

THE INFLUENCE OF CLASSROOM COMMUNITY AND SELF-DIRECTED
LEARNING READINESS ON COMMUNITY COLLEGE STUDENT
SUCCESSFUL COURSE COMPLETION IN ONLINE COURSES

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Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

August 2011

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Cervantez, Vera A. The influence of classroom community and self-directed learning readiness on community college student successful course completion in online courses. Doctor of Philosophy (Higher Education), August 2011, 149 pp., 8 tables, references, 245 titles.

The relationships between community college students' sense of community, student self-directed learning readiness, and successful completion of online courses were investigated using a correlational research design. Rovai's Classroom Community Scale was used to measure classroom community, and the Fisher Self-directed Learning Readiness Scale was used to measure self-directed learning readiness, including three subscales of self-management, desire for learning, and self-control. The study participants were 205 students (49 males, 156 females; 131 White, 39 Black, 15 Asian, 10 Latino, 10 Multi-racial, 1 Native American) taking online courses during a summer term at a Texas community college. The research hypotheses were tested using Pearson r correlation coefficients between each of the seven independent variables (student learning, connectedness, classroom community, self-management, desire for learning, self-control, and self-directed learning readiness) and student successful course completion data. Contrary to prior study results, no association was found between students' sense of community in online courses and student successful course completion. Although statistically significant differences were found between successful course completion and self-management ($r = .258$), desire for learning ($r = .162$), and self-directed learning readiness ($r = .184$), effect sizes were small suggesting a lack of practical significance. Possible reasons for the outcome of this study differing from prior research include relatively shorter semester length (summer term) during which data were collected and relatively smaller sample size.

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CHAPTER 1

INTRODUCTION

Technology-based innovation and new ideas in learning have created the modern era of distance learning. The Internet and World Wide Web have made it possible to transcend the walls of traditional classrooms in almost unimaginable ways. Students cannot only contact their instructors via email but they can also access their classroom environment with voice recognition, video technology, and group Netware, and they can do all this in the comfort of their own homes or offices.

The demands of a fluid, information-driven society are increasingly requiring new skills and knowledge in the workplace. Adults are faced with the necessity of continuing education to keep up with these new demands. As a result part-time students are the fastest growing population in higher education (National University Continuing Education Association, 1994), and the need for convenient distance learning programs is intensified. Adult students comprise much of the distance learning population. However, the distance learning population is shifting toward younger students, local residents, and those with full time course loads that combine distance learning with on-campus courses (Wallace, 1996). To meet this demand, distance learning is visibly increasing at both 2-year and 4-year post-secondary institutions in the United States (Snow, Farris, & Levin, 1999).

Distance learning, where students and instructors are separated by physical distance and communicate with each other through communication networks, is defined by the Southern Association of Colleges and Schools (SACS) for the purposes of the commission's accreditation review as:

A formal educational process in which the majority of the instruction (interaction

between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may employ correspondence study, or audio, video, or computer technologies. (Southern Association of Colleges and Schools, 1997)

With the growth of distance learning through online delivery comes a need to examine the phenomenon of Internet-based courses (Schrum, 1998). Existing research has been largely focused on technical issues while less attention has been given to students' experiences in the learning environment (Hara & Kling, 1999; Schrum, 1998). Howland and Moore (2002) stated that the importance of research lies in examining students' experiences as online learners, thereby increasing educators' understanding of students' needs in order to provide optimal educational environments and opportunities for distance learners.

In exploring the characteristics of distance learning in online classes for this study, there were two main considerations. The first was a possible relationship between students' sense of classroom community and student successful course completion. The second was a possible relationship between student self-directed learning readiness and student successful course completion. Whether or not there is a relationship between student successful course completion in online courses and student's sense of community as measured by the Classroom Community Scale (CCS; Rovai, 2002c) was examined in this study. Possible influences on student successful course completion were also examined by looking at student self-directed learning readiness using the Self-directed Learning Readiness Scale (SDLRS).

This chapter introduces the proposed research and presents the purpose of the study which was to determine if there is a relationship between a sense of community and student successful course completion in online courses and/or between student self-directed learning

readiness and student successful course completion in online courses. Chapter 1 also outlines the research questions and highlights the conceptual framework for the investigation. The chapter concludes with sections on the significance of this research project, delimitations, limitations, and assumptions that guided this study.

Evolution of Distance Learning

Distance learning has been around for over two centuries. Through the years it has served students who have not been able to attend traditional classes due to a variety of reasons including course location, life commitments, family responsibilities, and health issues. The United States Distance Learning Association has defined distance education as the “acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance” (as cited in Bower & Hardy, 2004). This definition specifically points out that distance learning has encompassed a variety of learning media from the postal service to various forms of electronic transmission.

Correspondence study, the first form of distance learning, allowed students to correspond with the instructor via postal mail. Students who were located many miles from the educational institution, had health issues which would preclude them from physically attending class, had long work hours, or had ‘round-the-clock’ family commitments were very interested in this type of learning. Segments of the population that normally were not allowed to attend school frequently used this type of learning. In fact, women’s desire for an education greatly impacted the growth of correspondence study in the 18th and 19th centuries. The earliest record of this type of educational delivery was seen in the *Boston Gazette* on March 20, 1728, with the offering of weekly lessons in shorthand (Bower & Hardy, 2004). However, even with all this interest, it

was over 100 years later before an established institution of higher education offered distance learning of this sort (Holmberg, 2002).

Two individuals, Charles Wedemeyer of the University of Wisconsin and Gayle Childs of the University of Nebraska, played major roles in the advancement of distance learning research in the field of correspondence study (Wright, 1991). They not only provided leadership to their universities' correspondence programs, but they also provided direction for the national and international growth of this method of teaching and learning. Both men made major contributions in the Correspondence Study Division of the National University Extension Association (NUEA) and Internal Conferences on Correspondence Education.

Due to advances in technology as well as postal system limitations, distance learning delivery moved from using postal mail to using radio transmissions and audio recordings in the early 1900s. According to Simonson, Smaldino, Albright, and Zvacek (2000), almost 200 American radio stations delivered distance education content to the masses during the 1920s. This method was soon lessened due to new visual technology, including television broadcasts, in the middle 1900s.

The combination of satellite technology in the 1960s and fiber-optic transmission media in the 1980s allowed for the duplex (two-way) transmission of online courses. The Internet has enabled asynchronous (duplex communication with a time delay) and synchronous (duplex communication with no time delay) communications, which have provided real-time student-to-student and student-to-instructor interactions (Bower & Hardy, 2004). Today, this newly created virtual learning environment has allowed students great flexibility in determining the time and location for academic study, giving them the freedom to fit their education into their busy lives and schedules.

Distance Learning and Student Course Completion (Retention)

Distance learning critics are quick to assert that completion rates (i.e., the retention of students) are lower in distance learning courses than in traditional courses (Howell, Laws, & Lindsay, 2004). With this in mind if distance learning courses really do have lower completion rates, some attribute the difference to the lack of faculty-student interaction, while others say it is impossible to compare the two groups, because distance learning students are inherently different from traditional students (e.g., older with additional commitments; Carr, 2000). In the absence of any generally accepted standard algorithm for calculating completion rates for both types of learning, analyzing completion rates is best done by comparing distance learning to distance learning and traditional learning to traditional learning at the specific course and program level (Howell et al., 2004).

While many authors have revealed wide variance in completion rates between the two types of course delivery, additional research focusing on the specific dynamics that influence completion and retention appear to be more consistent and helpful. Kemp (2002) found that “the adult distance learner may be affected by a variety of internal and external factors that account for the continuance/discontinuance in their studies” (p. 65). Wlodkowski found that “better social integration with peers correlates with persistence” and noted that “research findings from other studies confirm that positive involvement with peers and faculty encourages adult students to persist” (p. 12). Additionally, Tinto (1993) suggested that students increase their level of satisfaction and the likelihood of persisting in a college program if they feel involved in the learning community and develop relationships with other members of the community. In looking at these studies, it appears that improving a sense of community in an online environment may be an important contributing factor to reducing dropout rates (Braxton, Vesper, & Hossler,

1995). Following that thought, there is a need to understand what “community” means in distance learning environments so that educators can promote a better sense of community (Rovai, 2001a).

Distance Learning and a Sense of Community

McMillan and Chavis (1986) defined community 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). Westheimer and Kahne (1993) defined a sense of community as a result of interaction and deliberation of people brought together by similar interests and common goals. Graves (1992) defined sense of community as a cohesive, yet self-reflective, group. Drawing on research literature, the concept of learning community is applied to the virtual classroom by examining the issue of how best to design and conduct an online course that fosters community among learners who are physically separated from each other (Rovai, 2002a).

Rheingold (1991) and Hill (1996) believed that the dimensions of community differ from setting to setting suggesting that sense of community is setting specific. One such setting is the classroom, whether physical or virtual. Drawing on the definitions of community provided above, an online classroom community can be constitutively defined in terms of four dimensions: spirit, trust, interaction, and commonality of expectation and goals (i.e., learning; (Rovai, 2002a). To measure whether a sense of community exists or not, Rovai developed the Classroom Community Scale (CCS) to determine students’ sense of classroom community. The CCS is sensitive to differences in sense of community within a higher education population.

Distance Learning and Student Self-direction

Student-to-student and student-to-instructor interactions also influence student self-direction on the assumption of shared control based on dynamic communication among the teacher, learners, and the curriculum (Lee & Gibson, 2003). Garrison's comprehensive model (1997a) represents three dimensions of student self-direction: control, critical reflection, and responsibility. These three components of self-direction are connected to each other through student-to-student and student-to-instructor interactions. Lee and Gibson established a close relationship between interaction and self-direction and referred to the importance of interaction in students developing self-direction. Future research should explore components of these diverse perspectives on self-direction and the relationship between interaction and self-direction.

Self-directed learning (SDL) is a method of instruction used increasingly in adult education (Fisher et al., 2001). SDL can be viewed in terms of the amount of responsibility learners accept for their own learning. Readiness for SDL exists along a continuum and is present in all individuals to some extent. Literature supports the contention that matching teaching delivery with SDL readiness offers the best opportunity for learning (Grow, 1991; Guglielmino, 1977; O'Kell, 1988; Wiley, 1983).

Distance Learning and Student Successful Course Completion

Online education requires learners to be self-directed, intrinsically motivated, and have practical knowledge of computer technology (Irizarry, 2002). Students are influenced by perception of individual ability, motivation, self-beliefs, and teaching practices, which can account for the differences between online and on-campus students' behaviors and can determine their successful or unsuccessful course completion. Diaz and Cartnal (1999) compared student learning styles in on-campus students and online students. Online students appeared to be driven

more by intrinsic motives and not by any reward structure of the class. Diaz and Cartnal reiterated the idea that internally motivated students are often the same students who complete online instruction:

It is not surprising that students who prefer independent, self-paced instruction would self-select into an online class. It may be that the distance education format appealed to students with independent learning styles, and that independent learning preferences are well suited to the relative isolation of the distance learning environment. (p. 134)

Additionally, self-motivation can be enhanced with well-designed online instruction which encourages students to be self-directed learners. External factors influence a student's successful course completion. Robert Knipe, Dean of Learning Technologies at Genesee Community College, undertook a study to learn what factors are most critical in predicting success in online courses and looked at factors in the college's sphere of influence that may predict which students are at risk for failing to persist (Hill, 2010). Hill reported from Knipe's research that the top five factors turned out to be: (1) the time of student registration; (2) poor or nonexistent advertising; (3) student age; (4) instructor/class engagement; and (5) developmental needs such as reading, writing, math, and study skills.

Statement of the Problem

With the rapid increase of online education in the last 20 years due to advanced technology and its growing popularity, new responsibilities for adult learners along with heightened interest of experts and educators for quality courses have grown. Simultaneously, with funding tied closely to student enrollment and accreditation dependent on course quality, completion rates have become a significant measure in higher education (Howell et al., 2004). In looking at completion rates (i.e., the retention of students) in distance learning, critics are quick

to assert that these rates are lower in distance learning courses than they are in traditional courses (Howell et al., 2004). These statistics point out a possible area needing further research investigating: What could influence the retention of students in distance learning in order to increase it? This is the problem for this study. The results of this study create a deeper understanding of the role of the instructor and/or the course designer in incorporating best practices in online courses to promote a stronger sense of community and/or student self-directedness, thus raising the likelihood of student successful course completion.

Research Questions

The focus of this study was to investigate whether a sense of community influences student successful course completion and whether self-directed learning readiness influences student successful course completion in online courses. The following research questions guided this investigation:

- 1) Does sense of classroom community influence student successful course completion in online courses?
- 2) Does self-directed learning readiness influence student successful course completion in online courses?

The first research question was investigated based on Rovai's (2002a) definition of a sense of community which was extensively researched by Rheingold (1991) and Hill (1996). Class community was constitutively defined in terms of four dimensions: (1) spirit, recognition of membership in a community and bonding that develops among learners; (2) trust, credibility for one's own self and benevolence for others in a group; (3) interaction, task-driven directed toward completion of assigned tasks and socio-emotional directed toward self-generated learner relationships; and (4) common expectations (i.e., learning), a common purpose of the

community. Rovai (2002c), therefore, said that members of strong classroom communities have feelings of connectedness and possess a shared faith that members' educational needs will be met through their commitment to shared learning goals. The second research question was investigated based on Fisher et al.'s (2001) definition of self-directed learning readiness measured by the three subscales of self-management, desire for learning, and self-control.

Conceptual Framework

In setting up a conceptual framework for this study research, focus was placed on the specific dynamics that influence student successful course completion in traditional education. Wlodkowski (2003) found that better peer-to-peer social integration correlates with student persistence. Additionally, Tinto (1993) suggested the likelihood of students persisting in a college program is higher if they feel involved in the learning community. In looking at these studies, it appears that improving a sense of community in an online environment might be an important contributing factor in reducing dropout rates (Braxton et al., 1995). This observation led to the question of whether providing a sense of community possibly influences student successful course completion in online courses.

Lee and Gibson (2003) established a close relation between student-to-student and student-to-instructor interactions, and the student self-direction findings suggested the importance of interaction in developing self-direction. The shift to a dependence on written communication in online courses has been seen as contributing to a difficulty in building collaborative relationships among students (Besser & Bonn, 1996). In looking at these studies, it appears that in an online environment self-directed students could be a factor in raising student retention. This observation leads to the question of whether self-directed students could possibly influence the level of student successful course completion in online courses.

The influence of a sense of community on student successful course completion and of self-directed learning readiness on student successful course completion in the online class environment was investigated in this study. Rovai's definition of classroom community, described by four dimensions as listed above including resulting feelings of connectedness and learning, provided a framework for thoroughly investigating a class sense of community. Rovai's (2002c) Classroom Community Scale (CCS) was used to measure a classroom community. The Self-directed Learning Readiness Scale (SDLRS) by Fisher et al. (2001) was used to measure self-directed learning readiness by measuring self-management, desire for learning, and self-control.

The following section, definition of terms, lists definitions of concepts essential in providing the background for understanding this study. The list is by no means exhaustive. Instead, the key concepts of the study as noted and used in the literature are provided.

Definition of Terms

Distance learning or distance education. A formal educational process in which the majority of the instruction (e.g., interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may employ correspondence study, or audio, video, or computer technologies (Southern Association of Colleges and Schools, 1997).

Self-directed learning readiness. "The degree to which the individual possesses the attitudes, abilities, and personality characteristics necessary for self-directed learning" (Wiley, 1983, p. 182, as cited in Fisher et al., 2001).

Sense of community. Class community has four dimensions: (1) spirit, recognition of

membership in a community and bonding that develops among learners; (2) trust, credibility for one's own self and benevolence for others in a group; (3) interaction, task-driven directed toward completion of assigned tasks and socio-emotional directed toward self-generated learner relationships; and (4) common expectations (learning), a common purpose of the community (Rovai, 2002a).

Student successful course completion. Student successful course completion is defined by this study as the number of students enrolled in an online credit course after the withdrawal date and obtaining a grade of C or better making the course transferable.

Significance of the Research

Recent research on the ongoing comparison between distance and traditional education has exposed problems including limitations in research design, differences in student demographics, and inconsistent methods of calculating and reporting successful course completion. These weaknesses suggest that educators may be metaphorically comparing distance learning oranges to traditional education apples in ways that are invalid and unfair to distance learning (Howell et al., 2004). With funding tied closely to student enrollment and accreditation dependent on course quality, successful course completion (or retention) rates at the course level have become a significant measure in higher education (Howell et al., 2004).

Higher education administrators watch completion numbers for their traditional programs closely as they analyze student progression or throughput to better balance student, staff, and faculty needs, numbers, and resources. In recent years, and with the growth of distance learning, many of these administrators have expressed the same interest and concerns for distance learning. Debate continues on whether and why offering distance learning courses leads to higher non-completion rates. With the problems in distance learning research as mentioned above, the

more important result of this study might lead to a shift in interest from comparisons to an emphasis on identifying and promoting best practices for improving successful completion rates.

Delimitations

The delimitations for this study were as follows:

1. The chosen population was all online classes during the semester of data collection at a community college district located in North Texas.
2. Retention rates included all students who completed the online courses, even those who did not pass.

Limitations

The limitations for this study are as follows:

1. The data were self-reported by students.
2. The students who participated in the survey were volunteers. The data will be subject to volunteer biases (Gall, Borg, & Gall, 1996).
3. Instructors' teaching techniques might have differed in the online environment and might have impacted the way sense of community was or was not established.
4. The results might not be generalizable to other community or 4-year colleges online courses.

Assumptions

In conducting this research, the following assumptions were made:

1. The participants answered the self-administered online survey items honestly.
2. Professors made every effort to build a sense of community in their online courses.
3. Students enrolled in online courses genuinely desiring to complete the courses.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this study was to investigate whether building a sense of community in an online class impacts course level student retention. Therefore, this chapter depicts theory and research related to building a sense of community and whether student-to-student and/or student-to-instructor interactions in an online classroom community may influence student self-direction. The first two sections provide definitions of distance education and discuss the evolution of distance learning. New requirements for research on the online world and theories and perspectives on the importance of interaction in distance learning are discussed. The third section examines community and theory on building a community. The fourth section offers the literature on course retention in distance learning and problems with comparisons to retention in traditional on-campus classes. The last section highlights student satisfaction as it relates to student-to-student and/or student-to-instructor interaction and discusses how it relates to student self-direction.

Defining Distance Learning

Almost every definition of distance learning identifies students and instructors as being separated by physical distance and communicating with each other through some type of communication network. Rawson-Jones (1974) described distance education as the sum of distance learning and distance teaching. The Southern Association of Colleges and Schools (SACS, 1997) defined distance education as:

Distance education is a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be

synchronous or asynchronous. A distance education course may employ correspondence study, audio, video, or computer technologies. (p. 1)

The United States Distance Learning Association (n.d.) defined distance education as “the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance” (para. 3).

