra[®] extensively for our group project.

Jim: I am fine with Centra[®], we use it for work. I am pretty familiar with it. I participated in one study session for a test. You can save the text chat log and email it to people. That is kind of a neat thing to do.

Mike: The Tuesday thing is voluntary. It is real helpful when you can use it. But, I think the thing is voluntary and I think information gets disclosed on there that doesn't necessarily get out to everybody and people missed out on certain points.

Susan: I love Centra[®]. If I couldn't attend or if I was in and out of my office I would go in and listen later on. The study sessions for the exam purposes were very beneficial.

Tammy: I really liked it. I've got to get a web cam. I could see [name deleted] but (s)he couldn't see me. We found it by accident during one of our work sessions. I know we'll be using it in the future a lot.

Don: It is fine. I guess my problem with Centra[®] was when it was discussed at College Station; I was one of the minority that voted that that particular time was not a good one to hold the Centra[®] sessions. I was unable to attend the majority of them. I was able to attend to test study groups.

Tony: Centra[®] was okay, I wasn't able to participate that much because of my work schedule.

Andrew: Fine – I'm very comfortable using Centra[®]. It is fine for discussion. We could use some of the tools provided in a better way. I did listen to the recorded study sessions, but it is difficult to find specific information. We can rewind and fast forward but not to a set point for specific information.

Shannon: Very good tool, I also use it for work. Centra[®] was not used for the second [name deleted] test and I thought that not having the study session hurt my grade.

David: I didn't get to use Centra[®] much. Unfortunately they scheduled the time while I was at work. The bane of Centra[®] is that since I couldn't attend I felt I was missing out on stuff that I should know about but couldn't get to. I wasn't given the opportunity to do it and it kinda ticked me off a little bit. I was able to attend the two sessions before exams and they were helpful. We got to go over our notes and say

here is what I have, consolidated them all through text chat and printed them off. The sessions were focused and there was very little chit-chat.

Usefulness of Web-based Communication Tools

Whereas the cohort is not located in close proximity to each other and have no easy way to meet, I asked their opinion about using web-based communication tools (Wiki, Centra[®], IM, Email) in connecting with their cohort members. Once again, most of the students responded that the tools were useful. Some went on to explain their thoughts:

Carl: It primarily started with the issue analysis project for our [philosophy] class. Up until that point, I had very little communication with others in the class outside of class time. I am not a loner; I like to communicate with people. I am a red, so it has been extremely helpful to communicate with others in the cohort on a regular basis.

Jeff: I would miss using IM. Every so often emails will be sent to the whole cohort with something that may be of interest to everybody. It is important to socialize and it would be a hindrance if that was taken away.

Jason: I think they are useful but the reality is it is pretty limited. I haven't had a lot of correspondence with my other classmates except for maybe 2-3.

Katie: There is no other way to contact our classmate in Canada. I will go to web-based communication tools before I will use the phone. I use the tools on a continual basis, at least once a day there is an email of a response or something, and that is on a slow day. Usually it is much more.

Veronica: It is vital. I don't know how else we would do it. We interact pretty regularly. Some in the cohort we never hear from. There are about 10 of us that communicate a lot.

George: They are good, they are excellent, it is definitely in this age with everything, time is valuable and it is an opportunity to correspond quickly.

Tim: It would be very difficult to have a social connection without them. I use IM all the time.

Dorothy: I can't imagine being in this program without those tools one way or another. Each tool has a positive and a negative. Up until a day ago I was talking to a cohort member everyday.

Max: I think the tools are vital.

Jim: Without those tools we probably would not be connected. You know, we are not gonna sit there and call, though some us probably do talk on the phone. I think it is pretty essential, we are doing other things in our lives and we respond when we get a chance.

Mike: I feel those tools are very valuable to me.

Tammy: It would be really difficult to establish even a secondary relationship with everybody if you didn't have these tools. Even with as cheap as cell phones are these days, it is so easy to shoot people an email as opposed to calling them on the phone and interrupting dinner or whatever. For some of the people the only time I talk to them is during class time. Probably about half the class we IM and email outside of class.

Don: They are not useful to me.

Tony: I think IM and email does help. I communicate at least weekly.

Andrew: The advantage with email is that I can look at it in my own time. I am moving all the time and IM would not work.

Shannon: It would be hard to build relationships without those tools but it could be done.

David: With email you are limited in the inflections that you can put in. With TTVN that is one way but it is still kinda iffy. With the Wiki and with being able to hear each other on Centra[®], those helped because you could – while I really do like to get to the point when I am studying – when I am not studying I like to hear things and know about people and understand why you are asking the question you are asking. Some people may not remember that I have no background in Ag

Education. So, when I ask a question it isn't for just an answer, I really want to know.

I also wanted to know if the students had a favorite web based communication tool. Many said email, but others responded:

Jason: If Centra[®] were more a part of our culture I would prefer it much more than email. I use email a lot but I am not a big fan of it because so much of the nuance of a conversation is lost, but it would be my practical choice.

Tim: No not really, I am comfortable with all of them. I will use whatever everybody else wants.

Dorothy: The best tool at the time, But, you know, I am so into this instant messaging thing. I will pull up my instant messaging menu and it shows that someone is online and I will send a message and if the person doesn't respond I'll just send an email.

Kyle: Phone, maybe a brief email.

Max: MSN[®] is gonna be it right now just because it is so new to me.

Centra[®] is new but I don't have the capability of creating something around here with Centra[®] with other people.

Tammy: I probably use email more than anything but I can't say I like it best. I like IM but I am not always able to use that because everybody is not always online at the same time. It is a little harder to visit on IM so we get down to business sooner. If I had to pick a favorite, I'd say Centra[®]. I get to hear everybody's voice.

Don: I use email probably about 20% of the time and 80% phone contact.

David: In the beginning it was the Wiki because other people were on it and I posted and got an email notification that somebody posted. When that kinda petered out, people stopped using that, I went to just using email.

Most of the students used the range of tools available to them to connect with their cohort, with email as their favorite tool to contact cohort members even though most of the students state they are comfortable using technology (Table 7).

Table 7

Participants Comfort Using Technology and Preferred Communication Tools Grouped by Age Range

Student	Age Range	Comfort With Technology	Preferred Communication Tool
Veronica	>35	Yes	Email
Mike	>35	Yes	Email
Jim	>35	Not Yet	Email
Shannon	>35	Yes	Email
Dorothy	>35	Yes	IM
Andrew	>35	Yes	Email
Tammy	>35	Yes	Centra [®]
Jason	>35	Yes	Centra [®]
Kyle	>35	Not Yet	Telephone
George	>35	Not Yet	Telephone
Carl	<35	Yes	IM
Katie	<35	Yes	Email
Max	<35	Yes	IM
Jeff	<35	Not Yet	IM
Tim	<35	Yes	IM
David	<35	Yes	Wiki
Don	<35	Yes	Telephone
Susan	<35	Not Yet	Email
Tony	<35	Yes	Email

However, even though there was activity on the Wiki, students were using and enjoying IM, and the Centra[®] sessions went on every week, three students felt isolated and not part of the cohort until they participated in a group presentation for their

Philosophy class. They explained that it took being part of a group project for them to establish a social connection. From that point on, they used the web-based communication tools to further establish their informal social connection.

Summary

The students use a variety of web-based tools. Email, the most familiar to them, is used the most; however students enjoy using IM and Centra[®] more than the Wiki. The usefulness of the Wiki lasted for six weeks, during which the students used it to discuss topics related to their doctoral program, their classes, technology use, online library use, they provided emotional support to each other, and shared personal stories. The Wiki fell into disuse as the cohort discovered the instant gratification of using IM and they started using Centra[®] for group projects and exam study sessions. Cohort members think that using web-based communication tools is vital to their success in the program. Even though the web-based communication tools were available at the start of their program, three students felt isolated until they participated in a group project for one of their classes. After that point in the semester they utilized the tools to connect with their cohort.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Why is the concept of a community of practice important and what do web-based communication tools have to do with it? The participants of this study as well as the literature place value on the ability to learn together as part of a community.