The Texas Higher Education Coordinating Board (THECB, 2009) defined distance education as that which occurs when the students and instructor are not in the same physical setting for the majority of instruction. According to the THECB, a distance education course can be delivered synchronously or asynchronously to any single or multiple locations through electronic modes (e.g., the Internet, video conferencing, or television broadcasts), by correspondence, or via other means. No matter which way the concept is considered, distance learning is fundamentally the same even though the means of transmission as well as the students have changed over the years. This evolution in technology for delivery has required ongoing changes to pedagogical methods.

Evolution of Distance Learning

During the 19th century, printed materials sent through the mail comprised the main way distance education was conducted. The first form of distance learning was called correspondence study and was a method of exchanging assignments, assessments, and notes via postal mail between the instructor and student. As cited in Nasseh (1997), Anna Ticknor (1891) created a society to encourage home study for educational opportunities for women of all societal classes in 1873. This Boston-based largely volunteer effort provided correspondence instruction to 10,000 members over a 24-year period despite maintaining a relatively low profile. *Harper's Weekly*, in 1883, reported that Cornell University's participation in the Correspondence

University seemingly had drawn inspiration from Ticknor's Society to Encourage Studies at Home. Professors from various colleges, from Harvard University to Johns Hopkins University and to the University of Wisconsin united to form the Correspondence University with the purpose of instruction by correspondence. However, the word university was applied to a range of studies, rather than to the organization, which was not chartered and did not grant degrees. The Correspondence University quickly and quietly faded (Gerrity, 1976). The first official recognition of education by correspondence came from 1883 to 1891 by Chautauqua College of Liberal Arts. The state of New York authorized the college to grant academic degrees to students who successfully completed work at the summer institutes and by correspondence during the academic year (Watkins & Wright, 1991).

The growth of correspondence study led to interest regarding its effectiveness versus traditional study, and it became the subject of much debate and discussion. Watkins and Wright (1991) wrote that William Rainey Harper, professor of Hebrew at Yale University, who was authorized from 1883 to 1891 to grant degrees to students who completed correspondence study, believed that correspondence study "would not, . . . supplant oral instruction, or be regarded as its substitute" (p. 4). Others of Harper's day disagreed. As Watkins and Wright (1991) noted Vincent predicted:

The day is coming when the work done by correspondence will be greater in amount than that done in the classrooms of our academics and colleges; when the students who shall recite by correspondence will far outnumber those who make oral recitations. (Vincent, 1885, pp. 92-93, as quoted on p. 4)

In the late 19th century, Thomas J. Foster, a newspaperman, recognized that working adults could better themselves if they had a convenient way to learn more advanced skills. Foster

began developing correspondence courses to help them gain the knowledge they needed to earn promotions to higher positions. Foster's efforts marked the beginning of the International Correspondence School (ICS) in Scranton, Pennsylvania. By 1894, ICS was offering courses to students in Mexico, America, and Australia (Education Direct, n.d.). Known today as Education Direct, the school continues to provide a large number of distance education programs via correspondence (Bower & Hardy, 2004).

As correspondence continued to grow, researchers began to look at new issues that came with it. In 1915 the creation of the National University Extension Association (NUEA) broadened the focus to other issues, such as necessity of new pedagogical models and new national level guidelines, including university policies regarding course acceptance, credit transfer, and standard quality for educators. Finally, in 1933 the findings of the University of Chicago faculty survey showed that correspondence study should be justified on an experimental basis, generating innovations and research data leading to improvements in teaching methodology (Gerrity, 1976). The University of Chicago research study was very important for the future knowledge base in the correspondence field, because even though mail had been a dominant education delivery system for over 40 years, new delivery technologies had started to provide additional options for correspondence study (Nasseh, 1997). Even though lantern slides and motion pictures added to visual instruction in the period of 1910 to 1920 the most promising new technology for correspondence instruction at the time was instruction through radio transmissions (Pittman, 1986).

In the years between the World Wars (1918-1941), the federal government granted radio broadcasting licenses to 202 colleges, universities, and school boards. However, by the year 1940, only one college-level credit course was offered by radio and that course failed to attract

any enrollments (Atkinson, 1941). Still, the concept of education by radio was a major reason for development of educational television by the mid-20th century. In the 1950s Western Reserve University became the first U.S. institution to offer a regular series of television courses (Simonson et al., 2000).

During the 1960s and 1970s, a number of alternatives to traditional higher education were developed in the United States. These alternatives occurred due to broad national trends that included rapidly escalating costs of traditional residential higher education, interest in informal and nontraditional education, an increasingly mobile American population, the growth of career-oriented activities, the necessity of learning new competencies, public dissatisfaction with educational institutions in general, and the early success of Britain's Open University (Gerrity, 1976).

The founding of the British Open University in 1969 can be said to have marked the modern movement in distance education. It offered "full degree programs, sophisticated courses, new media and systematic systems evaluation" (Holmberg, 2002, p. 9). This university sparked similar programs around the globe, generated public recognition, and conferred prestige on distance education (Bower & Hardy, 2004).

By the mid 1900s many research studies began contributing to the growth of the knowledge base of distance education. During the fifth International Conference on Correspondence Education (ICCE), in Alberta, Canada, delegates reflected growing interest in the research of correspondence study (National University Extension Association [NUEA], 1957). With a Ford Foundation grant, Gayle Childs initiated a project in 1956 to study the application of television instruction in combination with correspondence study. Childs concluded "television instruction is not a method. Television is an instrument by means of which instruction

can be transmitted from one place to another” (Almenda, 1988). Childs also found no appreciable differences in regular classrooms by means of television or by the combination of correspondence study and television (Almenda, 1988).

The first United States open university was New York State’s Empire State College, which commenced operation in 1971 (Gerrity, 1976). One of the main purposes of the Empire State College was to make higher education degrees more accessible to learners unable to attend traditional programs or campus-based courses. Providing a direction for advancement of research in distance learning was also a major concern in this field. Two individuals who played major roles in the advancement of the state of scholarly research in the field were Charles Wedemeyer of the University of Wisconsin and Gayle Childs of the University of Nebraska (Wright, 1991). Wedemeyer and Childs were recognized as leaders of the distance learning research movement throughout the 1950s, 1960s, and 1970s (Wright, 1991). They not only provided needed leadership to their universities correspondence programs but also provided direction for the national and international growth of this method of teaching and learning.

Two-way live transmission of educational courses became possible with the combination of satellite technology introduced in the 1960s and fiber-optic systems added in the late 1980s (Simonson et al., 2000). These two technologies laid the foundation for the Internet and were the newest vehicle through which institutions offered distance courses to students.

The Internet has allowed institutions to deliver both asynchronous (two-way communication with time delay between transmission and receipt such as email and bulletin board postings) and synchronous (two-way communication without extended time delay) class activities, such as chat sessions and online discussions. The Internet has provided students with

access to class materials, the latest research, and current news events. With the Internet, students can interact with other students and with their teachers (Bower & Hardy, 2004).

In the mid-1960s, the development of the Correspondence Education Research Project offered a major hope for more research and defining the status of correspondence study in American higher education (Nasseh, 1997). In 1968, the Correspondence Study Division of the NUEA changed its name to the Division of Independent Study because the new term acknowledged more options for the delivery of education in the form of videotapes, programmed instruction, television broadcasting, telephone calls, and other multimedia teaching and learning techniques (NUEA, 1969).

In the last 20 years, with the advancement in technology, independent study has become more accessible for distance learning students. Zigerell (1984) wrote that “the ease with which modern communications technologies can link educational institutions to homes, work-sites, and community centers has made adult education and lifelong learning matters of national policy” (p. 53). Yet the convenience and ease of accessing an online education continues to bring new responsibilities to adult learners and has heightened experts’ and educators’ interest in it.

Feasley (1983) stated that individuals who must learn at a distance have ongoing obligations such as employment, family responsibilities, handicaps, or live in geographically isolated areas. Because of this, online education must not only be available to these students but must also consist of quality courses. When the cable and satellite television came into use as a delivery medium for distance learning in the 1970s and 1980s (Wright, 1991), many quality telecourse offerings were made available. But as Munshi (1980, as cited in Nasseh, 1997) said, systematic efforts for evaluating telecourses were the exception rather than the rule, which was unfortunate for students.

More and more association and social support developed for distance education around the country. Packing companies, railroads, the American Banking Association, Labor Unions, the Army and Navy, and state and national welfare associations recognized the merits of distance learning (Watkins & Wright, 1991). With growing popularity and need for distance learning, new questions surfaced regarding learners' characteristics, students' needs, effectiveness of communication, and the value of outcomes in comparison with face-to-face study. These became public interests. From these questions emerged needed research initiatives (Watkins & Wright, 1991).

The Community College and Distance Learning

The American community college dates back to the early 1900s. The social forces that it has served range from the need for workers to be trained, the lengthened period of adolescence, and the drive for social equality (Cohen & Brawer, 2003). Having been originally called a junior college, the community college was theoretically designed to serve as a 2-year extension of secondary education. To further demonstrate this belief, in 1936 Hollinshead wrote that the "junior college should be a community college meeting community needs" (p. 111); providing adult education, educational, recreational, and vocational activities; and placing its cultural facilities at the disposal of the community.

Community colleges grew. Since the founding of the 2-year college, the United States has been dedicated to the belief that all individuals should have the opportunity to rise to their greatest potential and to have a chance for an education. In 1947 the President's Commission on Higher Education articulated the value of a population with free access to two years of study since such study was more than secondary schools were designed to provide. Fifty years later, President Clinton, in *Call to Action for American Education in the 21st Century: Ensuring*

Educational Excellence in 1998 and Beyond, underscored the importance of making education through Grades 13 and 14 as being universal as a high school diploma. The numbers of public and private nonprofit 2-year colleges went from 207 in 1921 to 1,690 in 2008-2009 (National Center for Education Statistics, 2009).

In the 1980s, the personal computer led to considerable impetus to offer computer assisted instruction, and community colleges quickly took advantage of it (Cohen & Brawer, 2003). In 2001, community colleges led in the percentage of courses reporting classroom computer technology usage. Recent years have witnessed a surge in new technologies to accommodate students who wish to learn outside the physical space of the classroom. In its 1997 to 1998 study on distance education, the National Center for Education Statistics (1999) found that 62% of public 2-year institutions offered some form of distance education. Nationwide, 9.6% of community college students were taking at least one distance-education course, more than in any other higher education sector (National Education Data Resource Center, 2001). With the growth of user-controlled media, distance learning in community colleges has become more important than ever. However, even with the obvious popularity and growth of online learning options, completion rates in distance-learning courses have been much lower than they in traditional classes (Cohen & Brawer, 2003).

Research Examining Distance Learning

The first attempt to define distance learning and to articulate a theory appeared in 1972 and was named the theory of transactional distance (Moore, 1973). Moore who cited Dewey and Bentley (1949) described the concept as the physical separation of teacher and learner that leads to a psychological and communications gap which requires special teaching procedures. What determines the extent of distance in a program is a function of the interplay of the three variables

of dialogue, structure, and autonomy. Dialogue describes the interaction between teacher and learner. Structure refers to the course design. Autonomy is a characteristic of learners who control and manage their learning in a self-reliant way (Moore, 1980). This function influences the way in which the course is structured so that it can be delivered through various communications media. By putting together these variables, it can be seen that with high levels of dialogue and less structure transactional distance is decreased and that learners are able to use instructional materials to meet their needs (Moore & Kearsley, 1996). Conversely, high structure and low dialogue result in greater transactional distance and more responsibility on the part of the learner to be autonomous as a necessity to succeed.

In practice, however, transactional distance in many programs is so great that the teaching delivered cannot be just like conventional face-to-face teaching. Frequently, this will mean taking measures to reduce transactional distance in online courses by increasing the dialogue through more student-to-student and student-to-instructor interactivity (Moore, 1991). What is appropriate is left to the instructor to determine and varies according to content, level of instruction, and learners' characteristics (Moore, 1993).

In another study, Saba and Shearer (1994) assumed a systemic and dynamic relationship between structure and dialogue and observed that transactional distance varies by the rate of structure and dialogue. Saba and Shearer found that as dialogue increases in a videoconferencing environment, structure decreases. When structure increases, transactional distance increases and dialogue decreases. Dialogue in the form of in-class discussion is the only factor found to lessen transactional distance between instructors and learners in a videoconferencing environment (Chen & Willits, 1998).

To add to the knowledge base on distance learning and teaching, a study was conducted between September 2001 and June 2002 to analyze the roles of structure and interaction on learners' satisfaction with the knowledge they gained in Web-based courses (Stein et al., 2005). Stein et al. explored the question of how student satisfaction with perceived knowledge gained varies with course format and satisfaction with structure, interaction, and technical expertise. A 10-item summated rating scale measuring satisfaction with the adequacy of course structure and interaction as well as satisfaction with perceived knowledge gained was developed by Stein et al. Stein et al. obtained data from learners in six courses varying by course format, structure, and opportunities for interaction. Using Moore's (1993) theory of transactional distance as a conceptual framework, Stein et al. found that as dialogue increases in a distance learning environment, structure decreases to keep the system stable. When structure increases, transactional distance also increases and dialogue decreases (Stein et al., 2005). Results indicated that learner satisfaction with the course structure—activities, assignments, and instructor guidance and encouragement—leads to greater satisfaction with the perceived knowledge gained. Technical expertise has no effect on satisfaction with perceived knowledge gained.

In accordance with these studies, what determines the success of distance education is the extent to which the institution and the instructor are able to provide the appropriate opportunity for, and quality of, dialogue between teacher and learner as well as appropriately structured learning materials. The findings also show the necessity for learners to make their needs explicit so that instructors can adjust the course structure to develop ongoing criteria for successful achievement and lessen transactional distance (Stein et. al, 2005).

Research activities from Britain's Open University provided new directions and emphasis for more research in the field. The publication of *Research in Distance Education* in 1989

offered great opportunities to collect information on research projects and disseminate results from the field of distance learning. Until its publication, most distance education research studies were difficult to access in the United States (Moore, 1985; Rumble & Harry, 1982). Coldeway (1982) identified the following reasons for the limitation of research activities in distance learning: (1) Educational researchers are rarely present during the design of distance learning systems; (2) There is no clear paradigm for research in distance learning, and it is difficult to attract funds to develop one; (3) Some institutions are averse to defining boundaries and variables clearly; (4) Educational researchers often ask questions of no practical or even theoretical relevance; (5) Researchers in distance learning test variables that are really classes of variables (such as comparisons of distance and classroom learning).

Even with the growth in distance learning in U.S. higher educational institutions, few researchers have examined students' learning experiences, effectiveness of instructional methods, and strengths and limitation of this model of teaching and learning (Nasseh, 1997). Clark (1983) mentioned that media forms are mere vehicles that deliver instruction, but do not influence student achievement any more than the truck that delivers groceries causes changes in the customer's nutrition, thus confirming his belief that not media but variables such as instructional methods promote distance learning. Russell (1996) provided brief quotations from 218 research reports, summaries, and papers from 1945 to the present that compared technology-driven education methods with traditional classroom instruction. Russell indicated that students learn equally well from education delivered by technology and in the traditional classroom.

In addition to the effectiveness of learning experiences, the reasons for learners' participation in distance learning became another attractive topic of systematic investigation (Nasseh, 1997). Wallace's (1991) findings showed a high number of participants in online adult

continuing education. Wallace revealed, in *Faculty and Student Perceptions of Distance Education Using Television (TV)*, reasons for student participation in distance learning as opportunity to earn an MBA (90.9%), to upgrade work skills (75.1%), and to learn more about business concepts (83.2%). Wallace recommended the following additional investigations: research in educational training needs of both students and teachers, attitudes of faculty toward distance learners, evaluation of educational experiences with regards to a lack of personal interaction in the group, and follow-up study for comparison of performance of this group with face-to-face class students. Two of Wallace's major recommendations were to incorporate asynchronous technology (electronic mail system) with synchronous technology (TV) education to better facilitate communication between students and teachers and to focus on the training needs of distance learning students as well as their teachers.

The Changing Student Population and Distance Learning

The flexibility that distance learning offers in terms of where and when students learn has always been particularly advantageous to two groups of students: (a) those who live at a geographic distance from the university, and (b) those who are fully employed (either at home or in the workplace) and who must pursue a university education on a part-time basis. Therefore, distance education has become closely associated with adult education, both in practice and in the literature. The themes drawn from adult education that have come to dominate the distance education literature include the observations that adult students are different in terms of life circumstances, development, and experience (e.g., they are usually part-time students who assume a multitude of roles, such as full-time worker, spouse, and family caretaker and who are looking for practical implications of new knowledge, particularly for the world of work (Wallace, 1996).

Researchers focused on the reasons why students decide to participate in distance learning have investigated the barriers that inhibit access to on-campus courses. In Cross's (1981) very important work, barriers fell into three types: situational (circumstances in the individual's life such as family and work), institutional (organizational policies and procedures), and dispositional (attitudes toward self and learning). However, as noted earlier, it seems reasonable to assume that the greater flexibility of distance learning alone would be seen as an important attraction for at least some students (Wallace, 1996). Flinck (1978) and Dodds, Lawrence, and Guitton (1984) found students believe distance learning to offer advantages in terms of control over the pace and time of studies. Other researchers (namely, Ahlm, 1972; Beijer, 1972; Moore, 1985; Thompson & Knox, 1987) suggested that the independence offered by this mode of study extends beyond the choice of "when and where" to preferences for independence in terms of interaction (i.e., the opportunity to work alone with minimal contact with instructors or fellow students). Whether students engage in distance learning because of barriers to on-campus courses or because of attractions to off-campus courses, it does appear that the reason students are attracted to distance learning relate to such courses better fitting their learning styles or preferences (Wallace, 1996).

In an attempt to link reasons why students decide to participate in distance learning and the demographic composition of the distance learning student one needs to look at how the demographic composition of the distance learning student may have changed in the past decade. This change may have obvious implications for the way distance learning courses should be designed and delivered (Wallace, 1996). Wallace (1996) conducted a study at a western Canadian university on the students enrolled in a degree-credit distance learning course during the regular session in any of the academic years from 1983-1984 to 1994-1995. Wallace

extracted the following data fields from the archived student records: age at time of enrollment, gender, residence, course load, and type of registration (i.e., students taking only distance learning versus students taking distance learning with concurrent on-campus courses). Results indicated the total number of distance learning students quadrupled from 497 in 1983-84 to 2,152 in 1994-95. The mean age of distance learning students dropped from 32 years to 26 years; the percentage of distance learning students under the age of 26 more than doubled; the percentage of distance learning students living in the local area more than doubled; and the percentage of distance learning students taking a concurrent on-campus course more than doubled. These findings were also compared to general enrollment for on-campus programs for the same period of academic years. Data analysis showed the total enrollment at the university had only marginally increased by 4%. This showed that the increased demand for distance learning was not just an overall increase in demand for university courses. Finally, eight other universities were contacted to ask for similar responses in this study. Six universities responded and four had meaningful information. Overall, all of the responding universities indicated increases in distance learning enrollment, with four of the universities confirming a shift toward younger students and a direction of growth toward urban (local) enrollments (Wallace, 1996).

The findings of Wallace's study have confirmed that the demographic composition of the distance learning population has changed. A shift has occurred from non-traditional students (i.e., adult, part-time learners living at a geographical distance from the institution) to traditional students (i.e., younger, more local residents who are enrolled in heavier, often full-time, course loads). These findings have obvious and immediate implications for the designing of distance learning courses (Wallace, 1996). This demographic shift in the distance learning population indicates an increased blurring of the distinctions between on-campus and distance learning

populations. This convergence has not been the result of a planned or coordinated institutional effort and, as a result, instructional design in distance learning needs to be continually reevaluated. Furthermore, in a period of shrinking resources, there are considerable benefits in translating course content formerly delivered by face-to-face lecture methods into formats applicable to distance learning.

Asynchronous learning networks (ALN) in distance learning have had a tremendous impact in bringing the worlds of face-to-face learning and distance learning together. Email, computer conferencing, bulletin boards, and discussion groups are examples of asynchronous systems in which sending and receiving are usually separated in time. For two decades, a research team at New Jersey Institute of Technology (NJIT) has been involved in constructing the “virtual classroom” and studying its use in a wide variety of courses (Hiltz & Turoff, 2002). An analysis of the results is constructed as part of a webcenter for learning networks research (New Jersey Institute of Technology, 2010).

Nineteen studies have been identified that compare ALNs to traditional face-to-face courses on the same campus. These studies’ researchers employed objective measures of student learning (e.g., grades) about as frequently as subjective measures (e.g., survey responses from students). The evidence is overwhelming that ALNs tend to be as or more effective than traditional modes of course delivery at the university level. Furthermore, ALNs provide a strong online option to the learning process by promoting student-instructor interaction, student-to-student collaboration, and generating active participation with appropriate software. With the increasing enrollment of traditional and non-traditional students in distance learning courses, faculty are able to be effective virtual professors, students can work with their peers to build and

share knowledge, and the software available to support such processes is constantly improving (Hiltz & Turoff, 2002).

As learning from a distance continues to gain popularity and an influx of traditional students attest to its flexibility, the question of whether they are equipped to succeed in a low-contact environment versus a face-to-face, on-campus environment arises. Deke and McMurry (2006) explored how several variables such as student background, preparedness, and self-perceptions may or may not contribute differently to the success of students completing one-way distance teleclasses versus students completing the same classes in face-to-face, on-campus environments. Student in four classes completed questionnaires on reading and study skills, self-perceptions, and background information, and each class had a face-to-face section and a teleclass section. Success was measured with class grades and retention rates. A MANOVA was conducted to compare both groups on all variables. Follow up ANOVAs indicated significant differences in age, reading comprehension, and success with distance learners being higher in the first two but not the third due to lower retention rates. For distance learners, student-initiated contact with the instructor approached significance with successful teleclass learners spending more than double the amount of time in contact with the instructor than unsuccessful ones. Multiple studies have shown students taking distance classes fared the same, or even better, than students in face-to-face classes in terms of grades, yet worse in terms of retention rates (Denton, Clark, Rossing, & O'Connor, 1984; Hogan, 1997; Schoenfeld-Tacher, McConnell, & Graham, 2001).

Distance Learning Theoretical Approaches

Early pioneers of correspondence education, including William Rainey Harper of Chicago, William H. Lightly of Wisconsin, and Hans Hermod of Malmo, Sweden, wrote

ferently about the advantages and disadvantages of this form of education. Nevertheless, there was no systematic theory of distance education which might make it possible to classify practitioner's individual experiences. Rudolf Manfred Delling, a German historian and bibliographer, defined distance education as a planned and systematic activity that is composed of the choice, preparation and presentation of teaching materials as well as supervision and support of student learning and that it is achieved by bridging the physical distance between student and teacher by at least one appropriate technical medium (Keegan, 1986). Over 20 years later Wedemeyer (1974, p. 55) claimed that distance education has failed to develop a theory related to the mainstream of educational thought and practice. According to Keegan (1990) this problem remains true today. The following sections are used to analyze the online as well as traditional theoretical approaches that have been presented in the literature.

Establishing a Sense of Community

Perspectives seeking to minimize the transactional distance that separates students and teachers in online and traditional courses and to shape the ongoing inquiry of how wider choices of communication options, afforded by the online revolution, have given institutions opportunities to look afresh at ways of establishing online community. Some of these perspectives come from Rovai (2002a) who linked the quality of student-teacher interaction and community to persistence in university studies, Tinto (1975) who stated that "social interaction via friendship support is directly related to persistence" (p. 107), and Garrison (1997a) who purported that self-directed learning integrates contextual control, cognitive responsibility, and motivation. The work of these theorists as related to improving the quality of students' learning experience through building a greater sense of community is examined below.

In 1974, psychologist Seymour Sarason introduced the concept of “psychological sense of community” and proposed that it become the conceptual center for the psychology of community by asserting that psychological sense of community “is one of the major bases for self-definition” (p. 157). Among the theories of psychological sense of community, McMillan and Chavis’s (1986) theory is by far the most influential and is the starting point for most of the recent research on psychological sense of community (Wright, n.d.). McMillan and Chavis preferred the label “sense of community” and provided the following definition for their sense of community as a feeling that members have of belonging and matter to one another and to the group and a shared faith that members’ needs will be met through their commitment to be together. Rovai and Lucking’s (2000) Sense of Classroom Community Index (SCCI) was developed based on McMillan and Chavis’s (1986) construct of sense of community and was applied to the classroom environment. Rovai’s (2002c) Classroom Community Scale (CCS) was the second major iteration of this classroom community instrument, developed specifically for the online environment.

Based on his strong beliefs about the importance of building classroom community in distance learning courses, Alfred Rovai has done much research comparing community in a distance learning environment to community in on-campus classes. Rovai (2002a) defined community as having the four components of spirit, a recognition of membership in a community and bonding that develops among learners; trust, credibility for one’s own self and benevolence for others in the group; interaction, task-driven direction toward completion of assigned tasks and socio-emotional direction toward self-generated learner relationships; and common expectations, commitment to a common educational purpose or learning.

The foundation of much of Rovai's research revolved around whether or not online instructors can create a virtual learning environment that promotes a sense of classroom community. To demonstrate this, he compared the sense of community between online courses and face-to-face instruction. Data for the studies were gathered from the sense of classroom community index (SCCI) that he developed and tested. The SCCI consists of a self-report questionnaire of 40 items, 10 items each for the four subscales of spirit, trust, interaction, and learning (Rovai, 2001a).

In one such study, with the purpose of exploring the dynamics of a sense of classroom community, Rovai (2001b) analyzed a 5-week graduate-level education course taught entirely at a distance via the Internet. Subjects were administered the SCCI at the beginning and end of the course in order to measure classroom community. The analysis of student responses indicated that online learners took advantage of the "learn anytime" characteristics of the Internet by accessing the course 24 hours per day, 7 days per week. The sense of classroom community grew significantly during the course.

Another area Rovai et al. (2007) researched was the difference in student motivation between the two types of course delivery: online and face-to-face. A three-way multivariate analysis of variance was conducted to determine the effect of type of course (e-learning, traditional), student status (undergraduate, graduate), and ethnicity (African America, Caucasian, and other). A comparative analysis was used to determine whether classifications could be made between students enrolled in e-learning university courses and in face-to-face university courses ($n = 353$) based on their scores from the Academic Motivation Scale-College (AMS-C28) instrument which measures motivation along with demographic questions. The 28 item AMS-C28 was used to measure intrinsic, extrinsic, and amotivation in college students (Vallerand et

al., 1992). Study results revealed that the stronger intrinsic motivation of the online group represents the most important predictor in discriminating between online and traditional students. However, it was not determined if a greater number of students who possess higher intrinsic motivation elect to study online, or whether online courses promote greater intrinsic motivation (Rovai et al., 2007).

Ni and Aust (2008) used quantitative measures to gather data from online students to analyze the effects of perceptions about teacher verbal immediacy and classroom community on students' level of satisfaction, perceived learning, and online discussion frequency. Teacher verbal immediacy refers to teachers' verbal communication behaviors that reduce psychological distance in the interaction between teacher and student while the sense of classroom community is related to not only the interaction between teacher and student but also the collaboration between students. Rovai (2002a) used a modified scale from Gorham's (1988) original immediacy scale and McAlister's (2001) online immediacy scale to measure teacher verbal immediacy and Rovai's CCS. Bivariate correlation, multiple linear regression, and two-way analysis of variance (ANOVA) were used for data analysis. Multiple regression analysis revealed that sense of classroom community was the only significant factor able to explain variability of satisfaction and perceived learning and was critical to enhance students' satisfaction and perceived learning.

Interaction of Academic and Social Factors in Distance Learning

It is the interaction of several factors, specifically academic and social, which may ultimately determine a student's drop-out decision (Spady, 1971; Tinto, 1987). The integration of the student into the institutional environment depends on what can be called a "match" between student (i.e. academic preparation, personality, intelligence, and motivation) and external factors.

Astin (1975) referred to this as “student-institutional fit” (p. 46). Building on Tinto’s work, Pascarella and Terenzini (1980) discussed “institutional and goal commitment” as part of the integration process (p. 62).

Tinto (1975) developed a theoretical, longitudinal model of student attrition using Durkheim’s (1961) suicide theory as a theoretical framework. Tinto believed the collegiate environment could be viewed as synonymous to the social system about which Durkheim wrote. A lack of appropriate integration into the collegiate environment could lead to dropping out, just as a lack of appropriate integration into the social system could increase the likelihood of suicide. Tinto also wrote that theory alone was insufficient for describing longitudinal dropout behavior. Tinto believed that student background characteristics, expectations, motivational attributes, and goal commitment were all important influences on student dropout behavior.

Tinto (1993), in the book *Leaving College: Rethinking the Causes and Cures of Student Attrition*, presented a model describing student departure by viewing it as “arising out of a longitudinal process of interactions between an individual and other members of the academic and social systems of the institution” (p. 113). Tinto emphasized the importance of students’ intentions and the importance they have on dropout behavior. Tinto proposed that students’ intentions have a direct influence on goal and institutional commitment, which both directly influence dropout behavior. Tinto also recognized the importance of a student’s external commitments and how they have a direct influence on students’ goals and institutional commitments.

Developing his theory on institutional departure, Tinto (1987) classified the college community as academic and social systems. Each of these systems include both formal and informal experiences. In the academic system, formal activities occur mostly in the classroom

setting, and informal activities could occur outside the classroom setting, such as in a study hall. In the social system, formal activities include extracurricular activities, while informal experiences such as day-to-day activities might not be formally addressed in the rules and regulations of the institution. According to Tinto, these components vary in importance, creating a unique environment into which the student may or may not integrate.

Tinto (1993) included the concept of external commitment as a way to explain some of the differences in dropout behavior. For example, many students in 2-year institutions have external commitments related to work. Tinto proposed that when students place more importance on external work commitments, the likelihood for dropout increases. Also, some students come from backgrounds where little value is placed on the attainment of higher education. As more and more pressure is placed on students from this external community, they might decrease the level of goal sought or level of commitment.

Using Tinto's (1975) model, Terenzini and Pascarella (1977) attempted to test the validity of the individual components, particularly the social and academic integration elements by conducting two studies. To test social and academic integration and the impact of these factors on student persistence, Terenzini and Pascarella collected data, representing both the formal and informal types of integration as identified by Tinto. Academic data were grade point averages and students' perceptions of their academic programs. Social integration was measured in three ways: the number of student extracurricular activities; perceptions of nonacademic life; and the number of informal interactions with faculty. Terenzini and Pascarella's results appear to support Tinto's and Spady's (1971) concepts that the more academically and socially integrated students are, the more likely students are to stay in college.

Self-directed Learning Factors in Distance Learning

From adult education experts' perspectives, self-directed learning contains three dimensions: motivation, metacognition, and self-regulation (Long, 2000). Self-directed learning has been used as a correlate of students' academic performance and even as a perfect indicator of predicting academic success in traditional learning settings or non-Web-based distance learning (Long, 1991). Darmayanti (1994) found a positive relationship between self-directed learning and academic success in the traditional classroom setting. Hsu and Shiue (2005) also showed self-directed learning to be a strong factor for predicting learners' academic achievement in non-Web-based distance learning. With the growing trend toward online learning, the concept of self-directed learning has received widespread attention again. For this reason, in the book *147 Practical Tips for Teaching Online Groups: Essentials of Web-based Education*, Hanna et al. (2000) wrote that self-directed learning is a key factor to successful online learning. Similarly, Guglielmino and Guglielmino (2003a) contended that although the students' technical skills are important for e-learning, self-direction is even more vital in the successful e-learning environment.

Developed by Guglielmino (1977), the Self-directed Learning Readiness Scale (SDLRS) uses a 58-item 5-point Likert scale. The SDLRS includes the factors of openness to learning opportunities, self-concept as an effective learner, initiative and independence in learning, informed acceptance of responsibility for one's own learning, love of learning, creativity, positive orientation to the future, and ability to use basic study and problem-solving skills. The higher scores occurring from using the scale represent higher readiness for self-directed learning. Since the development of the SDLRS, a number of studies have supported its reliability and validity (Guglielmino, 1989). According to Guglielmino and Guglielmino (2003b), "this

instrument has consistently demonstrated strong reliability and validity in identifying those who were ready for self-directed learning in its 26-year history” (p. 5).

Another instrument for assessing self-directed learning, developed by Oddi in her doctoral dissertation, is the Oddi Continuing Learning Inventory (OCLI). The OCLI includes a 24-item 7-point Likert scale and contains three domains established by factor analysis: (1) Proactive/Reactive Learning Drive, (2) Cognitive Openness/Defensiveness, and (3) Commitment/Aversion to Learning. Higher scores in the scale indicate having greater characteristics of a self-directed continuing learner. In this scale, the reliability coefficient also achieves a higher level at more than 0.8 (Oddi, 1984, 1986).

Chou and Chen (2008) proposed to identify whether or not self-directed learning is a key factor leading to successful academic performance in Web-based learning environments. Chou and Chen examined six empirical case studies about the SDLRS or the OCLI which had been presented in unpublished works by their students. An in-depth analysis and discussion of each study found that the effect of self-directed learning on academic success on Web-based environments is divergent among the six case studies. The six studies are described as follows:

Case 1. Pachnowski and Jurczyk (2000) employed the SDLRS to explore learners’ attitudes and readiness for self-directed learning. In this study, academic performance was defined as a final course grade and consisted of students’ technical skills and attitudes/habits according to the course instructor’s standards. The SDLRS, transformed into digital format, was e-mailed to all online learners. Only 17 students returned a completed SDLRS. The result of the study showed no significant relationship between self-directed learning and academic success. Whether or not the small number of subjects affected the study’s results needs further exploration.

Case 2. Doherty (2000) distributed the SDLRS to online learners via e-mail in a Western college in the U.S. The purpose was to find the existence of a relationship between self-directed learning and academic performance as defined by a final course grade. After 147 valid questionnaires were collected, the results showed that self-directed learning did not impact academic performance. According to Doherty, the final course grades of sample subjects were positively skewed. He attributed the failure between self-directed learning and academic performance to the lack of reliability and validity of the SDLRS among the subject population.

Case 3. In Corbel's (2003) study, the instrument used for measuring students' self-directed learning was the OCLI. Participants consisted of 191 graduate-level, online learners. Only 98 students submitted the surveys. In this study, academic performance was measured by students' final grades for the course. The results showed a significantly positive relationship existed between self-directed learning and academic performance. However, if the researcher had chosen the SDLRS as the measurement rather than the OCLI, the result may have differed. Further in-depth studies should explore this possibility.

Case 4. In Chou's (2003) study, 38 students majoring in electronic engineering in an online portion of a programming course were given the SDLRS. Academic performance was the score from a test administered during the final class. The result of the study showed that no significant relationship between self-directed learning and scores on the test. Chou attributed the failure to students' learning style not suited to Web-based learning environment and the quality of online learning materials.

Case 5. In Chung's (2001) study, three Web-based courses were investigated. The SDLRS was e-mailed to all students and 117 valid surveys were returned. Academic performance was measured by the cumulative score for the course. A significantly positive

relationship appeared between self-directed learning and academic performance. This study seems to confirm the effect of self-directed learning; however, the correlation coefficient is below 0.5 and further analysis was not executed. Therefore, it is uncertain whether or not self-directed learning is a good indicator for predicting successful Web-learning.

Case 6. Tsai's (2005) study was conducted in a corporate setting. In this study, academic performance was measured by a "learner self-report learning performance scale" to substitute for traditional academic performance measures. Learners responded with 401 valid surveys. The results of the study showed a significantly positive relationship between self-directed learning and learning performance. However, the questionable point is that learning performance is self-reported rather than assessed by the course instructor.

In theory, a reasonable link exists between self-directed learning and academic success. However, from six quantitative studies regarding the relationship between self-directed learning and academic performance in the Web-based environment, the results are not consistent.

Grounded in a collaborative constructivist perspective, Garrison (1997a) developed a model to integrate student self-management (task control), self-monitoring (cognitive responsibility), and motivation (entering and task) dimensions and to reflect a meaningful and worthwhile approach to self-directed learning. As Garrison defined the terms, self-management was concerned with task control issues and was focused on the social and behavioral implementation of learning intentions, that is, the external activities associated with the learning process. Self-monitoring addresses cognitive and metacognitive processes; monitoring the repertoire of learning strategies as well as an awareness of and an ability to think about thinking (e.g., planning and modifying thinking according to the learning task or goal). Self-monitoring is the process whereby the learner takes responsibility for the construction of personal meaning

(i.e., integrating new ideas and concepts with previous knowledge). Responsibility for self-monitoring reflects a commitment and obligation to construct meaning through critical reflection and collaborative confirmation. Motivation reflects perceived value and anticipated success of learning goals at the time learning is initiated and mediates between context (control) and cognition (responsibility) during the learning process. To begin to understand the pervasive influence of motivational factors, it is necessary to distinguish between the process of deciding to participate (entering motivation) and the effort required to stay on task and persist (task motivation). Entering motivation establishes commitment to a particular goal and the intent to act (Garrison, 1997a).