Summary

The Literature

Social learning theory revolves around the idea that learning occurs in a social context, not in a vacuum (Vygotsky, 1978); while we learn from a teacher-student relationship we also learn through student-student interactions (Mercer & Fisher, 1997). A community of practice is a group of people that share a common interest and they help each other do a better job by sharing information and practices to accomplish tasks. The community achieves those objectives by participating in and listening to discussions where they share experiences and stories. “Knowledge, in this view, is inseparable from practice, and practice is inseparable from the communities in which it occurs” (Swan & Shea, 2005, p. 241). Originally, community of practice theory revolved around groups that gathered in a physical place around the domain of interest (Wenger, 1998b).

Online students do not have a physical place to gather, to talk to each other, and learn from each other (Nicholson, 2002). For them to experience a social setting they must resort to using some sort of communication tool to make their own virtual hallway or gathering place to interact with each other.

This study is based on constructivism (Piaget, 1973), specifically social constructivism (Vygotsky, 1978). The learning theory of constructivism states that learning occurs when new knowledge is based on existing experiences and knowledge, whereas social constructivism adds that the social context of the learning experience with people other than the instructor is also an important ingredient in knowledge construction. Constructivism is applicable to andragogy, adult learning theory, (Knowles et al., 1998). Meaningful and authentic knowledge occur when the learning environment is learner centered (Shea, Li, & Pickett, 2006) and based on real-world experience and prior knowledge (Dewey, 1938).

For an adult to be a motivated and competent self-directed learner, (s)he needs to have a feeling of self-efficacy (Bandura, 1982; Mager, 1992). In an online learning environment that may be difficult when the adult's learning experience has always been in a classroom (Clark, 2002) and they use unfamiliar technology. New skills and attitudes need to be taught so that students can learn collaboratively with and from one another (Straka & Stöckl, 1998).

Doctoral students need to be immersed in a research community to develop their voice (Wikeley & Muschamp, 2004). In addition, there is a strong reliance on their peers to successfully make sense of their experiences in graduate school (Austin, 2002). Postgraduate study requires the doctoral student to experience several socialization processes: (a) to the role of a graduate student, (b) to academic life, (c) to the specific discipline they are entering, and (d) to the profession (Golde, 1998). The University of Melbourne developed *Postgraduate Essentials*, a community of practice environment for

on-campus students allowing them to have access to skills, tutorials, ideas, and resources needed to support new doctoral students as they transition from a conventional learning mode into a community of independent learners and reflective researchers (Larcombe & McCosker, 2005).

A community of practice is a group of people who learn informally from each other. Their learning revolves around a shared domain of interest with the practitioners engaging in a process of collective learning thus creating bonds between them. The shared collection of experiences forms a common knowledge base giving adults the skills they need to function in new situations. Not only do the individuals learn skills, they also become socialized to the behaviors, viewpoints, and language of the community. A community of practice can be place bound or virtual (Gray, 2004; Wenger, 1998b, 2001, n.d.; Wenger et al., 2002).

A person's sense of community may be hard to define but they know it when they feel it (Sarason, 1974). Usually the feeling of community is felt by a member when (s)he experiences a sense of trust, safety, and belonging (Furman, 1998). A learning community is characterized by members sharing common expectations, values and beliefs, interactivity, connectedness, mutual interdependence, trust, and spirit (Fisher et al., 2002; McMillan, 1996; McMillan & Chavis, 1986). When members of a community feel a sense of *social presence*, an important variable that contributes to building a sense of community among online learners, there is a positive correlation with sense of community. This is a strong factor in predicting a student's satisfaction with learning in an online learning environment (Gunawardena et al., 2001; Rovai, 2002a).

Technology can be conducive in fostering the growth of an online learning community as it may allow for a place where students can gather and communicate (Schwier, 2002). For instance a web site [Wiki] can provide a central place for students to gather (Bonk, Wisher, & Nigrelli, 2004). While traditional students can informally interact with each other in common spaces such as classrooms and hallways, online students do not have a physical place to interact with other students in their learning community. The Internet has allowed us to interactively communicate, blurring the lines between time and distance. While there is no perfect solution that enables interaction and collaboration over the Internet, the use of a variety of media can enhance interactivity and the social aspect of the learning process by creating a *virtual hallway* (Cain et al., 2003; Nicholson, 2002).

The following research objectives guided this study:

1. Explore and describe whether a community of practice can be established using web-based communication tools, examine whether those tools help new, adult, online, doctoral students adapt to online learning, and increase a students' satisfaction and perception of success with online learning.
2. Explore and describe whether a sense of community is desired, important, and lessens the feeling of isolation that may occur with new, adult, doctoral, online students.

Research Design

This study is classified as expansion research within the qualitative research paradigm using naturalistic inquiry, incorporating quantitative analysis that was

descriptive and correlational. The natural setting for this study included all 19 students of the new cohort of the distance Joint Ed.D. program offered by Texas A&M and Texas Tech Universities. The cohort was introduced to the study and the use of the Wiki during their induction, August 2006. The following December, after the cohort had completed their first semester in the program, I conducted a semi-structured phone interview assessing the cohort's experience as new online students and their use of web-based communication tools. The Sense of Community Index was administered during the phone interview. A tally was kept of each individual's use of the Wiki and the pages of the Wiki were printed for content analysis.

Due to the sensitivity of research on human subjects, Institutional Review Board (IRB) approval was acquired prior to conducting the study. IRB approval, #2006-0421, was granted for the study on July 24, 2006 (refer to Appendix C).

Data Analysis

The constant comparative method of content analysis was used on collected data (postings from the Wiki and the transcribed interviews) to compare across categories and construct meaning. Descriptive frequencies, responses from the SCI, and bivariate correlations were analyzed using the Statistical Package for Social Sciences (SPSS, Inc., 14.0.2, 2006).

Findings and Conclusions

Objective 1

Explore and describe whether a community of practice can be established using web-based communication tools, examine whether those tools help new, adult, online, doctoral students adapt to online learning, and increase the students' satisfaction and perception of success with online learning.

Findings

Wenger's (Wenger, 1998b) three criteria for a community of practice are:

1. A focus on a domain of shared interest.
2. Members share in joint activities, have discussions, they help each other and share information.
3. Members share resources: experiences, stories, tools, and ways to address problems.

The findings illustrate that the three criteria for a community of practice are present. The domain of interest is doctoral study with a cohort of new, adult, online students. The students shared information by having discussions and sharing resources as they participated in joint activities facilitated by the use of web-based communication tools.

Informal knowledge exchange is integral to a community of practice. The students were able to help each other gain confidence as online students using the Wiki by participating in discussions revolving around: (a) assignments for classes, (b) how to correctly select test answers in WebCT[®], so that they did not click the wrong button and

answer a question incorrectly, (c) they learned how to correct a software setting used to connect to class so that they were not disconnected while class was still in session, (d) they talked to each other about selecting committee members, (e) they commiserated with each other over the difficulties in understanding content presented in their classes, (f) they studied together to prepare for exams, (g) they worked together on group projects, (g) they were comforted by the fact that they were not the only ones feeling lost, overwhelmed, and frustrated, and (h) they shared personal stories enabling them to become better acquainted. I envisioned that the Wiki would also be used as a repository for information; however the students never uploaded documents or worked collaboratively on a project using the Wiki.