Using Garrison's (1993, 1997a) comprehensive model and concept of control, Lee and Gibson (2003) studied online graduate students in a computer conferencing course to confirm that students exhibit self-direction as indicated by both the variety and the extent of concrete self-directed activities. According to Garrison's model, interaction also influences self-direction on the assumption of shared control based on dynamic communication among the teacher, learners, and curriculum. Garrison explained how students are self-directed by focusing on the instructor and peer roles of self-directed activities through content analysis of online transcripts. Three components of self-direction—control, critical reflection, and responsibility—were shown to be connected to each other through interaction. Thus, Lee and Gibson suggested the importance of interaction in developing self-direction or taking control and responsibility for one's own learning.

Research Regarding Online Interactivity

There have been numerous studies regarding the quality of online instruction. Muirhead (2001) stated the level of interactivity or interaction between students and between students and

their teachers has a major impact on the quality on computer-mediated education programs. Muirhead highlighted interaction research done by Berge (1999) who after investigating two online graduate education classes using in-depth interviews with 21 master of education students and their two instructors observed that “interaction does not simply occur but must be intentionally designed into the instructional program” (p. 5).

Jung (2001) discussed how the Web as a medium interacts with the pedagogical processes associated with Web-based instruction. Fifty-eight articles from six refereed international journals in the fields of distance education and educational technology were reviewed. The most frequently asked research questions were how to design effective Web-based instruction, how to encourage interaction, and what are the effects of Web-based instruction on learner satisfaction and perceived learning outcomes? Overall, the researchers indicated “student-centered learning environment,” “full of multimedia resources,” “expanded interactivity,” and “adaptability” to different student characteristics as distinctive features of Web-based instruction, most of which reflect integration of technological features of the Web into Web-based instruction (Jung, 2001).

According to Pauls (n.d.), the caveat is not the medium but pedagogy. There is a difference in the delivery of online instruction and classroom instruction. If learning is to occur in an online learning environment, “attention must be paid to the specific nature of the medium. However, with sound pedagogical principles, there need be no significant difference in learning no matter what kind of media or methods were used” (Ascough, 2002, p. 18). An important factor in ensuring the quality of Web-based instruction is the changing role of the faculty (Perreault, Waldman, & Alexander, 2002). The faculty member must move from the ‘sage on the stage’ to the ‘guide on the side’ or the ‘mentor in the center’ (King, 2002). This change requires

the faculty to facilitate interaction with the students and between the students. A brief summary of literature regarding interactivity in Web-based instruction is presented here.

Interactivity in Web-based Instruction

Kanuka and Anderson (1998) were interested in the depth of online interactions and contended that participants in a communication process construct knowledge through a five-stage process. In Stage 1, participants share their information and opinions. In Stage 2, participants discover and explore dissonance and inconsistency in the information and opinions shared. In Stage 3, participants negotiate and co-construct knowledge. In Stage 4, participants further test and modify newly constructed knowledge. In Stage 5, the final stage, participants explicitly phrase agreements, statements, and applications of new knowledge. With data obtained from an online forum with 11 participants and coded into the above five stages, Kanuka and Anderson found that students' interactions in the online environment were primarily at the lower levels of communication (sharing information and discovering dissonance) and rarely developed into a higher level of communication where negotiation, co-construction, and agreement occurred. If this learning is viewed from a Vygotskian (1978) perspective as a constructive or co-constructive process, the shallow level of participation shown in Kanuka and Anderson's study, i.e. sharing and acknowledging only the differences in participants' views, is not sufficient to make construction or co-construction possible.

According to Vygotsky (1978), students learn only when their current view of knowledge is challenged, reformed, and synthesized through their interaction with others. Predominant in Vygotskian work is the attempt to link the social and individual levels of cognition (Hung & Nichani, 2002). These dimensions are based on two famous propositions concerning the zone of proximal development (Vygotsky, 1978) and the genetic law of cultural development (Vygotsky,

1981). The concept of the zone of proximal development (ZPD) generally exemplifies Vygotsky's interest in assessing how learners make progress as well as the learners' potential level and the distance between the two. The law of cultural development brings together the social element and the individual in a ZPD setting.

Based on Vygotskian thought, meanings, tools, and goals all necessarily link the individual and the social world, of which the individual is part, to newly constructed knowledge for they are all formed in the sociocultural context (Hung & Nichani, 2002). Negotiation, co-construction, and agreement occur between students only when they intensify their participation in the online interaction upward to higher stages as in Kanuka and Anderson's (1998) model. It is not known exactly what causes students' shallow participation in online interaction. One possible explanation is the lack of instructor guidance while promoting interaction such as online chatting and discussion (Tallent-Runnels et al., 2006).

Some researchers believed that certain characteristics of the online environment would enhance the interaction between students and between students and their instructors. Believing interaction is "the single most important activity in a well-designed distance education experience," McIssac, Blocher, Mahes, and Vrasidas (1999) qualitatively examined archived messages exchanged between doctoral students during chat time in six Web-based courses. McIssac et al. interviewed the students after their courses ended to learn about their experiences in the online interaction. They found that students' positive experiences during the online interaction could be promoted by the instructors' providing prompt feedback, participating in the interaction, encouraging social interaction, and employing collaborative learning strategies.

Althaus (1997) conducted a study to examine whether supplementing a face-to-face discussion with computer mediated discussions would enhance academic performance. All 134

students enrolled in the researcher's face-to-face discussion sections, as well as students from outside the researcher's sections, were invited to participate in computer-mediated discussion (CMD) groups supplementing their face-to-face class. The CMD groups used email to communicate during the 1992-1993 academic school year. Students logged on and joined the discussion whenever it was convenient for them, leading to more time to read messages, reflect on the messages, and compose thoughtful responses. Results indicated that students who were actively involved in the CMDs tended to earn higher grades than students who took part in face-to-face discussions only. Since participation in the CMD groups was strictly voluntary, CMD participants could have already been committed to and involved in their courses without the influence of CMD.

Wilson and Whitelock (1998) reported on a project piloted at the Open University consisting of 110 computer science students based throughout the United Kingdom and Europe. The project was called M205-STILE, meaning Students' and Teachers' Integrated Learning Environment. M205-STILE was aimed at improving the presentation of the course and providing structured access to interactive online facilities by assessing distance learners' perceptions of collaboration and group work in the online environment. In order to monitor students' availability to collaborate, the number of students using the presentation software was recorded each month throughout the spring, summer, and fall of 1995. Monitoring online questionnaires about students' willingness to collaborate and participate in group work were completed during and after the students' online experiences. Students gradually trickled away throughout the time period of the study. However, 53% of the students were still online in September even with a disturbance occurring around the Easter break. Results showed more than half of the total students reported an interest in group work; however, only a small number of students initiated

collaborative work. Wilson and Whitelock concluded that the number of online interactions needs to be kept relatively high in discussions, incentives in terms of the interface and pedagogical instructions need to be given, and some dramatic tension should be created to motivate participation. Finally, Wilson and Whitelock suggested that involving students in the process of getting to know each other affects collaborative engagements.

Along the same line, Keefe (2003) found a high degree of interactivity and student participation to be critical components of online instruction. Keefe (2003) conducted a comparative study and administered surveys before and after each semester to gather demographic and psychological data for two versions of the same class, one online and one face-to-face, with randomly assigned students. Both students' performance and perceptions were tracked across each semester. Keefe found that students performed better and were more satisfied in the face-to-face environment than in the online environment. More importantly, the impact of interaction separated student performance between face-to-face and online courses. Keefe suggested the difference could be attributed to the lack of interaction experience during lecture in the online section.

Tallent-Runnels et al. (2006) displayed the importance of creating a learning community in an online class by forming small groups and allowing students to see effective communication modeled by instructors. Instructor presence during discussions, posting of timely feedback, and announcements were beneficial to the students. Finally, promotion of and participation in teacher-student and student-student interaction promoted learning. Tallent-Runnels et al. noted that this interaction should reflect a deep understanding of the course content in order to be truly helpful.

As demonstrated in the studies described above, current research has shown that critical

to online courses means providing effective communication and interaction. However, research is needed to determine which format provides the highest level of interaction and the most effective learning experiences for various kinds of students. Future research studies should include examinations of instructors' and students' roles in online interactions that enhance class discussions and encourage critical thinking and the construction of knowledge (Tallent-Runnels et al., 2006).

Online Community in Distance Learning

Strong feelings of community can increase the flow of information among all learners, the availability of support, commitment to group goals, cooperation among members, and satisfaction with group efforts (Bruffee, 1993; Dede, 1996a; Wellman, 1999). Additionally, learners benefit from community membership by experiencing a greater sense of well-being and having a larger set of willing individuals to call on for support (Wellman & Gulia, 1999). Thus, there is a need to understand what community means in distance-education environments so that educators and administrators can promote a better sense of community.

Looking at community in an other than distance-education environment, Bellah, Madsen, Sullivan, Swidler, and Tipton (1985), in their book *Habits of the Heart*, defined the general construct of community as follows:

A community is a group of people who are socially interdependent, who participate together in discussion and decision making, and who share certain practices that both define the community and are nurtured by it. Such a community is not quickly formed. It almost always has a history and so is also a community of memory, defined in part by its past and its memory of the past. (p. 333)

Additionally, McMillan and Chavis (1986) offered the following definition of community 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). These definitions identify or imply the most essential elements of community are mutual interdependence among members, interactivity, common expectations, and shared values and beliefs.

Hill (1996) and Rheingold (1991) believed that the components of community differ from setting to setting and suggested that sense of community is setting specific. Sergiovanni (1994) pointed out that learning is an attitude as well as an activity. Sergiovanni stressed the need for authentic community, a tie binding learners and teachers through shared values and ideals. Bielaczyc and Collins (1999) described a community as embodying a "culture of learning in which everyone is involved in a collective effort of understanding" (p. 271). Members of such classroom communities have feelings of belonging and trust, and they believe that they matter to one another and to the group, have duties and obligations to each other and to the school, and possess a shared faith that members' educational needs will be met through commitments to shared goals. Accordingly, classroom community can be constitutively defined in terms of the four components of spirit, trust, interaction, and learning (Rovai, 2001a).

Spirit. The first component, spirit, denotes recognition of membership in a community and the feelings of friendship, cohesion and bonding that develop among learners as they enjoy one another and look forward to time spent together (Rovai, 2001a). Learners need to feel a sense of connectedness and a sense of being included in the group (Gibbs, 1995).

Noninvolvement in the classroom community can possibly lead to feelings of loneliness, low self-esteem, isolation, and low motivation to learn, which in turn can lead to low achievement and dropping out.

Trust. The second component, trust, is the feeling that the community can be trusted and represents a willingness to rely on other members of the community in whom one has confidence (Moormon, Zaltman, & Deshpande, 1993). Trust consists of the two dimensions of credibility and benevolence (Doney & Cannon, 1997). Credibility is an expectation that the word of other learners in the community can be relied on. Benevolence is the extent to which learners are genuinely interested in the welfare of other members of the community and are motivated to assist others in their learning. Trust in the community also fosters contribution and support in times of need (Haines, Hurlbert, & Beggs, 1996).

Interaction. The third component of classroom community is interaction. According to Haythornthwaite, Kazmer, Robins, and Shoemaker (2000), “Building community requires more than just work activity. Moreover, socializing eases work relations” (p. 16). Accordingly, Hare and Davies (1994) categorized interaction as either task-driven or socioemotional in origin. Task-driven interaction is directed toward the completion of assigned tasks while socioemotional-driven interaction is directed toward relationships among learners. Socializing can take on many characteristics from exchanging empathetic messages (McMahon, 1997) to self-disclosure (Cutler, 1996). According to Cutler (1996), “the more one discloses personal information, the more others will reciprocate, and the more individuals know about each other, the more likely they are to establish trust, seek support, and thus find satisfaction” (p. 326). Thus, increased disclosure of personal information strengthens classroom community.

Learning. Learning, the final component of classroom community, reflects a commitment to a common educational purpose. Situated learning maintains that learning and cognition must take account of social interaction and work (Brown, Collins, & Duguid, 1989). Emerging from situated learning research is “communities of practice,” the concept that learning takes place

through the sharing of purposeful, patterned activity (Lave & Wenger, 1991). Lave and Wenger (1991) stressed that learning is considered “an integral and inseparable aspect of social practice” within the classroom community (p. 31). Rather than merely adding to the student’s knowledge, Rogoff (1994) stated learning involves a “process of transformation of participation itself,” which occurs as a function of all active members of the classroom community, “transforming roles and understanding in the activities in which they participate” (p. 209). Learning thus represents the common purpose of the community, and the members of the community grow to feel that their educational needs are being satisfied through their active participation in the community (Rovai, 2006).

Building Community

Students in asynchronous distance classes work at computers miles apart during all hours of the day and night. This feeling of being alone is overcome when students join together in a community of learners who support one another. The process of forming a community of learners is an important issue in distance learning because it can affect student satisfaction, retention, and learning.

Brown (2001) developed a theory about the process of community-building in adult computer-mediated asynchronous distance learning classes. Archived class input as well as interview data from 21 students and three faculty members were incorporated into a grounded theory design. Brown used a systematic set of procedures to develop an inductively derived and grounded theory to explain the process of forming a community in a distance learning class. Data collection procedures included site selection, sampling to select participants, interviews with participants, follow-up email correspondence, and archived input. Data analysis procedures

included open coding to develop categories of information and a paradigm created by axial coding to explore relationships between categories.

Brown (2001) showed participants described community along two themes: (1) members as having something in common; (2) members as responsible, in part, not just for their own learning but also for others' learning. Brown indicated that participants' definitions of community often predicted whether or not they felt part of the community. Those who felt connected placed a high priority on the class, were highly motivated, and allotted time for it accordingly. Those who did not feel connected either did not place a high priority on the class or on community, were "out of sync" with the class due to outside problems and/or commitments, or were only interested in the knowledge from the course and/or course credit. Further implications from the study involved community-building to keep the students in the class and in the program, promote full engagement in the class, facilitate effective collaborative learning, and encourage continued communication after the course or program (Brown, 2001).

If instructors and curriculum designers realize how community is built online and if students understand the benefits of community and of being fully engaged in the class, then community should happen more readily (Brown, 2001). The purpose of an educational experience, whether it is online, face-to-face, or a blending of both, is to structure the educational experience to achieve defined learning outcomes (Garrison & Cleveland-Innes, 2005). In this context, interaction must be more structured and systematic. Some have argued that in higher education, creating a community of inquiry is valuable and even necessary in order to sustain interaction and reflection and to model the process of critical inquiry. Interaction in such an environment goes beyond social interaction and the simple exchange of information and should be more of a community of inquiry. A community of inquiry must include various combinations

of interaction between content, teachers, and students (Anderson & Garrison, 1997; Moore, 1989).

To capitalize on the potential of online learning for educational purposes, a qualitative shift in the nature of interaction must be considered. Garrison, Anderson, and Archer (2000) provided a model of a community of inquiry that maps and defines educational presence. It is the integration of social, teaching, and cognitive presence. To appreciate interaction and the quality of learning outcomes, one must understand how social, teaching, and cognitive presence come together to create a purposeful community of inquiry (Garrison & Cleveland-Innes, 2005).

Rourke, Anderson, Garrison, and Archer (1999) differentiate core components of social presence, teaching presence, and cognitive presence as a framework for interpreting the online teaching and learning environment. They define social presence as that which supports the community's cognitive presence; teachers presence as facilitating cognitive presence by the teacher's knowledge and organization of learning; and cognitive presence as the extent to which the participants can construct meaning through sustained communication.

Social presence. Social presence has varying definitions in literature. As defined by Garrison (1997b) social presence is 'the degree to which participants are able to project themselves affectively within the medium' (Stacey, 2002). Rourke, Anderson, Garrison, and Archer (1999) place more responsibility on the learners when they describe social presence as "the ability of the learners to socially and affectively project themselves in communities of inquiry." Others have defined it as the "the degree of person-to-person awareness" (Tu, 2000, p. 1662) and "the degree to which a person is perceived as a 'real person' in mediated communication" (Gunawardena and Zittle, 1997, p. 9).

Recent literature has shown that social presence is one of the most significant factors in improving instructional effectiveness and building a sense of community. Rovai (2002a) presents factors that professional literature suggests contribute to a sense of community. They include social presence along with other variables such as transactional distance, social equality, collaborative learning (small group activities), group facilitation, teaching style and learning stage (self-directed learning), and community size. The social presence factor stresses that sense of community will wither unless the community is nurtured and support is provided in the form of heightened awareness of social presence (Rovai, 2002a). All other factors point to an increased growth of community.

Rovai (2002a) proposed small-group activities, group facilitation, teaching style and learning stage, and community size as positive correlates to a sense of community. He states small group activities enable students to become meaningfully engaged in a variety of learning activities, thereby making connections with each other and promoting community, while instructor facilitation efforts are meant to inspire learners to interact. Gunawardena and Zittle (1997) suggest that when students connect with others in new social situations they create social presence or a degree of interpersonal contact. The challenge in online learning environments is facilitating this degree of interpersonal contact with the instructor and other participants because all contact is electronic.

A sense of community is supported where teaching style and learning stage are aligned. Grow (1991) suggests that good teaching does two things: (a) it matches the students' stage of self-direction, and (b) it empowers the student to progress toward greater self-direction. Thus the teaching style and learning stage must accommodate the needs of the learners. Learners in a

community evolve from being dependent learners in a more structured environment to being fully functional self-directed learners in a less structured environment.

Teaching presence. Shea et al. (2006) reviewed the literature and proposed that teaching presence—viewed as the core roles of the online instructor—is a promising mechanism for developing learning community in online environments. Tinto (1997) argued that the classroom is the nexus bridging social and academic integration for college learners, and clearly this relationship in the online classroom is significant for students. Tinto further suggested that what instructors do in the classroom is critical to learners’ sense of scholarly belonging and ultimately persistence in their academic pursuits. Pascarella and Terenzini (1991) and Tinto (1997) provided convincing research to support the critical importance of community development to overall student success in higher education. Yet questions persist regarding the capacity for fully online environments to support high levels of community (Brown, 2001).

To address some of these concerns Shea et al. (2006) investigated the link between “teaching presence” in higher education classroom-based and online learning environments and learner sense of community in these different settings. The conceptual basis for Shea et al.’s analysis of community and learning in online higher education was derived and adapted from what is known about learning in three areas. The first area is about how people learn generally based on the perspectives of Bransford et al. (1999), indicating that good learning environments are learner, knowledge, assessment, and community centered. The second area of conceptual understanding of online learning and community development can be derived from research into higher education learners. The seven principles of good practice in undergraduate education offered by Chickering and Gamson (1987) affirmed that good learning environments promote high levels of interaction between students and faculty. The third area providing a conceptual

basis for thinking about the importance of online community to learning is the more recent work on the concepts of presence outlined in the community of inquiry model (Garrison et al., 2000). In this framework, Shea et al. proposed that a successful community of learners develops as a result of the joint work of instructors and students.

Shea et al. (2006) assessed students' sense of classroom community as it relates to perceived instructors' teaching presence. To measure teaching presence, the "Teaching Presence Scale" (TPS), also called the community of inquiry model (Anderson, Rourke, Garrison, & Archer, 2001; Garrison et al., 2000), was presented to a random sample of learners at the end of the semester to assess effective instructional design and organization, facilitation, and direct instruction. To measure connectedness and learning, Rovai's (2002a, 2002b) Classroom Community Index was used. The main research question was related to whether or not students' ratings of their instructors' teaching presence correlated with overall sense of connectedness and learning community as measured by the Classroom Community Index. Shea et al. found a clear connection between perceived teaching presence and students' sense of learning community and reported that "directed facilitation" by the instructor contributes more to students' sense of connectedness and learning than effective instructional design and organization or learner characteristics. Shea et al. concluded that more research needs to be done to understand how to increase the level of learning community in the classroom and in the online environment.

Cognitive presence. Research of online environments has also been focused on learning effectiveness (Shea et al., 2002; Swan, 2003), the impact of social aspects of online learning environments (Picciano, 2002; Richardson & Swan, 2003), student satisfaction (Shea, Pickett, and Pelz, 2003), and learning strategies (Brown, Myers, & Roy, 2003). However, little investigation of students engaging with their online courses, especially in terms of learning

strategies and motivations, has been conducted (Richardson & Newby, 2006). Cognitive engagement, allows researchers to go beyond the course grades to gain knowledge about how students “go about learning” while taking into account the unique individual experiences that shape students and student learning (Biggs, 1987). Given that students learn differently, it would be useful for online instructors and designers to have a better understanding of how students’ learning strategies, motivation, and prior experiences intersect within the online environment.

Corno and Mandinach (1983) first coined the term *cognitive engagement* in research that examined classroom learning from the perspective of learning, motivation, and instruction (as cited in Richardson & Newby, 2006, p. 24). Corno and Mandinach considered self-regulated learning to be one form of cognitive engagement, “the highest form...in which a student derives solutions on his or her own” (p. 90). Ultimately, Corno and Mandinach believed students must “learn to learn” and be encouraged to “become adroit at strategy shifts across tasks, even within certain complex tasks” (p. 106).

Guthrie et al. (1996) defined student engagement as “the integration of motivations and strategies in literacy activities” (p. 306). In research stemming from the National Reading Research Center, Gurthrie (1996) cited motivation as being the underlying definition for the outcomes for literate learners, or learners who “generate their own literacy learning opportunities” (p. 433). Greene and Miller (1996) found that students’ perceived ability and learning goals were positively correlated with meaningful cognitive engagement. Stoney and Oliver (1999) studied the use of interactive multimedia on motivation and engagement and determined that when students are engaged, it can be assumed that:

students’ prior learning will act in concert with the instruction to determine the types of cognitive engagement they exhibit, such as attention to specific information, analyses and

synthesis of information, visualization, or ability to distinguish between relevant and irrelevant information. (para. 3)

Richardson and Newby (2006) investigated the degree to which students cognitively engaged with their online courses especially in terms of learning strategies and motivations. They utilized Biggs's (1987) Study Process Questionnaire to measure motivations and strategies in general, rather than for specific tasks, and created learner profiles. Richardson and Newby sought to know whether students enrolled in online courses and coming from different program focus areas demonstrated different learning strategies and motivations. Statistically significant findings were observed for program focus, gender, age, and prior online experience in accordance with students' learning strategies and motivations. Specifically, the findings indicated that as students gained experience with online learning, they took more responsibility for their own learning. Richardson and Newby's findings have implications for how instructors facilitate online courses as well as how designers organize online courses. Richardson and Newby recommended future research should go beyond exploring demographics and self-selecting factors and should examine additional factors that allow teachers to more directly influence learning designs.

Measuring Community

According to Rovai it is the sense of community that attracts and retains learners (Rovai, 2001a). Tinto (1993) suggested that students will increase their level of satisfaction and persistence in a college program when they feel involved in the learning community. This means improving students' sense of community may be an important contributing factor to reducing dropout rates. Thus, a need to understand what community means in distance education environments in order to promote a better sense of community exists. Accordingly, Rovai

(2001a) measured sense of community in two university distance-education programs using asynchronous learning networks (ALNs), networks where students can learn using the Internet at the time and place of their choosing. The study consisted of the following programs: (a) an ALN-based program including annual 5-day residencies; and (b) an ALN-based program including monthly 9-hour traditional face-to-face sessions. Rovai's research hypothesis was that, all else being equal, the program with the stronger sense of community would be the one with more diverse opportunities for members of the community to interact. Data for the study were gathered via the Sense of Classroom Community Index, second edition (SCCI2). A self-report questionnaire was administered to both groups during the final 2 weeks of the course (Rovai, 2001a).

Rovai (2001a) provided evidence that sense of community in the monthly meetings group was stronger than in the annual-residencies group at the end of the first year of coursework and that the most important components in which the groups differed were spirit and trust. Community was stronger in the group with more diverse opportunities for members of the community to interact with each other. These results lend support to Cutler's (1996) belief that socialization can lead to greater feelings of trust and satisfaction in turn resulting in a greater sense of community. Rovai's (2001a) finding also supported Dede's (1996b) contention that "to succeed, distributed learning must balance virtual and direct interaction in sustaining communion among people" (p. 199).

The implication of Rovai's (2001a) study for higher education ALN programs is clear. If community is valued, programs that include opportunities for learner-learner and learner-instructor interaction outside the ALN environment can improve sense of community. Further research might extend this research finding to other settings and should include examining the

relationships of various online program characteristics to classroom community.

Retention in Distance Learning

With funding tied closely to student enrollment and accreditation dependent on course quality, completion rates have become a significant measure in higher education (Howell et al., 2004). Debate continues on whether and why courses for distance education students lead to higher noncompletion rates. If these courses really do have higher noncompletion rates, some attribute the difference to the lack of faculty-student interaction, while others say it is impossible to compare the two groups because distance education students are inherently different from traditional students, e.g., older with additional commitments; Carr, 2000).

In a study completed before the widespread use of online education, Moore and Kearsley (1996) found that distance education completion rates were low, 50% at best. However, Carr (2000) found significant variation existed between institutions, “with some reporting course completion rates of more than 80% and others finding that fewer than 50% of distance-education students finish their courses” (p. A39). While these authors have revealed wide variance in completion rates, research focused on the specific dynamics that influence completion and retention appears to be more consistent and helpful.

Kemp (2002) found that “the adult distance learner may be affected by a variety of internal and external factors that account for the continuance/discontinuance in their studies” (p. 65). Kemp cited Kennedy and Powell (1976) and Brindley (1987). Brindley had stated that “life circumstances combine with other factors (e.g. independence, organizational abilities, and social support) [predicted] persistence or withdrawal” (p. 65). Kemp pointed out that a number of researchers have associated previous experience with distance education with greater retention and lower dropout frequencies (see Coldeway, 1982; Langenbach & Korhonen, 1988; Rekkedal,

1983). Wlodkowski (2003, p. 12) found that “better social integration with peers correlates with persistence” and that “research findings from other studies confirm that positive involvement with peers and faculty encourages adult students to persist (New England Adult Research Network, 1999; Tinto, 1998).

The importance of community for improved retention is supported by research. Wehlage, Rutter and Smith (1989) found that effective schools provide students with a supportive community. In a study of adult learners in a worksite GED program, Vann and Hinton (1994) found 84% of completers belonged to class cliques whereas 70% of dropouts were socially isolated. Finally, Ashar and Skenes (1993) found that by creating a social environment in a higher education business program, social integration significantly and positively affected retention. Ashar and Skenes concluded that learning needs alone appear strong enough to attract adults to the program but not strong enough to retain them during the program.

Much research evaluating distance education retention has been done by comparing distance education to traditional education. Earlier researchers of retention described caveats and complexities in comparing distance education and traditional education completion rates. Analysis revealed many problems in comparing the two formats stem from a lack of student-faculty interaction in distance courses, differences in student demographics between the two course types, and inconsistent methods of calculating and reporting completion. Howell et al. (2004) stated that if completion rates are used as a criterion for evaluating the effectiveness of courses, they are best done by comparing apples to apples and oranges to oranges instead of apples to oranges. Howell et al. added that traditional students enroll in distance courses, and therefore, the lower completion rates of distance courses could be caused from motivational problems and not just internal and external factors relating to nontraditional students' lifestyles.

Along with this, Howell et al. cited past findings showing the necessity for student interaction being hard to compare between distance learning courses and classroom-based face to face courses. Based on Howell et al.'s research, the more important effort may be to identify best practices for different student types within both types of education formats and to focus on building a sense of community in all types of classes.

Mentzer, Cryan, and Teclehaimanot (2007) conducted a study comparing student learning outcomes and student perceptions of two randomly selected sections of the same class, a Web-based section and a traditional face-to-face section. Due to the random assignment of students to groups, the students' perceptions and experiences were more indicative of the "average" student as opposed to those students who generally enrolled in Web-based courses. Student perceptions of student-teacher interactions as well as course satisfaction were measured by an identical end-of-semester evaluation in each section and a comparison of mean evaluation scores using an independent sample *t*-test. Results revealed a statistically significant difference between the teacher-student interactions during class discussions in the two groups. Student achievement differed in that the final grades were lower in the Web-based course due to incomplete assignments indicating students in Web-based courses may be less conscientious or less motivated to complete assignments. Findings of this study showed that the two equivalent groups did not have equal experiences in the area of student perceptions and that the face-to-face encounters motivated students to a higher degree. This higher level of motivation can contribute to higher levels of student course completion rates.

Some learning experts consider motivation to be a more important requirement in distance education courses than in conventional courses because distance learners with low motivation have more of a tendency to drop out or fail (Jung et al., 2002). Wlodkowski (2003)

found that lack of time was the primary reason for student attrition among adults. Jacquelyn Tulloch, while executive dean of distance education and college services at the Dallas Community College's LeCroy Center for Educational Telecommunications, commented, "Distance education students tend to leave us because they are very busy, their lives are crammed full of things, and suddenly they find themselves in a situation of having to rethink their priorities" (as cited in Carr, 2000, p. A40). Howell et al. (2004) stated that because adult learners generally have more responsibilities in their daily lives that make it harder to complete their courses, the criticism of "lower" completion rates for distance education—if they are really lower—should be mitigated. Traditional students enrolled in distance courses have the same problems with lack of motivation. Jackson (2001) contended that "there is little doubt that Web-based or even interactive video courses present a daunting challenge to undergraduate students whose discipline and motivation may not be sufficient to complete such courses" (p. 4). Visser (2002) argued that in distance education, "it is often motivational problems, and not the instruction itself, which lay at the root" of low completion rates (p. 95).

Moore (2001) noted that faculty must provide specialized attention to students with low levels of self-directedness to be successful in delivering online courses (as cited in Lindner et al., 2002). Carr (2000) urged faculty to establish personal contacts with their students and to let students know what they expected and required of them. Motivation and retention problems might be mitigated by mentoring and other encouragement-related social factors. Therefore, student-student and faculty-student interaction can be critical to perseverance (Howell et al., 2004).

Howell et al. (2004) stated that because completion appears to be linked to faculty and staff interaction with students, institutions cannot increase their enrollments and expect to

improve completion rates without adequate faculty and staff support for students. In a 2000 study sponsored by the National Education Association (NEA), 66% of NEA faculty had enrollment limits on their courses, and faculty with enrollment-limited courses felt more favorable about distance learning than those without limits (Howell et al., 2004). Astin (1993) stated that small classes make it easier to build community, which is significant, because “students who feel connected to other students and campus community are more likely to persist to graduation” (as cited in Scagnoli, 2001, p. 6).

Self-direction in Distance Learning

Within the last 30 years, researchers of self-directed learning have identified many aspects of this field that have unique and differing concepts (Howland & Moore, 2002). The shift away from oral discourse to the dependency on written communication in online courses has been seen as contributing to difficulties with building collaborative relationships among students (Besser & Bonn, 1996), perhaps due to the depersonalized nature of electronic communication or the absence of social cues and informational feedback (Kiesler, Siegel, & McGuire, 1984).

Past researchers have suggested that self-directed students are more successful in online classes than students who require more external direction, even though asynchronous, online classrooms pose a situational difference in student-student and student-instructor interactions. Perhaps due in part to the general shift in education from primarily direct instruction to more constructivist online learning environments, early linear models (Knowles, 1975; Tough, 1971) have been joined by later models involving more interactivity (Brockett & Heimstra, 1991; Cavaliere, 1992; Danis, 1992; Garrison, 1997a). The instructional design of online courses that reflect components of Brockett and Heimstra’s (1991) personal responsibility orientation model consider the learner as being fundamentally responsible for learning with learning facilitated by

the instructor. The self-management, self-monitoring, and motivational dimensions integrated in Garrison's (1997a) model are specific aspects of self-directed learning that the instructors believed were germane to individuals engaged in an online class environment and perhaps critical to success (Howland & Moore, 2002).

Garrison's (1997a) theoretical model of self-directed learning "integrates self-management (contextual control), self-monitoring (cognitive responsibility), and motivational (entering and task) dimensions" (p. 18). Self-management focuses on goal-setting, use of resources, and external support for learning. Garrison contended that the learner "does not construct meaning in isolation from the shared world" (p. 23). Self-monitoring refers to the ability of learners to monitor both their cognitive and metacognitive processes. To promote self-monitoring learners integrate external feedback with their own self reflection as a form of collaborative confirmation of learning (Garrison, 1997a).

According to Garrison (1997a), "motivation plays a significant role in the initiation and maintenance of effort toward learning and the achievement of cognitive goals" (p. 26). Moore and Kearsley (2005) discussed motivation as an important variable related to adult distance learner success. Citing Merisotis and Phipps (1999), Moore and Kearsley pointed out that the most important factors influencing student success are student motivation, the nature of the learning tasks, learners' characteristics, and the instructor. The distance learning instructor plays a crucial role in maintaining and sustaining students' motivational levels by planning structures and facilitating interpersonal events.

Brockett and Hiemstra (1991) created a model of personal responsibility orientation (PRO) in self-directed learning. Brockett and Hiemstra depicted personal responsibility in the teaching-learning process and as the "cornerstone of self-direction in learning" (p. 27). Personal

orientation refers to the internal characteristics that “predispose one toward accepting responsibility for one’s thoughts and actions as a learner” (Brockett & Hiemstra, 1991, p. 29). Process orientation refers to the external factors that contribute to self-directed learning such as planning, implementation, and evaluation. Personal responsibility in the PRO model provides the link between the external and internal characteristics.

A common thread that runs through many constructs of importance in understanding motivational processes is the identification of internal and external sources of motivation. According to Bandura (1997), outcomes resulting from goal attainment can be personal, self-evaluative, or social. Rovai et al. (2007) focused on intrinsic and extrinsic motivation to explain students' performance in distance learning and face-to-face learning courses by comparing the differences in seven measures of motivation between students enrolled in 12 distance learning and 12 traditional classroom university courses. In this study Rovai et al. described distance learners as older than traditional students, more likely to be female, married with a family and job responsibilities, and apt to have higher incomes. Rovai et al.'s results also provided evidence that online learning students possess stronger intrinsic motivation than on campus students who attend face-to-face classes. This was not to suggest that traditional classroom students do not desire the same personal or self-evaluative outcomes but have different perceived likely outcomes and levels of capability. Such differences may be attributable to the types of students who would self-select online learning as their educational mode of choice. Rovai et al. suggested that instructional methods more suited for self-directed learners represent a better approach in facilitating successful online learning. Also, the question remains whether or not such differences will continue as online learning becomes more common and the majority of educators and non-traditional as well as traditional students embrace the medium.

In a qualitative research study, Howland and Moore (2002) examined students' experiences as online learners to increase understanding of their needs in online courses. Howland and Moore intended to raise issues regarding student communication, learning experiences, and strategies for success. A questionnaire with 12 open-ended questions was sent to students via e-mail. The information collected was segmented and coding categories were developed. The data generated were self-reported perceptions of students' experiences in their online course. The data revealed that self-management, self-reliance, and accurate expectations of learner responsibilities are important attributes for successful Internet-based learning experiences. Some students reported better retention, higher self-confidence, and more opportunity for flexibility to fit their needs. Students reporting positive attitudes about their online course experiences exhibited attributes of constructivist learners, including self-direction.

Using content analysis to analyze transcripts from an online course conducted via computer conferencing, Lee and Gibson (2003) explained how students can be self-directed in a computer-conferencing course by focusing on the instructor and student peer roles and explored techniques students use to be self-directed in an online course. Lee and Gibson referenced Garrison's model (1997a) showing how interactions influence self-direction of students based on the curriculum and dynamic communication among teachers and learners. Lee and Gibson also referenced Moore's (1991) theory of transactional distance involving dialogue and structure to describe the students' distance from the course and the course's flexibility or rigidity to individual needs. In Lee and Gibson's study, transcripts of student messages in an online course were analyzed during Weeks 3, 8, and 13, during which students posted 87% of the class messages. The instructor established minimum guidelines and facilitated learning as a director and observer. Students exhibited interdependent rather than independent responses building

collective knowledge through interaction. Students' high levels of participation and initiation illustrated their active roles related to learning. Interactions between learners and the instructor and among learners provided shared control, critical thinking, and responsibility for learning. Conclusions from analyzing each of these dimensions supported the importance of interaction, collaborative knowledge, and frequent feedback in facilitating self-direction in online learning. Lee and Gibson called for further research into the relationship between interaction and self-direction.

Student Successful Course Completion in Distance Learning

In an effort to address successful course completion, Schrum and Hong (2002) identified organizational, pedagogical, institutional, and student factors relating to the success of online courses. They provided students with a substantive needs assessment at more than 30 institutions that offered postsecondary online learning opportunities. Based on their analysis, Schrum and Hong identified 7 critical factors believed to be related to student success in online courses: personal traits such as self-discipline, lifestyle factors such as time to commit to the course, motivation to perform well, strong study skills, a preference for text-based learning, reliable access to technology, and technology experience prior to the course.

Waschull (2005) developed an online questionnaire designed to measure the same 7 student characteristics identified by Schrum and Hong (2006) and administered it to 1 of 2 sections of online introductory psychology. Results showed 6 of the 7 factors proposed by Schrum and Hong (2002) did not appear to be correlated with course performance. Only self-discipline and motivation significantly correlated with test score average, assignment average, final exam score, and final course average.