The Wiki was active for approximately six weeks and over 80% of the posts on the Wiki were made by five students. Of those five, only one was female. Many students revealed that they found the Wiki useful especially at the beginning of the semester when everything about the program was new to them. For those that selected not to post on the Wiki they were able to lurk (read but not respond) and learn. The students that posted very few times or not at all offered the following comments about the Wiki: (a) it was confusing to navigate, (b) they forgot to check it, (c) they didn't post because their question had already been asked and answered, (d) postings on the Wiki didn't relate to their concerns, (e) postings on the Wiki were frivolous, (f) it was time consuming to read and respond, (g) there was concern that if a student posted it was always there for everybody to see, and (h) at the time the Wiki was introduced to the cohort they had already received two intensive days of orientation for their doctoral program and felt

overwhelmed with one new thing to try to understand. Wiki's were completely new to most of the students and they didn't grasp how it could help them. A couple of the students did not participate as the Wiki had no instructor involvement nor was it a graded activity.

Wiki use ceased when the students started communicating with IM and Centra[®] on a routine basis. The reasoning behind that switch was that IM was quicker and Centra[®] allowed the students to talk and see each other; they were more present to each other. Another factor in the death of the Wiki was the increased course load at that point in the semester. The students were busy completing assignments for both classes, a group project, and preparing for exams in both courses. They felt that the time needed to use the Wiki was better spent on course requirements. Other students, noting the drop in activity, were reluctant to post any new concerns.

IM was used to socialize and share information. Several of the students used IM to plan and collaborate on a group project. Many of the students leave IM running all day and when they see one of their cohort members online, they can ask a question and receive an immediate answer. The students that used IM strengthened personal ties because they would also chat about topics that were not related to school. They found that chatting on a social basis was enjoyable and helped them to feel a closer relationship with those students.

Centra[®] allowed the cohort to communicate with each other outside of the Tuesday session as some students used Centra[®] to collaborate on group projects. Additionally, the students utilized Centra[®] for study sessions to help them prepare for

upcoming exams. They liked using Centra[®] so much that Shannon expressed dismay that Centra[®] was not used to help them prepare for one of their exams. She felt her grade suffered because the group did not study together.

Email, a technology that was not new to the students, continues to be a source of support for all cohort members. When some of the students were unsure of how to write a paper, they would email other members of the cohort asking for information on how to start or complete an assignment. Many cohort members would respond by email and attach examples of how they fulfilled the requirements of the assignment. This would allow the student that asked for help to use the papers as a guide to get their creative thoughts flowing. At times when a student found a document or a web link that they thought would be beneficial to the group or an individual, they would share what they found using email. Email is also used for questions as not all members use IM.

Whereas the Wiki was not used for a long period of time and by the majority of the students in the cohort, IM and email are used on a daily basis by many of the students. Considering that Centra[®] did not receive daily use as it had to be scheduled with a third party, it was used by one student nine extra times during the semester outside of the Tuesday sessions that were attended by the instructors. The students are convinced that using IM, email, and Centra[®] have been vital to their success in the program. All of them agreed, many enthusiastically, that their learning is enhanced when they can interact with each other.

The biggest adjustment for the students didn't pertain to the technology used to deliver course content, although a few students struggled with learning to use WebCT[®]

and thought they would have had less frustration the first three weeks if they had been taught how to use it. Several students also struggled with using APA style writing and would have liked a preliminary course on writing prior to starting class work. It was hard for some students to attend class in an unconventional way. They appreciate the flexibility of distance delivery and the ability to see and hear their instructors and the rest of their cohort over ITV. However, aspects such as the lag time that occurred between asking a question and receiving an answer and the fact that some students attend class by themselves required acclimation.

The big adjustment came in finding time to fit doctoral study into a life that was already busy with family and their job. Students were surprised by how much time they had to devote to their coursework even though they had been advised by students from the previous cohort and the faculty that doctoral study was time consuming.

Obtaining a doctoral degree at a distance is not the preferred way for some of the students in this program. They would rather be sitting in a conventional classroom. Regardless of their preference, everybody in the cohort was satisfied with their performance during the first semester and were highly confident that they will be able to complete the requirements of their doctoral program. The students find the program *flexible* and *realistic*. Not all of the students understand what is required to complete the Joint Ed.D. program, nor are some ready for the self-direction and self-discipline that is expected of doctoral students. A few of the students are embracing the idea of immersion in their research community and they actively seek information from program officials,

instructors, and certain members of their cohort. The others are content that they will be told information when they need it.

Conclusions

By using the Wiki, IM, and Centra[®] the students were able to establish a community of practice during their first semester in their distance delivered doctoral program. It is too soon to tell if their community of practice can be maintained using web-based communication tools especially since the Wiki lost favor with those that used it. IM is used by many in the cohort and is seen as a quick way to get answers to questions and to socialize with members in the cohort. At the time of the interview only eight students had an IM account, I recently checked my own IM account and saw that 15 of the cohort now have IM login names. Centra[®] proved to be a usable tool permitting cohort members to collaborate on projects and share information as they prepared for exams; the students liked the ability to talk to each other and they could see people who used web cams. After one semester the cohort is at an embryonic stage of a community of practice. Time is needed to examine whether the students keep using the web-based communication tools as they presently are, if they find new uses for the tools during the next few years, or adopt new tools that may come along as they complete their doctoral program. A concern with the demise of the Wiki is that students who like to lurk, no longer have that ability.

The web-based communication tools contributed to the students' acclimation to online learning as they were instrumental in teaching new skills needed for doctoral study, allowed the students to help each other with class work, and provided emotional support. Receiving support from their classmates contributed to a sense of confidence that grew as the semester progressed. Not every tool was used by every student; however the students that adopted use of the Wiki, IM, and Centra[®] said that the tools were vital in establishing and maintaining relationships. To enhance the ability for the students to gather and share information it takes a variety of tools as the students used all three plus email. This finding echoes Cain, Marrara, Pitre, and Armour's (2003) recommendation that a variety of media be utilized to facilitate communication.

The expressed needs of the students varied at different points in the semester as seen in Table 8. Those needs help explain how the cohort used the web-based communication tools during the first semester in their doctoral program.

Table 8

Student Needs and Use of Web-based Communication Tools During the First Semester in Doc@Distance

Induction/First Six Weeks	Mid Semester	End of Semester/Finals
<ul style="list-style-type: none"> • Students find the face-to-face induction vital to establishing a sense of community. • Students feel overwhelmed with the amount of information conveyed during the induction, a few would like to know more, many are aware that more information will come. • Students would like more time with faculty, especially as they need to select committee members and find it difficult when they have met faculty for only two days. • Students experience distress and would like instruction on use of the Course Management System, APA style writing, and online library use. • Students start interacting with each other using the Wiki, they express uncertainty and doubt. They have conversations about school as well as social interaction. They feel the need to connect with their cohort members. Students are unsure of what instructors are looking for; they want more specific parameters for assignments. 	<ul style="list-style-type: none"> • Students abandon the Wiki for IM to receive quicker answers to questions. While communication is mostly school related, students still use IM for social communication. • Students use Centra[®] to work on group projects as they can talk to each other and see one another if a web cam is available. They like hearing real voices; they feel more connected to each other. • Three students start to feel less isolated due to working in groups. • Students use Centra[®] to study for mid term exams. 	<ul style="list-style-type: none"> • Students that had unease using technology at the beginning of semester, feel more competent. • IM still in use on a daily basis by some students. They report needing their <i>daily fix</i> of contact with cohort members • Students that felt isolated until participating in a group class project, now use web-based communication tools to have contact with cohort members. • Students looking forward to seeing each other at the next scheduled f2f. • Some students still struggle with self-direction and self-discipline needed for doctoral study. • Some students lack understanding of the program requirements. • Students' confidence is high that they can be successful with their coursework.