Wojciechowski and Palmer (2005) conducted a study examining various student characteristics to determine their relationship to success in an online business course at a community college. All students who had taken this online course during a 3-year period of time were included in the study ($n = 179$). Wojciechowski and Palmer found student grade point average to have the strongest connection to student success in online courses. Wojciechowski and Palmer noted that students with a stronger GPA in other classes appeared to do well in online courses. Other greatest factors in Wojciechowski and Palmer's study were the following: (1) a strong connection between success in the online class and having attended its orientation session; (2) a high correlation between success in the online class and the number of previous withdrawals from other classes; (3) a strong relationship between a student's ASSET reading scores and their final grade in the online class; (4) a positive and statistically significant relationship between previous online courses and the final grade in the class; and (5) a significance of the student's age when examined in relation to the grade received in the online class. Other studies have had similar results. For example, Cheung and Kan (2002) found previous academic achievement to be positively and significantly related to student performance.

Mandernach, Donnelly, and Dailey-Hebert (2006) examined student success in online education and focused extensively on internal learner attributes with little emphasis on external, controllable factors that might have influenced students' ability to perform in a virtual classroom. Mandernach et al. sought to balance student characteristic research with external, direct data from the perspective of online instructors in order to provide a better understanding of the factors predictive of student success in accelerated online courses. Ninety-six out of 368 experienced online educators currently teaching online courses in a distance learning program in the Midwest agreed to participate in the study. The educators were surveyed with open-ended responses, and

Mandernach et al. revealed the 23 relevant factors that clustered into six broad themes. Within these themes, four issues emerged as the most predictive of online learner success: time, technology, initiative, and competence. Individual factors identified in the results of this study were as follows: active involvement in the course and effective time-management; student's personal initiative, drive, or motivation; efficient computer and Internet literacy; and student competence, specifically in reading comprehension, writing skills, communication skills, awareness of online expectations, environment and workload, and organizational skills.

Summary

This study's primary purpose was to investigate whether building a sense of community and student self-direction impacted course level student retention. The review of literature in this chapter identified previously conducted research that applied to the purpose of this study. Applying theory and research on building a sense of community in online education establishes a foundation for the conceptual framework. Studies and research on course-level student retention in distance learning have established the foundation for this study.

As seen in this literature review, distance learning has evolved simultaneously with technology innovation and a changing student population. Community colleges have served the social forces resulting from these changes. As distance learning continues to grow, theories and perspectives of distance learning must be reviewed and revised to meet the needs of traditional as well as non-traditional students. Theories such as transactional distance (Moore, 1973) and distance learning perspectives such as McMillan and Chavis's (1986) psychological sense of community and Rovai's (2002c) CCS have identified the need for community in online classrooms. Rovai (2002c) defined classroom community in terms of four components: spirit, trust, interaction, and learning. Garrison et al. (2000) provided a model of a community of

inquiry and integrated social, teaching, and cognitive presence in a framework for interpreting the online teaching and learning environment. Online learners and their persistence in learning are affected by their learning environment. Learners who succeed can often be self-directed learners or can become self-directed due to the learning environment, as perceived by Garrison (1997a) through his model integrating student self-management, self-monitoring, and motivation.

In concluding this chapter, the literature has shown that the quality of student-student and student-teacher interaction is linked to student persistence (Rovai, 2002a). Next, social integration is directly related to student success (Tinto, 1975), and self-directed learning integrates student control, responsibility, and motivation (Garrison, 1997a). The next chapter explains the methodology for conducting this study.

CHAPTER 3

METHODOLOGY

As outlined in Chapter 1, the purpose of this study was to investigate whether sense of community and self-directed learning readiness in online classes impact successful course completion. Chapter 2 included a review of the relevant literature pertaining to the variables comprising the conceptual framework of the study. The methods and procedures used in this study are discussed in this chapter as are the research questions, population, sample, variables, research design, instrument, and data analysis.

A correlational research design was used to answer the research question posed in this study. The problem was to determine if students' sense of classroom community and self-directed learning readiness influence student successful course completion in online courses. The Classroom Community Scale (CCS) by Rovai (2002c) and the Fisher Self-directed Learning Readiness Scale (Fisher-SDLRS) by Fisher et al. (2001) were used to measure students' sense of classroom community and self-directed learning readiness.

Research Questions

The research questions were based on the conceptual framework and review of the literature. They were the following:

1. Does sense of classroom community influence student successful course completion in online courses?
2. Does self-directed learning readiness influence student successful course completion in online courses?

These questions were answered by testing the following seven null hypotheses:

H₀₁ There is no relationship between sense of classroom community and student

successful course completion.

H₀₂ There is no relationship between connectedness and student successful course completion.

H₀₃ There is no relationship between learning and student successful course completion.

H₀₄ There is no relationship between self-directed learning readiness and student successful course completion.

H₀₅ There is no relationship between self-management and student successful course completion.

H₀₆ There is no relationship between a desire for learning and student successful course completion.

H₀₇ There is no relationship between self-control and student successful course completion.

Population and Sample

The host community college for this study was established in 1985 offering its first classes at area high schools. By 1994 its enrollment had grown to approximately 27,000 students. It has since expanded to serve more than 51,000 students including about 39,000 students taking credit courses. With seven campuses in the North Texas area the college offers more than 100 degrees and certificates in a wide range of disciplines.

The population for this study originally was to be all students currently enrolled in online courses offered by the business, information, and engineering technology (BIET) division at the host community college during the semester of data collection. However, additional departments were added to the population in order to get the required sample size for this study. To answer the research questions presented in this study, the instrument was offered to the entire online

student population at the host community college during the semester of data collection. The sample was derived from the respondents in the population and consisted of student volunteers who were enrolled in all online courses in one specific summer term at the community college in 2010. There was a total population of 1,156 students.

The minimum required sample size for this study was determined by anticipated range of effect sizes (Light et al., 1990, p. 197). Cohen (1988) suggested for multivariate methods a small to medium effect size the level of significance set at $\alpha < .05$, and a power of .70. The minimal sample size required falls in a range from at least 70 to 616 completed instruments for calculating reliable correlations (Light et al., 1990).

Professors of all online courses at the community college were contacted via email or phone and asked to participate by posting for their students an active link to the survey. Students who responded to the survey within four weeks after the survey was posted and who voluntarily submitted their student identification numbers were entered into a drawing for a monetary gift of \$75.00. The total sample of students was 209 and represented 18% of the population.

Literature on Survey Response Rates

Available literature on Web surveys pointed to widely varying response rates, due to many factors. Most studies have shown that paper surveys elicit a higher response rate among college students than do online surveys (Handwerk, Carson, & Blackwell, 2000; Tomsic, Hendel, & Matross, 2000; Underwood, Kim, & Matier, 2000). Reasons for this response rate difference included security risks and data integrity which can present potential problems. Individuals may harbor suspicions about online survey administration and may have concerns about confidentiality that discourage participation (Smith, 1997). Additionally, response rates are

probably more dependent on the population sampled and how it is sampled than on any other factors (Sax, Gilmartin, & Bryant, 2003).

Sax et al. (2003) addressed the issues of response rates, nonresponse bias, and response bias by comparing online surveys and traditional paper instruments drawing data from the 2001 Transfer and Retention of Urban Community College Students (TRUCCS) baseline survey and the 2002 TRUCCS follow-up survey. In Spring 2001, the TRUCCS was administered to 5,001 students at nine Los Angeles Community College District campuses. One year later, the 2002 TRUCCS follow-up survey was administered to 4,387 students as a paper or electronic questionnaire. Response rates were highest among the online only group in the 2002 TRUCCS follow up sample. The higher rate likely resulted because students who returned a follow-up survey via email were those who had provided the TRUCCS project team with a valid email address on the baseline questionnaire in Spring 2001 (Sax et al., 2003).

Sax et al. (2003) also examined response rates and nonresponse bias across four modes of survey administration: paper-only, paper with Web-option, Web-only with response incentive, and Web-only without response incentive. The data were drawn from two sources: the 2000 Cooperative Institutional Research Program (CIRP) survey and the 2001 Your First College Year (YFCY) survey. Because all of the students in the 2001 YFCY mail-out sample had completed the 2000 CIRP at the beginning of the academic year, researchers were able to use CIRP data to compare the characteristics of YFCY respondents to those of YFCY nonrespondents. The YFCY yielded a fairly low overall response rate (21.5%), which was somewhat unsurprising given that response rates to surveys have declined dramatically over time (de Leeuw & Heer, 2002). Sax et al. concluded the low response rate to be due, in part, to the length of the survey. Response rates were highest among students who received a paper survey with the option to complete the survey

online. The two Web options (with and without incentive) yielded the lowest response rates. Sax et al. suspected three shortcomings for this result: little knowledge about the extent to which students regularly check their campus e-mail accounts, students' concerns for privacy and the confidentiality of their responses, and survey length. The 18% response rate in this study is in line with studies by Sax et al. and others.

Research Design

There were seven independent variables in the study. The first three independent variables in this study are one total scale of classroom community and two subscales of connectedness and learning, as defined by Rovai (2002c). The next four independent variables were one total scale of self-directed learning readiness and three subscales measuring self-directed learning readiness as self-management, desire for learning, and self-control, as defined by Fisher et al. (2001). The dependent variable was student successful course completion as measured by whether or not students withdrew from their online courses before the college's designated withdrawal date and received a grade of C or better.

Instruments

Data for this study were gathered from students' demographic self-reports, the Classroom Community Scale (CCS; Rovai, 2002c), the Self-directed Learning Readiness Scale (SDLRS; (Fisher et al., 2001), and overall student retention and grade data maintained by the college for students providing their student identification numbers. Permission to use the CCS was obtained from Mr. Rovai on September 9, 2009 (see Appendix A). Permission to use the Fisher-SDLRS was given in an article by Fisher et al. (2001, p. 522).

A correlational research design was used to conduct this study. Community was assessed using the Classroom Community Scale (CCS) by Rovai (2002c) to establish whether or not a

sense of community had been developed in the online courses, according to the participating students. Self-directed learning readiness was assessed using the Self-directed Learning Readiness Scale (SDLRS; Fisher et al., 2001). Questions from both instruments were combined into one survey (see Appendix B) and made available to students through an online survey that the researcher controlled. Survey results were correlated with students' retention and grade data found in the community college's student database.

Demographics

Students provided their student identification numbers for purposes of discovering course retention status and grade information. Students were asked to identify their race/ethnicity as Caucasian/White, Hispanic/Latino, African-American, Asian/American/Pacific Islander, Native-American, or Multi Racial. Students were asked to identify their gender as male or female. Finally, students were asked estimate of their total number of cumulative college-credit hours earned at all institutions prior to the start of the semester.

Classroom Community Scale (CCS)

The CCS was used to measure students' sense of classroom community. The concept of classroom community was based on the concept of community as contained in the professional literature (e.g., Bellah et al., 1985; McMillan & Chavis, 1986). The CCS consists of a self-report questionnaire of 20 items including 10 items related to feelings of connectedness and 10 items related to students' feelings regarding the use of interaction within the community to construct understanding and the extent to which their learning goals are being satisfied within the classroom setting (Rovai, 2002c). This instrument generates an overall classroom community score as well as two subscale scores, connectedness and learning. Connectedness represents the feelings of the community of students regarding their connectedness, cohesion, spirit, trust, and

interdependence. Learning represents the feelings of community members regarding interaction with each other as they pursue the construction of understanding and the extent to which their learning goals are being satisfied within the classroom setting (Rovai, 2002c).

The classroom community, connectedness, and learning scales were generated as follows. A panel of experts who taught courses in educational psychology was given an initial pool of 40 CCS items based on a review of literature suggesting that the characteristics of sense of community, regardless of setting, included feelings of connectedness, cohesion, spirit, trust, and interdependence among members, and that classroom-specific community issues pertain to member interaction as they pursue understanding and the extent to which their educational goals and expectations are being satisfied (Rovai, 2002c). Each expert independently rated the relevance of each CCS item to sense of community in a classroom environment. Final refinement resulted in 20 remaining items: 10 items related to feelings of connectedness and 10 items related to feelings regarding the use of interaction within the community to construct understanding and the extent to which learning goals are being satisfied. To obtain the overall CCS score, the weights of the subscale scores, connectedness, and learning are added.

A 5-point Likert scoring scale was used on the CCS. To obtain the overall classroom community score, one must add the weights of all 20 items. Total raw scores range from a maximum of 40 to a minimum of 0. Subscale raw scores range from a maximum of 20 to a minimum of 0. To calculate the connectedness score, the scores of odd CCS items, that is, 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19, are added together. Similarly, to calculate the learning subscale score, the scores of the remaining even numbered CCS items are added together.

Rovai (2002c) analyzed the validity and reliability of the instrument that was developed, refined, and field-tested using 375 graduate students enrolled in 28 different Blackboard-based

online courses. An initial set of 20 items was developed for the CCS that addressed characteristics of sense of community regardless of class setting, including feelings of connectedness, cohesion, spirit, trust, and interdependence among members (Rovai, 2002c). Additionally, Hill (1996) and Rheingold (1991) suggested that sense of community was setting specific and that components of community differed from setting to setting. Consequently, a second set of 20 items was developed to represent the specific setting of the classroom, either traditional or virtual. Altogether, 40 items were included in the initial set of items for the CCS.

A panel of experts consisting of three university professors who taught courses in educational psychology evaluated the initial pool of 40 CCS items for content validity. Each expert independently rated the relevance of each CCS item to the sense of community in a classroom environment using a four-point Likert-type scale consisting of *totally not relevant*, *barely relevant*, *reasonably relevant*, and *totally relevant*. The potential score for each item ranged from 0 (*totally not relevant*) to 4 (*totally relevant*). The mean score for each CCS item as evaluated by the experts ranged from a low of 3.33 to a high of 4.00. This review resulted in the deletion of items not rated as totally relevant by all of the experts. The final refinement resulted in 20 remaining items; 10 items related to feelings of connectedness, and 10 items related to feelings regarding the use of interaction within the community (Rovai, 2002c). Validity analysis of the 20 CCS items revealed face value and appeared to measure classroom community.

Rovai (2002c) calculated two internal consistency estimates of reliability for the CCS. Cronbach's coefficient alpha and the split-half coefficient corrected by the Spearman-Brown prophecy formula were used. Cronbach's coefficient alpha for the full classroom community score was .93 and the equal-length split-half coefficient was .91, indicating excellent reliability. Additionally, internal consistency estimates were calculated for each of the two subscales.

Cronbach's coefficient alpha and the equal-length split-half coefficient for the connectedness subscale were .92 each, also indicating excellent reliability. Cronbach's coefficient alpha for the learning subscale was .87, and the equal-length split-half coefficient was .80, indicating good reliability (Rovai, 2002c).

Fisher-SDLRS

The Fisher-SDLRS was chosen for this study. It was derived from Guglielmino's (1977) original self-directed learning readiness scale (Guglielmino-SDLRS), which has been used in educational and nursing research to measure self-directed learning readiness (Linares, 1989, 1999; O'Kell, 1988; Wiley, 1983). Fisher et al. (2001) developed the Fisher-SDLRS in response to a need for a valid and reliable instrument to measure self-directed learning readiness.

The Fisher SDLRS instrument generates an overall self-directed readiness score as well as 3 subscale scores; self-management, desire for learning, and self-control. The subscales of self-management, desire for learning, and self-control were generated as follows. Based on an extensive survey of the literature, a bank of 93 items was developed and deemed to reflect perceived attributes, skills and motivational factors required of self-directed learners (Fisher et al., 2001). An expert panel comprised of 11 nurse academics and nurse educators with previous research and teaching experience in the area of self-directed learning independently evaluated the items during two Delphi rounds. Item-total correlation coefficients were observed and items with lower coefficients were deleted from the scale. A components analysis on the remaining items revealed three components with little degree of overlap. The components were labeled self-management, desire for learning, and self-control.

The Fisher-SDLRS (Fisher et al., 2001) was used to measure student self-directed learning readiness. It consists of a self-report questionnaire of 40 items in a unidimensional scale.

A unidimensional scale measures the same underlying concept, in this case self-directed learning (Fisher et al., 2001). Exploratory factor analysis revealed three subscales: (1) self-management, defined by 13 of the items; (2) desire for learning, defined by 12 of the items; (3) self-control, defined by 15 of the items.

Field (1989) identified that the strongest item-to-score correlations for the SDLRS were produced by those items dealing with love and/or enthusiasm for learning (17.6% of total variance) and those items that appeared to be intimately connected with readiness for self-directed learning had low correlations with total Guglielmino-SDLRS (1977) scores (less than 5% for each factor; Fisher et al., 2001). Also, replication of the Guglielmino-SDLRS has proven difficult (Field, 1989, 1991; Straka & Hinz, 1996). Some studies have raised questions about the reliability of Guglielmino-SDLRS when used in different racial and class populations (Long & Agyckum, 1983, 1984; Straka, 1995). Bonham (1991) also reported concerns about the construct validity of the Guglielmino-SDLRS by questioning the meaning of low scores. It appears that low scores on the Guglielmino-SDLRS do not measure low readiness for self-directed learning but rather a dislike for any kind of learning. Therefore, construct validity remains questionable for low Guglielmino-SDLRS scores. The newer Fisher et al. (2001) scale has ameliorated the problems associated with the Guglielmino-SDLRS.

Fisher et al. (2001) developed the Fisher-SDLRS in two stages. In the first stage, Fisher et al. used a modified reactive Delphi technique to develop and determine the instrument's content validity. Fisher et al. used the modified Delphi technique to gain consensus among an expert panel about the characteristics required for self-directed learning. The expert panel was comprised by 11 nurse academics and nurse educators with previous research and teaching experience in the area of self-directed learning. Each panel member independently evaluated

each item to determine the degree to which the item measures a characteristic of a self-directed learner. In stage 2, Fisher et al. distributed the scale to a convenience sample of undergraduate nursing students in a pilot study to determine the scale's construct validity and internal consistency. A convenience sample of 201 students enrolled in the Bachelor of Nursing program at the University of Sydney was used for the pilot study. To determine internal consistency, Cronbach's coefficient alpha was used. The computed values of Cronbach's coefficient alpha for the total item pool, self-management subscale, the desire for learning subscale, and the self-control subscale were 0.924, 0.857, 0.847, and 0.830 respectively. According to DeVaus (1991), when a scale is represented by a computed alpha greater than 0.70, the scale can be considered to have an acceptable level of internal consistency. Thus, the Fisher-SDLRS was evaluated as a more cost effective and appropriately robust instrument for the proposed study.