Objective 2

Explore and describe whether a sense of community is desired, important, and lessens the feeling of isolation that may occur with new, adult, doctoral, online students.

Findings

Learning theorists (Dewey, 1938; Vygotsky, 1978) posit that social interaction enhances learning. Tammy stated “I have decided that I am a social learner. I like the interaction of classmates, exchanging thoughts, and ideas” and Carl said “I am a not a loner, I like to communicate with people.” These students crave communicating with their cohort members. Many of the students agree as they think that a social connection is either necessary or needed. They could not imagine being in their doctoral program without informal social interaction with their cohort. The need for a social connection is not a universal experience (Levy, 2006). All but three of the students agree that a social connection is important to them and helps them learn in an informal way. Yet the three of them scored at least 75% *True* answers on the Sense of Community Index (SCI) indicating that they feel a sense of community with their cohort. Sarason’s (1974) Psychological Sense of Community (PSOC) theory states that a person just knows when they are part of a community, it is a sense they feel. During the interview all of the students responded that they fit in with the cohort, they *feel* a connection. The entire cohort of 19 students was in agreement that their three day f2f induction allowed them to develop that bond. Rovai (2002b) found that a sense of community must be consciously supported in an online environment even though that sense of community grew naturally

from participation in a f2f setting. Several of the students stated that if they hadn't had the f2f experience they would have eventually developed a social connection however, that bond would not have happened so quickly.

To give a tangible expression to each student's PSOC, the SCI was administered to each student during the interview. Everybody in the cohort scored at least 75% *True* answers on the SCI and eight students scored 100% *True* answers. This cohort quantitatively feels a strong sense of community.

Previous studies have shown a reliability for the SCI across contexts: $\alpha = .71$ (Pretty, 1990), $\alpha = .80$ (Perkins et al., 1990), $\alpha = .69$ (Pretty & McCarthy, 1991) and $\alpha = .80$ (Obst & White, 2004). Combining the 16 statements of the SCI into a single additive index produced a reliability of $\alpha = .54$. This low reliability may be due to the small sample size and the heterogeneous population. I then correlated the students' sense of community index with the variables of IM use, gender, age, previous online course, doing class at home, work, or both, and broadband access at home. There were no statistically significant correlations.

Initially some in the cohort posted on the Wiki. Many of the cohort lurked and learned. Centra[®] was used by the cohort to interact before their first ITV class and shortly after the start of the semester, IM was in use by one third of the students. Three web-based communication tools were utilized, allowing the cohort to connect with each other on a social and intellectual level. Yet, three students expressed that they felt isolated. They did not participate in exchanges with their cohort. It took participation in

a group project before they felt connected to at least the students in their group. After participation in the group project they started to feel included on a larger scale and all three started using IM.

Many of the students are in contact with each other, using IM or email on a daily basis; others report that they are in contact at least once a week and that web-based communication tools are vital to feeling connected to the other students in the cohort.

Conclusions

Connecting to each other is important and necessary to the students. The students in this study are not unusual; a recent study reports that students place a high value on their social connection with their peers (Cain et al., 2003). Using IM and email, many of the students can and do interact on a daily basis. The combination of web-based communication tools allows the cohort more venues for informal and social communication, as well as the potential to share information about their degree program and their classes. A sense of community is strongest in those who experience the most intensive exchange and the use of real-time communication is a key in strengthening group cohesiveness as well as individual relationships (Levy, 2006).

This cohort of students acknowledges that they experience a strong group connection; all of them feel like they fit in with the group. They have a common goal to earn a doctoral degree. Many communicate on a daily basis using several web-based communication tools, nevertheless three students felt alone and isolated until half way through the semester when they worked on a group project for one of their classes.

Attrition is always a concern for both on-campus and online learning, and isolation is a major contributor to attrition (Morgan & Tam, 1998). Misanchuk and Anderson (2004) posit that encouragement of students to support each other and feel part of a community may be one potential strategy in reducing dropout rates. Incorporating group work early in the class schedule and the encouragement of student interaction in informal discussions with their peers may reduce the feeling of isolation with students that are hesitant to engage others outside of class time.

Recommendations

Schwier (2002) cautions that “Virtual learning communities do not just happen; but neither are they created” (p. 3). As educators we can promote the development of learning communities and encourage their use, but ultimately it is the learners who decide if they will use the provided tools and they will determine if a community emerges. If and when a community emerges it takes time for a community of practice to develop (Wenger et al., 2002). While we can not force the development of a community of practice among new graduate students, a laudable goal would be to help one develop. Communities of practice help graduate students socialize into their new learning environment and the informal learning that occurs is instrumental to knowledge construction.

The Joint Ed.D. program is a four year process and possibly longer depending on the research that the students decide to pursue. I recommend that the cohort be reevaluated when they have completed their class work and again when they are close to

defending their dissertation in their use of web-based communication tools to assess the ability of those tools to maintain and support this community of practice past the embryonic stage.

Is the use of the tools based on the needs of the learners? Wenger (1998a) states that communities of practice go through stages of development “characterized by different levels of interaction among the members and different kinds of activities.” (¶ 12). The stages of development model proposed by this study needs to be tested as to its viability. Further investigation is needed to examine what developmental stages C3 may go through as they progress through the Doc@Distance program, how they interact, and what activities they use in their community of practice. This examination needs to discern if there are definite patterns that explain engagement. Membership in a community of practice involves whoever participates (Wenger, 1998a); future study of this cohort should examine why students have/have not engaged in activities. Is their engagement or lack of engagement in the community of practice a personality trait, due to their extrinsic or intrinsic motivation, or possibly their level of self-direction? It would also be beneficial to investigate the development of community or lack of community and the resulting stages with students that progress through an online program as individuals not part of a cohort.

Only one woman used the Wiki extensively while it was active. This finding coincides with previous studies reporting that males are dominant in computer mediated communication as they post more times than females (Prinsen, Volman, & Terwel, 2007;

Qing, 2006). Studies investigating gender issues report conflicting results. Conversely, the findings of Rovai and Baker (2005) found that females posted more times to a discussion board. Additional research is needed to discover online communication patterns by gender and investigate other factors contributing to use of the web-based communication tools. If gender dominance is apparent it will be necessary to address inclusiveness and actively invite females to participate.

Informal knowledge exchange is integral to a community of practice. When a new community of practice is formed it needs to have at least one facilitator or mentor to pass along practices that are applicable to the domain of interest. The facilitator needs to be active and encourage discussion (Gray, 2004). The knowledge of the mentor will enhance the discussion as new practitioners do not initially have the skills and experiences to guide each other. This will give the students a starting place as they develop their own reservoir of practices and information sources.

The Wiki was intended to be the common gathering place for the students to interact. Several in the cohort stated that they would have used the Wiki more if their instructors were answering questions. Students place a high value on interaction with their instructors; the Wiki or any discussion board should have an institutional presence such as an instructor or faculty member to add to the discussions. This recommendation is supported by several studies (Cain et al., 2003; Reissetter & Boris, 2004; Shea et al., 2006). Instructor presence using IM is highly recommended. Jeong (2002) found that students rated IM use with an instructor very high (8.39 out of 9) and Cain, et al., (2003)

found that students expect academic-related support to come from their instructors. I recommend that instructors establish virtual office hours using IM.

Now that the Wiki is not active, lurkers have no *place* to go to learn by lurking. Lave and Wenger (1991) state that peripheral learning is authentic and lurkers benefit by lurking. How often did lurkers go to the Wiki? If a Wiki is used to provide a gathering place for a community of practice it needs the ability to track how often lurkers sign on to read the information found on the Wiki. Discernment of this activity may help establish another stage of development for virtual or place-bound communities of practice.

Students in the present cohort desired instruction on use of the CMS, the online library, and writing technique, especially the use of APA style writing, prior to the start of their first class. Competences in those three areas are essential for a distance doctoral student. I recommend that instruction be made available to the students prior to starting online classes, possibly at their orientation. Another option would be to develop instructional videos and handouts in lieu of providing instruction during an orientation. Students that need instruction can reference the videos and handouts when and if needed. I also recommend that a manual be produced that states the requirements of the program the students are enrolled in. While the information may be available on the school web site and the students can find answers to any question about the requirements, they will be less likely to miss an important detail if all information is in one document and easy to find.

These recommendations may also apply to on-campus students. Future study should examine the needs of new, resident, graduate students and compare those results with the findings of this study. New graduate students whether distance or resident may have the same issues and concerns requiring the same solutions enabling their immersion into a research community. A possible alternative to providing instruction in these areas would be to include an orientation topic of how to be self-directed learners and then investigating how students adapt to doctoral study on their own.

I strongly recommend that group work be incorporated early in a class schedule. It took participation in a group project for three students to engage with their cohort members. Group work is pedagogically sound in that students benefit from student-student interaction, so it may be also follow that students benefit from the informal social interaction provided in group work. Future studies should examine the potential of group work as a viable technique in reducing isolation for online learners. Isolation and distance education is not a new concern. A quick library search using only one search engine revealed 962 articles devoted to the topic including articles dating from 1982 to the present. Research from multiple academic disciplines has reported that student isolation is concern and researchers have examined the causes and proposed solutions.

Use of the SCI confirmed the students' feeling of belonging. While previous studies showed a reliability of $\alpha = .80$, indicating an acceptable reliability for the SCI, my analysis revealed an $\alpha = .54$. To increase the reliability of the instrument used in the context of this study, I recommend that the SCI be administered to a larger, less

heterogeneous group of students to examine if the reliability of the instrument increases. Another recommendation is to run a four factor analysis on the instrument using the scales the instrument was designed to examine: (a) integration and fulfillment of needs, (b) sense of membership, (c) sense of influence, and (d) shared emotional connection.

The correlation of the SCI additive index with the variables IM use, gender, age, previous online course, doing class at home, work, or both, and broadband access at home exhibited no statistically significant correlations. This may be due to the small sample size used for the statistical procedure instead of variables that are not correlated. This is an initial investigation of the correlates and future studies need to investigate the variables of this study as well as different variables with a larger population to examine if relationships exists. A 2007 study (Xiojing, Magjuka, Bonk, & Lee, 2007) found evidence that there is a positive relationship between sense of community and perceived learning gains, learner engagement, and student satisfaction. A possible variable to investigate would be personality. The personality profile used for the fun activity during the cohort's induction should be replaced with an instrument with proven validity and reliability such as the Myers-Briggs[®] Type Indicator and the results evaluated as to the possible impact personality may have on social engagement and importance of networking with cohort members.

A final recommendation is that new instruments need to be developed to examine the impact of self-efficacy with technology, personality, and self-directedness on Personal Sense of Community and use of web-based communication tools.

Implications and Educational Importance

The scholarly discipline of Agricultural Education has been at the forefront of distance education, and is one of the top ten educational disciplines offering online education in the United States (National Center for Education Statistics, 1998). Multiple institutions of higher education offer classes and complete, online, agricultural education graduate programs; their reach is now going international. The experiences of the students participating in this study can be used to support student engagement in existing programs and elemental in the design of new programs or the instructional design of new classes.

For over 80 years, scholars have studied the importance of community as it applies to knowledge construction. Dewey (1916) an important learning theorist in Agricultural Education, is one of the pioneers. A 2007 study concurs "...the sense of learning community is worth pursuing, as the process of building community itself enhances effective collaboration and communication, learner engagement, and social networking that will eventually benefit both participants as well as the online program" (Xiojing et al., 2007).

What became clear from this study is that there is no perfect online tool to encourage the development of a community of practice. There is no shortage of communication technology and new tools arrive on the horizon at a rapid pace. As educators we need to expand our educational vision and apply creativity to the use of the communication tools to create new educational environments. While the communication tools examined in this study may not be perfect, a community of practice still developed

and it is important to the students and their satisfaction with online learning and their doctoral program. It is also apparent that communicating effectively is a critical skill for online learners in the development of that community. Learners should be encouraged to interact with each other often outside the formal classroom. Furthermore, as educators we should be role models in effective online communication, provide examples of community building behavior, exhibit an online presence in student discussions, and remind learners that their role in discussions are important.

The Researcher as the Human Instrument

In 2001 I decided to go back to school 23 years after receiving my B.S. I wanted to make a career change that required a Master's degree. I live 35 minutes from a major land-grant institution, but it did not offer night, weekend, or distance classes in the discipline that I was interested in. I needed one of those options due to the fact that we farmed, I worked a full time job, and my youngest daughter was in junior high school. I didn't want to inconvenience my family to further my education. I found an online Master's program in the discipline that I wanted from a well known, accredited, brick and mortar, land grant institution and was matriculated for a January 2002 start. I was apprehensive taking my first class for several reasons: (a) could I be a student again? I hadn't set foot in a formal classroom in 23 years; (b) was I smart enough to do graduate work; and (c) When I had a question would I be able to get it answered through email or a phone call?

I decided to take just one class my first semester. I learned so much, not only class content but also how to use the online library, how to submit assignments in

WebCT[®], and during this process I fell instantly in love with online learning. Learning to use the technology was not a problem; I like technology and am adept at playing with the tools to do what I needed to do. For instance, a final project for my first class required that I put up a web page. I had never done that before but I taught myself and completed the assignment. I assumed all distance students operated this way.

The following fall, I learned that not all students were confident with their self-efficacy in an online learning environment. One of my classes had set up a discussion area for topics not related to the class. In this discussion area, doctoral as well as master's students were posting that they were feeling overwhelmed with learning to use the technology, overwhelmed with trying to juggle school with their jobs and their families, and frustrated with the self-direction that was required for graduate level study. I was taken aback; I had no idea that students were struggling that way. The discussion area allowed us to commiserate with each other and to offer solutions that had worked for us. At this point I started asking students what barriers they were facing regarding their satisfaction with online learning.

The instructor I had for the course noticed that I functioned very well as an online student and asked me how I managed the technology and the class work. I wrote down my strategies and emailed them to her. The next semester I took another class from her and noticed that she had put together a help sheet with many of my strategies as a guide for her students. I was very flattered that I was able to help online students do a better job and feel less frustration.

January 2003 found me presenting at the 10th Annual Distance Education Conference on the concerns of distance students. While at that conference I had the opportunity to sit in on a double session led by Dr. Charlotte “Lani” Gunawardena from the University of New Mexico. During that session I had a light bulb moment! She told us that student satisfaction in an online course is tied with *social presence*. I immediately knew that was why I enjoyed some classes more than others. I was fortunate enough to do well in all my classes but I didn’t enjoy some as much as others. My satisfaction with online learning was intimately joined to my enjoyment level. I wanted to make online learning enjoyable and satisfying for other online students. Shortly after that conference I started looking into furthering my education with an online doctoral program, as my personal situation had not changed and online learning was the best option.