Data Collection

Permission for accessing the community college district's data from its institutional records database and for distributing the instruments to students enrolled in online courses at the community college was approved by its Institutional Review Board (IRB) via a letter dated September 28, 2009 (see Appendix C). Permission to conduct the study was received from the IRB at University of North Texas on June 28, 2010 (see Appendix D).

Professors for all selected online courses were contacted via email by the researcher to explain the study and to invite their students to participate. A link to the survey instrument was in the email so the professors could post it for their students (see Appendix E). Professors were encouraged to motivate and encourage their students to participate. The researcher provided students in the online classes an email welcoming them to the survey and encouraging them to participate (see Appendix F). There was also an explanation of the study including information

about student data confidentiality and anonymity of student participation in the email. Students were only allowed to submit one response to the survey. Reminders were sent weekly over the 4-week period of data collection. After the survey instrument had been posted for the 4-week period, the data were downloaded into an Excel spreadsheet.

After the community college district's specified course withdrawal date near the end of the semester, student retention and grade data were downloaded from institutional records in accordance with the IRB requirements into the same Excel spreadsheet containing the survey data. Students who were still enrolled after the withdrawal date were considered retained, and students who received a W on or before the withdrawal date were considered not retained. Retention was measured using the following scale: 1=not retained; 2=retained. Grades were measured using the following scale: 0=F or W; 1=D; 2=C; 3=B; and 4=A.

While stored in the Excel spreadsheet format, the data were prepared for analysis. Data labels were clarified within Excel, text data were converted to numeric format, where applicable, and data were organized for optimal calculations. The prepared data were exported from Excel into PASW, the statistical software package used to describe the sample and test the hypotheses.

Data Analysis

This researcher investigated the relationship of each of the three scale scores generated by the CCS (Rovai, 2002c) and the four scale scores of the Fisher-SDLRS (Fisher et al., 2001) with student successful course completion in the online classes. The descriptive statistics were calculated to show the percentages of gender, race/ethnicity, and cumulative college-credit hours earned. The seven null hypotheses were tested using Pearson r correlation coefficients between each of the seven independent variables and the student successful course completion data.

Before the Pearson r correlation coefficients could be calculated, the assessments were scored. A 5-point Likert scoring scale was used to determine the sense of classroom community. To obtain the overall classroom community score, the weights of Items 5 to 24 were added. Total raw scores ranged from a maximum of 40 to a minimum of 0. Subscale raw scores ranged from a maximum of 20 to a minimum of 0. To calculate the connectedness score, the scores of odd numbered CCS items, i.e., 5, 7, 9, 11, 13, 15, 17, 19, 21, and 23, were added together. Similarly, to calculate the learning subscale score, the scores of the remaining even numbered CCS items, i.e., 6, 8, 10, 12, 14, 16, 18, 20, 22, and 24 were added together.

A 5-point Likert scoring scale was used to determine self-directed learning readiness. To obtain the overall self-directed learning readiness score, the weights of Items 25 to 64 were summed. Total raw scores ranged from a maximum of 40 to a minimum of 0. Subscale raw scores ranged from a maximum of 13, 12, and 15, respectively, to a minimum of 0. To calculate the self-management score, the scores of SDLR Items 25 to 37 were added together. To calculate the desire for learning score, the scores of SDLR Items 38 to 49 were added together. To calculate the self-control score, the scores of the remaining SDLR items, i.e., 50 to 64 were added together.

Pearson r correlation coefficients were calculated between each of the following for classroom community to answer the first research question (Does sense of classroom community influence student successful course completion in online courses?): (1) overall classroom community and student successful course completion, (2) connectedness and student successful course completion, and (3) learning and student successful course completion. Pearson r correlations were calculated to answer the second research question (Does self-directed learning readiness influence student successful course completion in online courses?): (1) overall self-

directed learning readiness and student successful course completion, (2) self-management and student successful course completion, (3) desire for learning and student successful course completion, and (4) self-control and student successful course completion.

Summary

This chapter presented the methods and procedures used to conduct this study, including the research questions, research design, and procedures used for data collection and analysis. The research questions related to whether or not student's sense of classroom community correlated with student successful course completion and whether or not students' self-directed learning readiness correlated with student successful course completion. Each research question was answered by testing the null hypotheses. Each null hypothesis was tested in accordance with a survey instrument based on a CCS (Rovai, 2002c) and the Fisher-SDLRS (Fisher et al., 2001). Three independent variables were used to measure classroom community and four independent variables measure self-directed learning readiness. The seven independent variables were correlated using seven Pearson r correlations with student successful course completion, the dependent variable. In Chapter 4, the characteristics of the population, i.e., gender, race/ethnicity, and cumulative college-credit hours, are described. Correlational matrices between student successful course completion and the seven variables present the results of whether to retain or reject each of the seven null hypotheses.

CHAPTER 4

ANALYSIS OF DATA

The focus of this study was to investigate whether students' sense of community and students' self-directed learning readiness influenced student successful course completion. The population for this study was all students enrolled in online courses at the host community college during one Summer term in 2010. The sample was derived from the respondents in the population. The demographic characteristics collected were ethnicity/race, gender, and cumulative college-credit hours earned at all institutions prior to the start of the class.

A correlational research design was used to answer the following research questions:

1. Does sense of classroom community influence student successful course completion in online courses?
2. Does self-directed learning readiness influence student successful course completion in online courses?

Demographic Data

The sample was derived from the respondents in the population and consisted of student volunteers who were enrolled in all online courses in one specific summer term at the community college in 2010. The entire population (all students enrolled in online courses at the host community college during the three-combined summer terms in 2010), the following demographic data on the gender were collected: 1,040 male students (31%); 2,265 (69%) female students. Of the respondents who completed the survey, the following demographic data on gender were collected: 49 male respondents (23%); 156 female respondents (75%); 4 respondents (2%) not indicating gender. Table 4.1 depicts the gender representation of the sample. Table 4.2 depicts the gender representation of the population.

Table 4.1

Gender Composition of the Sample

Gender	<i>n</i>	%
Male	49	23
Female	156	75
No Gender Indicated	4	2
Total	209	100

Table 4.2

Gender Composition of the Population

Gender	<i>N</i>	%
Male	1040	31
Female	2,265	69
Total	3305	100

Comparing the respondents who completed the survey (all students who took the survey) to the entire population (all students enrolled in online courses at the host community college during the three combined summer terms in 2010), the percentages for male students and female students were similar. The gender representation in the sample was close to the gender representation in the population. This indicated a close approximation of the sample to the characteristics of the population in terms of gender and a higher degree of generalizability for the results of the study.

The respondents who completed the survey ($n = 209$) provided the following demographic data on race/ethnicity: 131 Caucasian/White (62.7%); 10 Hispanic/Latino (4.8%), 39 African American (18.68%); 15 Asian-American/Pacific Islander (7.2%); 1 Native American

(0.5%); 10 multi racial (4.8%); 3 with no indication of race/ethnicity (1.4%). Table 4.3 highlights the race/ethnicity representation of the sample.

Table 4.3

Race/Ethnicity Composition of the Sample

Race/Ethnicity	<i>n</i>	%
Caucasian/White	131	62.7
Hispanic/Latino	10	4.8
African American	39	18.6
Asian-American/Pacific Islander	15	7.2
Native American	1	0.5
Multi Racial	10	4.8
No race/ethnicity indicated	3	1.4
Total	209	100.0

Of the population available to complete the survey (all students enrolled in online courses at the host community college during the three-combined summer terms in 2010), the following were demographic data on race/ethnicity: 2,049 Caucasian/White (62.0%); 304 Hispanic/Latino (9.0%), 513 African American (15.5%); 295 Asian-American/Pacific Islander (9.0%); 27 Native American (0.5%); 117 no indication of race/ethnicity (4.0%). Table 4.4 highlights the race/ethnicity representation of the population.

Table 4.4

Race/Ethnicity Composition of the Population

Race/Ethnicity	<i>N</i>	%
Caucasian/White	2,049	62.0
Hispanic/Latino	304	9.0
African American	513	15.5
Asian-American/Pacific Islander	295	9.0
Native American	27	0.5
No race/ethnicity indicated	117	4.0
Total	3305	100.0

Comparing the respondents who completed the survey (all students who took the survey) to entire population (all students enrolled in online courses at the host community college during the three-combined summer terms in 2010), the percentages for race/ethnicity were as follows: Caucasian/White (62.7% for study; 62% for host college), Hispanic/Latin (4.8% for study; 9% for host college), African American (18.6% for study; 15.5% for host college), Asian American/Pacific Islander (7.2% for study; 9% for host college), Native American (0.5% for study; 0.5% for host college) and multi-racial or no race/ethnicity indicated (4.8% for study; 4% for host college). The race/ethnicity representation in the sample was very close to the race/ethnicity representation in the population. These values indicated a close approximation of the sample to the characteristics of the population in terms of race/ethnicity, suggesting a higher degree of generalizability for the results of the study.

The total number of cumulative college credit hours respondents ($n = 199$) reported to

have earned ranged from 0 credit hours to 351 credit hours, with a mean of 63.6 credit hours and a median of 46 credit hours. Respondents with 0 to 15 hours comprised 12.1% of the sample. Respondents with 17 to 30 hours comprised 19.1% of the sample. Respondents with 31 to 45 hours comprised 18% of the sample. Respondents with 46 to 60 hours comprised 17.6% of the sample. Respondents with 62 to 106 hours comprised 17.6% of the sample, and respondents with over 116 hours comprised 15.6% of the sample. Table 4.5 highlights the student cumulative college credit hours grouped by number of students with percentages for each group and the cumulative percent overall. Comparative data for college cumulative credit hours were not available.

Table 4.5

Student Cumulative Hours of the Sample

Cumulative College Credit Hours	<i>n</i>	%
0-15	24	11.6
17-30	38	18.4
31-45	36	17.6
46-60	35	16.8
62-81	21	10.2
87-106	16	7.9
116-160	17	8.2
175-351	12	5.8
Total	199	96.1

Research Hypotheses

To test the research hypotheses, the seven independent variables were correlated using seven Pearson *r* correlations with student successful course completion (i.e., students who

completed their online courses and earned transferrable credit grades of C or better) as the dependent variable. These correlations provided a correlational matrix for successful course completion and each of the seven independent variables which was used to determine whether to retain or reject each of the seven null hypotheses. Each of the seven variables is represented as shown in Table 4.6.

Table 4.6

CCS and SDL Equivalents for Dependent Variables of the Study

<u>CCS</u>	
Student Learning	CCS Learn
Connectedness	CCS Connect
Classroom Community (Total)	CCS Total
<u>SDL</u>	
Self-management	SDL1
Desire for Learning	SDL2
Self-control	SDL3
Self-directed Learning Readiness (Total)	SDL Total

In testing the research hypotheses, the effect size is represented by the coefficient of determination (r^2). Since the effect size is a measure of how different two groups are from one another the correlation coefficient, or the relationship between the predictor and the outcome, can be recorded as the effect size (Light et al., 1990). The coefficient of determination is a much more precise way to interpret the correlation coefficient since it is the percentage of variance in one variable that is accounted by the variance in another variable (Salkind, 2010).

Cohen proposed small, medium, and large effect size values to be approximately consistent across the different effect size (ES) indexes (Cohen, 1992). Cohen defined small ES

values as undetectable by the naked eye but not so small as to be trivial, medium ES values as visible to the naked eye of a careful observer, and large ES values as the same distance above medium values as small values are below them. Another way to decide on a minimum effect size is to think of practical significance, the real-world meaning attributed to the effects of various correlations (Light et al., 1990). This value can be demonstrated by using the coefficient of determination (r^2). The correlation results are found in Tables 4.7 and 4.8.

Table 4.7

Correlations for CCS and Successful Course Completion (n = 188)

Successful Course Completion Correlations	r	r^2	p
Student Learning Subscale (CCS Learn)	.112	.013	.126
Connectedness Subscale (CCS Connect)	.106	.011	.148
Classroom Community (CCS Total) Scale	.119	.014	.104

Table 4.8

Correlations for SDL and Successful Course Completion for (n = 187)

Successful Course Completion Correlations	r	r^2	p
Self-management Subscale (SDL1)	.258*	.067	.000
Desire for Learning Subscale (SDL2)**	.162*	.026	.025
Student Self-control Subscale (SDL3)	.054	.003	.459
Self-directed Learning Readiness (SDL Total) Scale	.184*	.034	.012

Note. * indicates correlation was significant at the 0.05 level (2-tailed test). ** indicates the sample size was 190 for this variable.

As suggested by Cohen (1988) for multivariate methods, a small to medium effect size with a level of significance set at $\alpha < .05$, and a power of .70 gives a minimal sample size falling in a range from at least 70 to 616 completed instruments for calculating reliable correlations (Light et al., 1990). The effect sizes in this study were categorized as small and indicated a very small effect for the SDL on the dependent variables of the study and an even smaller effect for the CCS on the dependent variables of this study. The effect sizes found in this study were so small that the statistical significant was not considered practically significant.

Research Hypothesis 1

H₀₁: There is no relationship between sense of classroom community and student successful course completion.

Tenable: No significant difference was observed between classroom community (CCS Total) and student successful course completion ($r = .119, p = .104$). Consequently, the null hypothesis was retained.

Research Hypothesis 2

H₀₂: There is no relationship between connectedness and student successful course completion.

Tenable: No significant difference was observed between student connectedness (CCS Connectedness) and student successful course completion ($r = .106, p = .148$). Consequently, the null hypothesis was retained.

Research Hypothesis 3

H₀₃: There is no relationship between learning and student successful course completion.

Tenable: No significant difference was observed between student learning (CCS Learning) and student successful course completion ($r = .112, p = .126$). Consequently, the null

hypothesis was retained.

Research Hypothesis 4

H₀₄: There is no relationship between self-directed learning readiness and student successful course completion.

Rejected: A significant difference was found between self-directed learning readiness (SDL Total) and student successful course completion ($r = .184, p = .012$). The null hypothesis was rejected. This relationship accounted for 3.4% of the variance in student successful course completion and was explained by student self-directed learning readiness ($r^2 = .034$). However, 96.6% of the variance for student successful course completion was related to factors other than the variable of self-directed learning readiness. The lack of shared variance as a proxy for effect size suggested a lack of practical significance.

Research Hypothesis 5

H₀₅ There is no relationship between self-management and student successful course completion.

Rejected: A significant difference was noted between the SDL self-management subscale (SDL1) and student successful course completion ($r = .258, p = .000$). The null hypothesis was rejected. This relationship accounted for 6.7% of the variance in student successful course completion and was explained by student self-management ($r^2 = .067$). However, 93.3% of the variance for student successful course completion was related to factors other than the variable of self-management. The shared variance as a proxy for effect size suggested a lack of practical significance.

Research Hypothesis 6

H₀₆ There is no relationship between a desire for learning and student successful course

completion.

Rejected: A significant difference was noted between the SDL desire for learning subscale (SDL2) and student successful course completion ($r = .162, p = .025$). The null hypothesis was rejected. This relationship accounted for 2.6% of the variance in student successful course completion and was explained by student desire for learning ($r^2 = .026$), but 97.4% of the variance for student successful course completion was related to factors other than the variable of desire for learning. The shared variance as a proxy for effect size suggested a lack of practical significance.

Research Hypothesis 7

H₀₇ There is no relationship between self-control and student successful course completion.

Tenable: A significant difference was not observed between the SDL student self-control subscale (SDL3) and student successful course completion ($r = .054, p = .459$). Consequently, the null hypothesis was retained.

Summary

The research questions in this study were used to investigate whether a sense of community influences student successful course completion and whether self-directed learning readiness influences student successful course completion in online courses. The results for the fourth research hypothesis test indicated a significant difference between student self-directed learning readiness (SDL Total) and student successful course completion. A significant difference was also found between the student self-management (SDL1) variable and student successful course completion. The test for the sixth research hypothesis demonstrated a relationship between students' desire for learning (SDL2) and student successful course

completion. Research Hypotheses 1, 2, 3, and 7 were not significant. Therefore these hypotheses were retained.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER STUDY

The purpose of this study was to investigate whether a sense of community and student self-directed learning readiness influence student successful course completion in online education courses for students of a community college. The results, which were noted in the previous chapter, are discussed in this chapter along with conclusions, implications, and recommendations for further research.

With distance learning critics being quick to assert that completion rates (i.e., retention of students) are lower in distance learning courses than in traditional courses (Howell, Laws, & Lindsay, 2004), questions have arisen as to whether lower completion rates are due to the lack of faculty-student interaction or whether the adult distance learner is affected by not only external but also internal factors that influence their course completion. Instructors play an essential role in the learning environment and need to understand what “community” means in distance learning environments if it is a factor in student course completion rates (Rovai, 2001a). Additionally, Irizarry (2002) stated that online education requires learners to be self-directed, intrinsically motivated, and have practical knowledge of computer technology and that students’ abilities, motivation, and self-beliefs as well as instructors’ teaching practices can determine successful or non-successful course completion.

Drawing on research literature, the concept of learning community has been applied to the virtual classroom through examination of the issue of how best to design and conduct an online course that fosters community among learners who are physically separated from each other (Rovai, 2002a). Additionally, self-motivation can be enhanced with well-designed online instruction which encourages students to be self-directed learners (Diaz & Cartnal, 1999). Rovai

(2002c) developed and presented the Classroom Community Scale (CCS) to determine students' sense of online classroom community. Rovai's definition of classroom community included students' feelings of connectedness and learning to provide a framework for thoroughly investigating a class sense of community. Fisher et al. (2001) developed and presented a Self-directed Learning Readiness Scale (SDLRS) to measure self-directed learning readiness by measuring self-management, desire for learning, and self-control. I found an overall relationship between student self-directed learning readiness (SDL Total) and student successful course completion. Although these results cannot be generalized to the overall online environment, they provided clues about the state of online education at the host community college. The next section discusses conclusions based on the findings.

Discussions and Conclusions

This section reviews and discusses each of the hypotheses in an effort to explain the significant findings in this study and to render a better understanding of online learning student successful course completion at the community college hosting the study. Overall reasons for the outcomes might be related to the small number of students who participated in the survey and to the shorter semester summer classes.

Overall Classroom Community

The first research hypothesis stated there is no relationship between sense of classroom community and student successful course completion. Since classroom community is the primary foundation for Rovai's Classroom Community Scale (CCS), one would expect there to be a relationship. In this case, there was no significant relationship observed between classroom community (CCS Total) and student successful course completion.

Prior research findings in distance learning do not support the findings in this study. Theories such as transactional distance (Moore, 1973) and distance learning perspectives from McMillan and Chavis' (1986) psychological sense of community and Rovai's (2002c) CCS identified the need for community in online classrooms. Possible reasons for this contradictory finding might be attributable to using this instrument with students enrolled in summer semester classes. Summer terms are shorter than regular fall or spring semesters and might not be as conducive to developing a classroom community in online courses. Past research has stated that a community can be described as a group of people who are socially interdependent and that such a community is not quickly formed (Bellah et al., 1985). Also, the small number of students who participated in the survey could have contributed to the outcome.