I was admitted to an online doctoral program as part of a cohort. Our cohort had members that lived in Texas, Montana, Arizona, Nevada, Utah, and Indiana. Before classes started we met as a group to be inducted into the program. At the induction we met the students of the previous cohort. As we listened to those students share their feelings about and experiences in the program, I realized that our group would need to lean on each other if we were to get through doctoral study and still be sane. Partway through the second semester I emailed everybody in the cohort and suggested that we use IM to communicate with each other during our Wednesday class. It would allow us to converse without breaking into the class and we could communicate almost instantaneously. We couldn’t meet after class in the hallway or go somewhere to share a

cup of coffee and talk, but we could support each other with IM. We were present to each other and we didn't feel like we were going through our doctoral program alone.

Another way that we could connect with each other was through the use of a web conferencing system, Centra[®]. A few of the cohort members were working on a group project and set up a few conferences to discuss the project. That worked very well, so I then set up study sessions for our exams using Centra[®]. When our cohort had to take Statistics, we set up a weekly study session. These sessions allowed us to learn from each other and allowed us time to socialize that we didn't get because of our distance from each other. We built our own social presence into the doctoral program.

We didn't know it but we developed our own community of practice. For the last five years I have been informally learning how to make the online learning experience better. With this study I am conducting formal research to investigate ways to improve the online learning experience. I have walked in the shoes that the participants of this study are walking in now. I want to help others enjoy their online learning experience and learn effective practices to accomplish that goal.

The beauty of qualitative research is that through examination of the experiences of the participants, we as researchers may be led in a direction that we did not initially conceptualize. While the two cohorts had similar experiences we need to be aware of the importance of context and that multiple realities explain the differences. The results of qualitative research are questioned by quantitative researchers as they say that the results can not be generalized to a population. Qualitative researchers are not dismayed by that

statement as no two groups of people are the same; their experiences may be similar but they will not be identical.

My initial goal was to examine the usefulness of a Wiki as a tool that would allow new online students help each other as they transitioned to online learning and began immersion into doctoral study. This study grew to include the use of Instant Messaging, Centra[®], and email. The participants in this study cannot meet physically before or after class to converse about whatever topics students like to talk about. They use web based communication tools for their instruction so it follows that they could use web-based communication tools to interact with each other outside of the formal classroom. Due to my personal experience I felt the best way to understand if adult learners find their way to becoming satisfied online learners is through the words and experiences of a newly inducted distance, doctoral group of students. Not only were they new to online learning they were also new to doctoral study; either concept on its own requires a change in mindset and can be fraught with self doubt and uncertainty.

Did the Wiki work? Not as far as I am concerned, so I will continue looking for web-based tools that will improve a distance student's satisfaction and sense of presence with online learning. I have stated many times that my six years of graduate study (master's and doctoral) have given me the *ride of my life*. I am still as passionate today about the possibilities that online learning can give a student as I was my first semester as an online student. Online learning changed my life and I have seen it change other students' lives. My goal is to make learning as satisfying to a student as possible. The reason a student chooses online learning versus a traditional on-campus education may

be convenience, but as an educator I want to make that learning experience as dynamic and satisfying as possible, so that the choice to be an online learner turns out to be the best reason a student turns to online learning.

The students in our doctoral cohort experienced many of the same struggles as the students in Cohort III. We didn't discover the use of web-based communication tools until we had been in the program for seven months. The students of this study didn't have to wait that long, therefore they were able to help each other sooner than we were able to. That was one positive result of reflecting on the experiences of the two cohorts. Ideally all 19 students of Cohort III would have used all three web-based communication tools on an escalating basis, but that isn't a real-world expectation as people don't always fit neatly into the same mold.

The finding I think is most important was that three students felt isolated until they participated in a group project. I personally despised doing group work for my classes. I understand the pedagogy behind group work, students learn from each other. My attitude has changed towards group work as a result of this study. If doing a group project helps even one student connect to another student that is a good thing.

I plan to continue investigating ways to help learners adapt to online learning and promote ways to make online learning a dynamic and exciting way to further a person's education.

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APPENDIX A**Interview Questions**

Name

Gender

Age

When were you awarded your Master's degree?

Did you ever take online classes before D@D?

What are your thoughts about learning at a distance?

Do you access class and WebCT[®] from home or work?

Do you have broadband access at home?

Has it been an adjustment for you to be an online student?

Has online learning been different from your initial expectations?

What do you feel has helped you adjust to being an online student?

How is the reality of doctoral study different/same from what you anticipated it would be?

Do you have an understanding of what is expected of you in a doctoral program?

Time commitment

The process to earn your degree

The culture

The work involved

The discipline of Ag Ed

The language of this level of study

Research

Describe your level of understanding of the basic requirements of doctoral study, the rules, the processes, and the expectations?

What is your feeling of proficiency/competence in yourself in meeting the requirements of the D@D program?

What is your feeling of proficiency/competence with doing course work?

What is your feeling of proficiency/competence towards using the technology?

Who do you go to if you need help with the technology?

How do you contact that person/s

Who do you go to for help with questions about your courses or for help with course work?

How do you contact that person/s?

When I presented the Wiki in College Station at your induction, what was your initial reaction to the Wiki?

According to the postings on the Wiki you did/did not use it. Why?

Did you ever go to the Wiki and just read what was posted (lurk)?

Did the information you found on the Wiki help you? How?

What is your reaction to using Centra[®]?

Do you use Centra[®] outside of the scheduled time on Tuesday with the instructors?

Do you ever use IM?

Do you use email to interact with your cohort members?

Do you use a telephone to interact with your cohort members?

How often do you use web-based communication tools to interact with D@D students outside of class time?

When you interact with other D@D students is the contact only about school or is there also an informal social aspect to the communication?

Do you have a favorite tool (MSN[®], Centra[®], Wiki, email) to interact with the other students that you choose to communicate with?

Research shows that a feeling of being part of a community enhances learning, the following statements were developed by McMillan and Chavis to assess your sense of community, and I have adapted them for D@D. Please answer them true/false.

1. I think D@D is very helpful in meeting my needs in flexible delivery.
2. People in D@D seem to share the same values.
3. Other students and I want the same things from D@D.
4. I think that D@D has an appropriate scope in what it tries to do.
5. I can recognize most of the people who participate in D@D.
6. I feel at home in D@D.
7. Many of the other people in D@D know me.
8. Members in D@D welcome other members' documents and suggestions for help, etc.
9. I care about what other members think of my actions in D@D.
10. I feel I have influence over what happens in D@D.
11. I feel that other people in D@D would help me if I requested help.
12. I feel my opinions and ideas are welcomed by others in D@D.
13. It is very important for me to participate in D@D.
14. People in D@D seem generally to get along with each other.
15. I expect to continue in D@D into the future.
16. People in D@D seem to have similar understandings and interests.

Do you think an informal social connection to your cohort members is needed for you to be successful in the D@D program?

Please describe your feelings.

Do you feel that a social connection helps you learn in an informal way outside of the virtual classroom?

Please describe your feelings.

Do you ever share resources (web links, papers you have found, work you have produced, etc.) with other D@D members?

Please describe your thoughts as to the usefulness of web-based communication tools (Wiki, Centra[®], IM, email) in establishing a social connection with your cohort.

Do you feel you fit in with the group of D@D students?

Do you think you could have established a social connection with your cohort members without the F2F in College Station in August?

APPENDIX B

STUDENT CONSENT FORM

Communities of Practice: The utility of using web-based communication tools to assist new adult online learners' transition to formal distance education

You have been asked to participate in a research study regarding the experience of using a Wiki as a tool to help distance students network and build a virtual Community of Practice. You were selected to be a possible participant because you are a new student in the Doc@Distance Cohort III. All new Doc@Distance students have been asked to participate in this study. The purpose of the study is to provide an opportunity to evaluate a web-based communication tool (Wiki) that allows distance students to communicate with each other and help each other in a way that is beneficial to the entire cohort.

If you agree to be in this study, there is no monetary gain or class credit given for participation. You will be asked to log on to the Wiki and post possible questions and answers. In December 2006 you will answer an email survey about your use of the Wiki and your thoughts about the usefulness of the Wiki. In May 2007 you will participate in a recorded interview about your participation in this study. This study is confidential and is being done for a doctoral dissertation. Your responses will be kept confidential. No identifiers linking you to the study will be included in any sort of report that might be published. The answers to the email survey and the recorded interview may be accessed only by René Miller. The survey responses and the recorded interview will be used for this research study only and will be destroyed three years after the conclusion of the study. Research records will be stored securely, and only René Miller will have access to the records. Your decision whether or not to participate will not affect your current or future relations with Texas A&M University or Texas Tech University, and you may withdraw from the study at any time. If you decide to participate, you are free to refuse to answer any questions that may make you uncomfortable. You can contact René Miller at 765-436-7165 (home); at 8639 W 350 N, Thorntown, IN 46071; at r.miller@frontiernet.net or renemiller@tamu.edu or rene.miller@ttu.edu . Also, Dr. Kim E. Dooley, Ms. Miller's doctoral committee co-chair, may be contacted at 979-862-7180 or by email k-dooley@tamu.edu with any questions about this study. You may also contact Dr. David L. Doerfert, Ms. Miller's doctoral committee co-chair, at 806-742-2816 or by email at david.doerfert@ttu.edu .

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Angelina M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979)458-4067, araines@vprmail.tamu.edu.

You have read the above information. You have asked questions and have received answers to your satisfaction. You have been given a copy of this consent document for your records. By signing this document, you consent to participate in the study.

Signature of the Subject: _____ Date: _____
 Signature of the Investigator: _____ Date: _____

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

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8/24/07 11:59 AM

**TEXAS A&M UNIVERSITY
VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE**

1186 TAMU
College Station, TX 77843-1186
1500 Research Parkway, Suite B-150

979.458.1467
FAX 979.862.3176
<http://researchcompliance.tamu.edu>

Institutional Biosafety Committee

Institutional Animal Care and Use Committee

Institutional Review Board

DATE: 22-Jul-2006**MEMORANDUM**

TO: MILLER, RENE P
TAMU-AGRICULTURAL EDUCATION(00006)

FROM: Office of Research Compliance
Institutional Review Board

SUBJECT: Initial Review

**Protocol
Number:** 2006-0421

Title: Communities of Practice: The Utility of Using Web-Based Communication Tools to Assist New Adult Online Learners' Transition to Formal Distance Education

**Review
Category:** Expedited

**Approval
Period:** 24-Jul-2006 To 23-Jul-2007

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46. 110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

Provisions:

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the

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research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.

2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX D

e-Learning Readiness Self-Assessment*

Instructions: For each item below, indicate your agreement with the statement by circling the corresponding value. For each category of statements, calculate your average response by dividing the total value of your responses by the number of items. When you have indicated your response for each item, complete the interpretation table provided at the end of the self-assessment.

- 1 = Strongly Disagree
- 2 = Somewhat Disagree
- 3 = Not Sure
- 4 = Somewhat Agree
- 5 = Strongly Agree

Technology Access	
I have access to a computer with a high speed Internet connection.	1 2 3 4 5
I have access to a fairly new computer (enough RAM, speakers, CD-ROM, DVD drive, etc.).	1 2 3 4 5
I have access to a computer with adequate software (Microsoft Word, Adobe Acrobat, etc.).	1 2 3 4 5
Average response (total ÷ 3)	

Technology Relationship Skills	
I have the basic skills to operate a computer (saving files, creating folders, etc.).	1 2 3 4 5
I have the basic skills for finding my way around the Internet (using search engines, entering passwords, etc.).	1 2 3 4 5
I can send an email with a file attached.	1 2 3 4 5
I think that I would be comfortable using a computer several times a week to participate in a course.	1 2 3 4 5
I think that I would be able to communicate effectively with others using online technologies (email, chat, etc.).	1 2 3 4 5
I think that I would be able to express myself clearly through my writing (mood, emotions, humor, etc.).	1 2 3 4 5
I think that I would be able to use online tools (email, chat, etc.) to work on assignments with learners who are in different time zones.	1 2 3 4 5
I think that I would be able to schedule time to provide timely responses to other learners and/or the instructor.	1 2 3 4 5
I think that I would be able to ask questions and make comments in clear writing.	1 2 3 4 5
Average response (total ÷ 9)	

Motivation	
I think that I would be able to remain motivated even though the instructor is not online at all times.	1 2 3 4 5
I think that I would be able to complete my work even when there are online distractions (friends sending emails, websites to surf, etc.).	1 2 3 4 5
I think that I would be able to complete my work, even when there are distractions in my home (television, children, and such).	1 2 3 4 5
Average response (total ÷ 3)	

Online Video/Audio	
I think that I would be able to relate the content of short video clips (1 to 3 minutes typically) to the information I have read online or in books.	1 2 3 4 5
I think that I would be able to take notes while watching a video on the computer.	1 2 3 4 5
I think that I would be able to understand course-related information when it's presented in video format.	1 2 3 4 5
Average response (total ÷ 3)	

Internet Discussions	
I think that I would be able to carry on a conversation with others using the Internet (Internet chat, instant messenger, etc.).	1 2 3 4 5
I think that I would be comfortable having several discussions taking place in the same online chat, even though I may not be participating in all of them.	1 2 3 4 5
I think that I would be able to follow along with an online conversation (Internet chat, instant messenger, etc.) while typing.	1 2 3 4 5
Average response (total ÷ 3)	

Success Factors	
Regular contact with the instructor is important to my success in online coursework.	1 2 3 4 5
Quick technical and administrative support is important to my success in online coursework.	1 2 3 4 5
Frequent participation throughout the learning process is important to my success in online coursework.	1 2 3 4 5
I feel that prior experiences with online technologies (email, Internet chat, online readings, etc.) are important to my success with an online course.	1 2 3 4 5
The ability to immediately apply course materials is important to my success with online courses.	1 2 3 4 5
Average response (total ÷ 5)	

After completing the e-Learning Readiness Self-Assessment, review the Scoring and Interpretation Sheet.

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APPENDIX E

e-Learning Readiness Self-Assessment Scoring and Interpretation Sheet

As you completed the e-Learning Readiness Self-Assessment, you should have calculated your average response for each section as you went. This is calculated by dividing the total (the sum) of each section by the number of items included in the section. Enter these averages in the table below:

Your Score	Section of Self-Assessment
	Technology Access
	Technology Relationship Skills
	Motivation
	Online Video/Audio
	Internet Discussions
	Success Factors

If your average score in any area was a 3 or below, please review the following recommendations.

Technology Access

Without adequate access to the technology required in an online course, completing course assignments and engaging with other learners in the course can be challenging. If you have limited access to technology, you should examine alternative resources (such as public libraries, Internet cafes, or local schools) and establish a technology contingency plan just in case you have to complete an online assignment quickly if your technology fails. In addition, contact your instructor at the beginning of the course to verify which software and hardware will be required and what technology resources are provided.

Technology Relationship Skills

Developing positive online relationships is central to an interactive online course. If your scores in this area were low, you will likely want to develop some strategies for addressing those concerns early in the course (for example, making a good first impression online, adding personal touches to online messages, developing online study groups, staying organized and on schedule). Each of the skills that you develop can be helpful in creating a positive online environment where you can work effectively with your peers.

Motivation

Staying motivated is challenging in almost any course, online or in the classroom. For those learners who have not established good study habits and positive support systems, staying motivated can be even more challenging. Identify friends, family, and peers who

can provide you with the motivational support that you may require in completing current and future courses. In addition, try to identify those learners in the course with a positive attitude; their positive outlook can be much more useful to you as the course goes on than the negative attitudes that some learners may bring to every online conversation.

Online Audio/Video

If your course utilizes streaming audio or video, then having the necessary study skills to be successful with this technology is essential. If you scored low in this area, and your course facilitator plans to use the technology, you should practice using the technology, taking notes, and studying from the audio/video before your first lesson using the technology. You don't want to waste time or miss any essential points because you didn't develop good study habits for the times when these technologies were in use (just as you wouldn't want to miss taking notes in a traditional lecture because you weren't prepared).

Internet Discussions

Most of the interactions that you will have with your facilitator and peers in an online course will be through Internet discussions (email, asynchronous discussion boards, synchronous chats, and so on). You should develop useful skills for effectively communicating through each type of technical media used in your online course. Have strategies for getting your point across, gaining the attention of others, archiving the conversation, discussing challenging topics without offending other learners, and so forth.

Success Factors

Many factors lead to success in online courses. Your individual study preferences, expectations, and previous experiences will all play a role in your success in current and future online courses. If you have concerns in any of these areas, you should discuss those with your facilitator before committing to a course.

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APPENDIX F

Personality Profile

There are no 'right' or 'wrong' answers. This questionnaire will help you to determine your preferred social style. The results will provide an insight into:

- A new awareness about yourself
- Resolve conflicts with others
- A greater understanding of others
- Your style vs. career demands
- A more effective team building
- Understanding mate and family

CIRCLE ONE WORD OR PHRASE PER LINE THAT DESCRIBES YOUR BEHAVIOR STYLE

- | | | | |
|-----------------|--------------|-----------------|---------------|
| 1. ASSERTIVE | CONFORMING | SENSITIVE | TRUSTING |
| 2. SPONTANEOUS | CONSULT | CONCEPTUAL | ANALYZE |
| 3. INVOLVED | SYSTEMATIC | DIRECT | EXPLORE |
| 4. STUBBORN | DICTORIAL | REBELLIOUS | DEPRESSED |
| 5. DEMANDING | MANIPULATIVE | UNCOOPERATIVE | SILENT |
| 6. ARTICULATE | IDEA PERSON | RESISTS CHANGE | AUHTORITY |
| 7. CAUTIOUS | KINDHEARTED | HARMONY | ACTIVE |
| 8. CARING | OUTSPOKEN | CONSISTENT | MILD |
| 9. CONVINCING | AGGRESSIVE | DISCIPLINED | POSSESSIVE |
| 10. DARING | DREAMER | OBEDIENT | PARTICIPATING |
| 11. LOGICAL | SATISFIED | FRIENDLY | BOLD |
| 12. EAGER | IMAGINATIVE | ACCURATE | POPULAR |
| 13. RESERVED | INNOVATIVE | FORCEFUL | OPTIMISTIC |
| 14. POWER | TEAMWORK | INDIVIDULAISTIC | CONSERVATIVE |
| 15. TALKATIVE | RESTLESS | ATTENTIVE | MODEST |
| 16. LEADER | COUNSELOR | DESIGNER | CONTROLLER |
| 17. METHODOICAL | WORKAHOLIC | HELPFUL | SELF-DIRECTED |
| 18. INDUSTRIOUS | DETAILED | MENTALLY ACTIVE | HOPEFUL |
| 19. TASK | PEOPLE | IDEA | RESULT |
| 20. EMOTIONAL | FLEXIBLE | RECOGNITION | PRECISE |
| 21. IRRITABLE | RIGID | RESENTFUL | THREATENED |
| 22. INDIRECT | FRANK | CAREFUL | EXACT |

CIRCLE ONE WORD OR PHRASE PER NUMBER THAT DESCRIBES YOUR BEHAVIOR STYLE

23. GOAL ORIENTED COMPETENT AND STEADY	VOLUNTEERS FOR JOBS SCHEDULE ORIENTED
24. EXCELS IN EMERGENCIES DRY SENSE OF HUMOR	THRIVES ON COMPLIMENTS AVOIDS CAUSING ATTENTION
25. ENJOYS WATCHING PEOPLE ENERGY AND ENTHUSIASM	STRONG WILLED, DECISIVE PERFECTIONIST, HIGH STANDARDS
26. MAKES FRIENDS CAUTIOUSLY VERY SELF CONFIDENT	STARTS IN A FLASHY WAY PERSISTENT
27. NEAT AND TIDY AVOIDS CONFLICTS	LOOKS GOOD ON THE SURFACE IS USUALLY RIGHT

APPENDIX G

Personality Profile Summary Sheet

Record the number of each color from the 27 item inventory:

Totals: Red _____ Yellow _____ Blue _____ Green _____

1. RED	GREEN	BLUE	YELLOW
2. RED	YELLOW	BLUE	GREEN
3. YELLOW	GREEN	RED	BLUE
4. GREEN	RED	YELLOW	BLUE
5. RED	YELLOW	GREEN	BLUE
6. YELLOW	BLUE	GREEN	RED
7. GREEN	BLUE	YELLOW	RED
8. YELLOW	RED	GREEN	BLUE
9. YELLOW	RED	GREEN	BLUE
10. RED	BLUE	YELLOW	GREEN
11. GREEN	BLUE	YELLOW	RED
12. RED	BLUE	GREEN	YELLOW
13. GREEN	BLUE	RED	YELLOW
14. RED	YELLOW	BLUE	GREEN
15. YELLOW	RED	GREEN	BLUE
16. RED	YELLOW	BLUE	GREEN
17. GREEN	RED	YELLOW	BLUE
18. RED	GREEN	BLUE	YELLOW
19. GREEN	YELLOW	BLUE	RED
20. BLUE	YELLOW	RED	GREEN
21. RED	GREEN	BLUE	YELLOW
22. YELLOW	RED	BLUE	GREEN
23.	RED BLUE	YELLOW GREEN	
24.	RED BLUE	YELLOW GREEN	
25.	BLUE YELLOW	RED GREEN	
26.	BLUE RED	YELLOW GREEN	
27.	GREEN BLUE	YELLOW RED	

APPENDIX H

Understanding Yourself and Others Personality Profile by Anita Reed

Everyone is OK. There are no 'right' or 'wrong' or 'good' or 'bad' answers.
 If you score 9 or 10 or above, you are strong or high in that personality color.
 If you score 3, 2, or 1, you do not usually exhibit those personality characteristics.
 If you score a split such as 7-7-7-8, you have a wonderful combination or could be termed "wishy-washy".

RED CHARACTERISTICS:

impatient	high energy level
competitive	2 speeds, "on" and "off"
direct	blunt
frank	determined
want to "win"	very goal-oriented
like trophy or plaque	enjoy individual sports
often drives flashy red sports car	

YELLOW CHARACTERISTICS:

social	talk to anyone anytime and anywhere
optimist	often cheerleaders
happy	people-oriented
likes to share	often extravagant
good in PR	make great sales persons
never down	
usually has high long distance telephone bills	
usually drives a 4-door big car or van	

BLUE CHARACTERISTICS:

sensitive	people-oriented
creative	very affectionate
caring	easy to cry
artistic	cries at sad movies
fears criticism	likes to smell the flowers
could be a paid mourner	usually has 5 close friends
usually drives a 4-wheel drive vehicle	

GREEN CHARACTERISTICS:

detailed	do "it" right the first time
very task oriented	loves computers
precise	loves to read
analytical	saves everything
systems approach	wonder cook
conservative	spices arranged in alphabetical order
likes research	balances checkbook to the penny
thrifty	buys last year's model & pays cash

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