Connectedness

The second research hypothesis stated there is no relationship between connectedness and student successful course completion. Based on prior research, the success of distance education is the extent to which the institution and instructor are able to provide appropriate dialogue between teacher and learner (Stein et al., 2005). Additionally, Tinto (1975) stated that "social interaction via friendship support is directly related to persistence" (p. 107). However, evidence from my study did not suggest a significant difference was observed between student connectedness (CCS Connect) and student successful course completion. Consequently, the results from Rovai's CCS on this factor suggest that feelings of connectedness, cohesion, spirit, trust, and interdependence among online classroom members have no bearing on student successful course completion. Reasons for this outcome might be, again, related to the small number of students who participated in the survey and to the fact that summer terms are shorter

which reduces the likelihood that students and faculty can establish a sense of community, much less a feeling of connectivity.

Learning

The third research hypothesis stated there is no relationship between learning and student successful course completion. Similar to the first two hypotheses a significant difference between student learning (CCS Learning) and student successful course completion was not apparent in the evidence. Since learning is a component of classroom community (Rovai, 2001a), it follows that learning would not be related to student successful course completion if classroom community has no relationship to student successful course completion as seen in the first hypothesis. Consequently, the results from Rovai's CCS on this factor suggested that learning, when defined as a commitment to a common educational purpose, has no relationship to student successful course completion. Once again, reasons for this outcome might be related to the small number of students who participated in the survey and the length of the summer semester.

Self-directed Learning Readiness

The fourth research hypothesis stated there is no relationship between self-directed learning readiness and student successful course completion. The null hypothesis was rejected indicating there is a relationship between self-directed learning readiness (SDL Total) and student successful course completion. Although a significant difference was found the relationship is small accounting for 3.4% of the variance in student successful course completion explained by student self-directed learning readiness. Hence, 96.6% of the variance for student successful course completion can be related to other factors than the variable of self-directed learning readiness. The effect size (.034) shows a very weak relationship with much overlap in the two

groups of students i.e. those who are successful due to student self-directed learning readiness and those who are successful due to other factors.

In general, theory and research supported these findings that self-directed learning is related to student successful course completion. Self-directed learning has been used as a correlate for students' academic performance and as a perfect indicator of predicting academic success in traditional learning settings or non-Web based distance learning (Long, 1991). With the growing trend toward online learning in the last decade the concept of self-directed learning received widespread attention again. Hanna et. al. (2000) summed it all up in the book *147 Practical Tips for Teaching Online Groups: Essentials of Web-based Education* saying that self-directed learning is a key factor to successful online learning.

Chou and Chen (2008) examined studies with Guglielmino's SDLRS (1977) and Oddi's Continuing Learning Inventory (OCLI; Oddi, 1984, 1986) to identify whether or not self-directed learning is a key factor leading to successful academic performance in Web-based learning. They also found in a study by Corbel (2003) with 191 graduate-level, online learners, a significantly positive relationship between self-directed learning and academic performance. Corbel's positive results might be attributed to graduate-level students which are similar to non-traditional students.

Self-management

The fifth research hypothesis stated there is no relationship between self-management and student successful course completion. The null hypothesis was rejected indicating there is a relationship between self-management (SDL1) and student successful course completion. Although a significant difference was found the relationship is small accounting for 6.7% of the variance in student successful course completion explained by student self-management.

Similarly to the fourth hypothesis which compares self-directed learning readiness to student successful course completion, 93.3% of the variance for student successful course completion can be related to other factors than self-management. The effect size (.067) shows a very weak relationship with much overlap in the two groups of students i.e. those who are successful due to self-management and those who are successful due to other factors.

Prior research also supports these findings regarding self-management. Garrison's (1997a) theoretical model of self-directed learning "integrates self-management (contextual control), self-monitoring (cognitive responsibility), and motivational (entering and task) dimensions" (p. 18). Self-management focuses on goal setting, use of resources, and external support for learning. According to Garrison motivation plays a significant role in the initiation and maintenance in the effort toward learning. Moore and Kearsley (2005) discussed motivation as an important variable related to adult distance learner success. Brockett and Hiemstra (1991) depict personal responsibility in the teaching-learning process and as the "cornerstone of self-direction in learning" (p. 27).

Desire for Learning

The sixth research hypothesis stated there is no relationship between a desire for learning and student successful course completion. The null hypothesis was rejected indicating there is a relationship between desire for learning (SDL2) and student successful course completion. This relationship is also small accounting for 2.6% of the variance in student successful course completion explained by student desire for learning. Hence, 97.4% of the variance for student successful course completion can be related to other factors than a desire for learning. The effect size (.026) shows a very weak relationship with much overlap in the two groups of students i.e.

those who are successful due to a desire for learning and those who are successful due to other factors.

In understanding a desire for learning one must look at the importance of internal and external sources of motivation. According to Bandura (1997), outcomes resulting from goal attainment can be personal, self-evaluative, or social. Rovai et al. (2007) focused on intrinsic and extrinsic motivation to explain students' performance in distance learning and face-to-face learning courses. Rovai et al. described distance learners as older than traditional students, more likely to be female, married with a family and job responsibilities, and apt to have higher incomes. Rovai et al. provided evidence that online learning students provide stronger intrinsic motivation than on campus students. Such differences might be attributable to the types of students who would self-select online learning as their educational mode of choice. Also, as in the two previous hypotheses, other reasons may include internal motivational factors such as self-directed learning readiness and self-management.

Self-control

The seventh research hypothesis stated there is no relationship between self-control and student successful course completion. The data provided no evidence of a relationship between student self-control (SDL3) and student successful course completion. Consequently, the null hypothesis was retained. One would expect there to be a relationship because self-control seems to be a factor of self-management. However, in this case, there was not.

Prior research supports self-management as focusing on goal-setting, use of resources, and external support for learning. Garrison contended that the learner “does not construct meaning in isolation from the shared world” (p. 23). He also contends that self-monitoring refers to the ability of learners to monitor both their cognitive and metacognitive processes, and that to

promote self-monitoring learners integrate external feedback with their own self reflection as a form of collaborative confirmation of learning (Garrison, 1997a). According to Garrison's (1997a) theoretical model of self-directed learning both of these seem to be rooted in an atmosphere of collaborative learning. Hence, although a significant relationship was expected based on past research, possible reasons for the observed outcomes might be related to an absence of classroom community which prohibits collaborative learning.

Also, according to Garrison (1997a), "motivation plays a significant role in the initiation and maintenance of effort toward learning and the achievement of cognitive goals" (p. 26). Additionally, citing Merisotis and Phipps (1999), Moore and Kearsley pointed out that the most important factors influencing student success are student motivation, the nature of the learning tasks, learners' characteristics, and the instructor. In the case of self-directed learners motivation for successful course completion may not be impacted by classroom community. In other words, it may be the nature of the learning tasks or the learner's characteristics from external sources and not self-control at all that provide motivation for successful course completion.

Summary of Findings

As noted previously in the literature, the CCS (Rovai, 2002c) and the Fisher-SDLRS (Fisher et al., 2001) instruments have been used in a variety of settings in higher education to show that a sense of community and a student's self-directed learning readiness have an impact on student successful course completion in online courses. However, the current results were surprising by not supporting a relationship at all between a sense of community and student successful course completion nor by supporting a strong relationship between student self-directed learning readiness and student successful course completion.

As stated in prior hypotheses, possible reasons for this study's findings could be related

to the length of the summer term and to the small number of students that participated in the survey.

Additionally the demographics of the survey respondents might account for some of the gap between the findings in the literature review and the collected data. For example, the gender composition of the sample was 75% female. Rovai et al. (2007) focused on intrinsic and extrinsic motivation to explain students' performance in distance learning and traditional classroom learning. In this study he described distance learners as older than traditional students, more likely to be female, married with a family and job responsibilities. His results concluded that online students may possess stronger intrinsic motivation than traditional classroom students. Hence, intrinsic motivation might be a stronger factor for successful course completion for older, nontraditional students when looking at classroom community.

Other demographics such as student cumulative hours might have impacted the reasons why students enrolled in the summer courses. Most students had already completed their first semester, since 54% of the survey respondents reported accruing 17 to 60 credit hours in their college career. The number of credit hours could indicate that the majority of participants have experienced successful course completion, suggesting a stronger sense of intrinsic motivation.

Implications

The findings in this study present some tentative implications in theory and practice for online courses in higher education. The findings offer information to the online education professionals and professors at the higher education level about the efficacy of enhancing online learning sense of community and student self-directed learning readiness. The implications provide opportunities to consider how to establish a better sense of community in the online

environment and to better assess self-directed learning readiness in students enrolled in online courses.

The results of this study have the potential to enhance the experience of online instructors. Since a desire for learning and student self-management positively correlated with student successful course completion, instructors can consider designing their classes using instructional methods more suited to developing a desire for learning and a sense of self-management in students. Research by Rovai et al. (2007) demonstrated that online students possess stronger intrinsic motivation. Since this study shows a similar finding that self-directed students are more successful in course completion than those students who are less self-directed, implications arise as to how instructors can design their online courses to promote student self-directed learning readiness.

The results of this study have the potential to enhance the experience of online students. Since self-directed learning readiness positively correlated with student successful course completion, students who self-select online courses should be self-motivated and possess a desire for learning. Asynchronous learning networks (ALNs), such as email, online discussion boards, and blogs, as well as synchronous learning networks (SLNs), such as instant messaging and texting, chat, and even meeting in virtual spaces such as Second Life have tremendous implications in bringing the online environment and face-to-face learning together in order to create an environment promoting self-directed learning readiness. With the increasing enrollment of traditional as well as non-traditional students along with diminishing the differentiation between online learning and face to face learning, implications arise as to how to equip students to integrate their self-management and self-monitoring skills in virtual or non-virtual environments.

Recommendations for Future Research

As demonstrated in the studies described in the literature review, current researchers have shown that it is critical for online courses to provide effective communication and interaction. However, more research is needed to determine which formats provide the highest level of interaction and the most effective learning experiences for various kinds of students. As the types of students who self-select online learning as their educational mode of choice expand toward involving more traditional college students, educators increasingly need to understand students' needs in online courses.

Lee and Gibson (2003) explained how students can be self-directed in an online environment. Lee and Gibson supported the importance of interaction, collaborative knowledge, and frequent feedback in facilitating self-direction in online learning and called for further research into the relationship between interaction and self-direction.

Findings from the present study can serve as a framework for further research in examining the relationships of various online programs to classroom community and integrating student control, responsibility, and motivation in self-directed learning, which are areas that are lacking, according to Rovai (2001a) and Garrison (1997a). A similar study incorporating classroom community and student successful course completion across a larger sample during a longer semester, e.g., Fall, Spring, or both could be very beneficial to observe possible relationships more aligned with prior research. With these results, a better understanding of online teaching can be developed, and online instructors can adjust online programs to better meet program goals and objectives.

Recommendations for future studies, based on the literature, include the following: (1) to examine instructors' and students' roles in online interactions that enhance class community

through online discussions; (2) to pursue understanding of the reasons students have for withdrawing from online courses; (3) to understand why students are more likely to be self-directed learners and, if they are, if they really need community for academic success or could it simply enhance their perception as having value; (4) to research the possible relationship between classroom community and building self-efficacy including how classroom community can be used to build self-efficacy; (5) to research the possibility of a learner to be a self-directed learner but have no confidence on a particular topic, and (6) to call for a qualitative study to better understand and develop interventions, e.g., classroom community and self-directed learning, for non-traditional students facing barriers to successful course completion.

Summary

In this study, whether students' sense of community and students' self-directed learning readiness influenced student successful course completion in online courses was investigated. The results showed that students' sense of community did not influence student successful course completion in online courses. This finding was contrary to prior research which showed that students' sense of community influences student successful course completion. Possible reasons for the disparate results from this study might have occurred because of the length of the term (summer term, which is shorter than the regular fall or spring semester) in which the students were enrolled and the small number of students who participated in the survey. The results also demonstrated that students' self-directed learning readiness does slightly influence student successful course completion in online courses. A similar study with a larger sample size might have produced results more aligned with prior research.

As distance education has evolved from correspondence study to television broadcasts, to asynchronous and synchronous communication via the Internet, and finally to a virtual learning

environment, online learners have changed simultaneously, going from engaging in online learning as a necessity to engaging in online learning as a choice which allowed them to have a great deal of flexibility and freedom in pursuing their educational goals. Online learning has become a means to enhance the learning environment as well as use educational resources more efficiently and effectively. However, more research about providing interactive environments among students and between students and instructors as well as implementing pedagogy to encourage self-directed learning readiness in students is needed in order to ensure institutions provide students with quality educational opportunities via the online environment.

APPENDIX A

PERMISSION TO USE ROVAI'S INSTRUMENT

PERMISSION TO USE ROVAI'S INSTRUMENT

Text of email from Dr. Rovai dated 9/28/2009:

Attached is the current version of the index published in 2002. You may freely use it, just cite the accompanying article.

Best wishes,
Fred

Alfred P. Rovai, PhD
Acting Associate Vice President, Academic Affairs, and
Professor of Education
Regent University, ADM-214
1000 Regent University Drive
Virginia Beach, VA 23464-9800
Phone 757.352.4861
http://www.regent.edu/acad/schedu/pdfs/vita_rovai.pdf

APPENDIX B
SURVEY

Classroom Community & Self-Directed Learning Scale

Please complete the following survey concerning your online course in the Business, Information, & Engineering Technology (BIET) division this semester. Read each statement carefully and choose the answer that comes closest to indicate how you feel about the course. There are no correct or incorrect responses. If you neither agree or disagree with a statement or are uncertain, choose the neutral (N) option. Do not spend too much time on any one statement, but give the response that seems to describe how you feel. Please respond to all items. Your responses will be kept completely anonymous. By clicking on the link to begin the survey you are consenting to participate in the study. There are 65 questions in this survey.

Demographics

Student Information

1 Please type your Student ID. Your name will not be identified as part of this study, and your identity will remain anonymous. *

Please write your answer here:

2 Please select your ethnicity/race

Please choose **only one** of the following:

Caucasian/White

Hispanic/Latino

African-American

Asian-American/Pacific Islander

Native-American

Multi Racial

3 Please select your gender

Please choose **only one** of the following:

Female

Male

4 How many cumulative college-credit hours have you earned at all institutions prior to the start of this class? (This includes hours that may not have transferred to this college.)

Please write your answer here:

5 Please type your course prefix, number, and section.

Example: PSYC 2314 8430

Please write your answer here:

CCS

Pilot study

6 I feel that students in this course care about each other *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

7 I feel that I am encouraged to ask questions *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

8 I feel connected to others in this course *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

9 I feel that it is hard to get help when I have a question *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10 I do not feel a spirit of community *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11 I feel that I receive timely feedback *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

12 I feel that this course is like a family *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

13 I feel uneasy exposing gaps in my understanding *

Please choose **only one** of the following:

- Strongly Disagree

Disagree
Neutral
Agree
Strongly Agree

14 I feel isolated in this course *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

15 I feel reluctant to speak openly *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

16 I trust others in this course *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

17 I feel that this course results in only modest learning *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

18 I feel that I can rely on others in this course *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

19 I feel that other students do not help me learn *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

20 I feel that members of this course depend on me *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

21 I feel that I am given ample opportunities to learn *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

22 I feel uncertain about others in this course *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

23 I feel that my educational needs are not being met *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

24 I feel confident that others will support me *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

25 I feel that this course does not promote a desire to learn *

Please choose **only one** of the following:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

SDL

Self-Directed Learning Scale

26 I manage my time well *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

27 I am self disciplined *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

28 I am organized *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

29 I set strict time frames

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

30 I have good management skills *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

31 I am methodical *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

32 I am systematic in my learning *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral
Agree
Strongly Agree

33 I set specific times for my study *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

34 I solve problems using a plan *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

35 I prioritize my work *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

36 I can be trusted to pursue my own learning *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

37 I prefer to plan my own learning *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

38 I am confident in my ability to search out information *

Please choose **only one** of the following:

Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree

39 I want to learn new information *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

40 I enjoy learning new information *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

41 I have a need to learn *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

42 I enjoy a challenge *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

43 I enjoy studying *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

44 I critically evaluate new ideas *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

45 I like to gather the facts before I make a decision *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

46 I like to evaluate what I do *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

47 I am open to new ideas *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

48 I learn from my mistakes *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

49 I need to know why *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

50 When presented with a problem I cannot resolve, I will ask for assistance *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

51 I prefer to set my own goals *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

52 I like to make decisions for myself *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

53 I am responsible for my own decisions/actions *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

54 I am in control of my life *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

55 I have high personal standards *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

56 I prefer to set my own learning goals *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

57 I evaluate my own performance *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

58 I am logical *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

59 I am responsible *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

60 I have high personal expectations *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

61 I am able to focus on a problem *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

62 I am aware of my own limitations *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

63 I can find out information for myself *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

64 I have high beliefs in my abilities *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

65 I prefer to set my own criteria on which to evaluate my performance *

Please choose **only one** of the following:

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Thank you for completing this survey.

APPENDIX C

IRB APPROVAL LETTER FROM HOST COMMUNITY COLLEGE



Institutional Review Board

██████████ College

May 18, 2010

Vera A. Cervantez
Business, Information, Engineering & Technology
██████████ College

Re : Notice of ██████████ College IRB
Study Title : The influence of Classroom Community and Self-Directed Learning
Readiness on Student Retention in Online Distance Courses
PI : Vera Cervantez
Category : Exempt
Study# : 2007-11

Dear Vera:

This letter is to inform you that the changes to your protocol for the project "The influence of Classroom Community and Self-Directed Learning Readiness on Student Retention in Online Distance Courses" has been reviewed. This IRB has noted and approved the Project Title change (previous project title being "Student Outcomes in Selected Distance Learning Courses for the ██████████ Community College District ") and agrees that previous data from previous years can be included in this study as prior IRB approval was granted for this project.

In accordance with 45 CFR Part 46 Section 46.101, this study represents a generic minimal risk survey and data cannot be identified to any particular human subject. The project is thus exempt from further IRB Review by the ██████████ College IRB. We thank you for complying with the requested documentation and provide you with a one year IRB approval/extension of the project. Please be advised this approval is valid for one year as of this date and that any further changes in protocol need to be communicated with the IRB.

Sincerely
Dr. Chris Doumen
██████████ College IRB Chair

██████ nstitutional Review Board (for Human Subjects Research)
 Decision Form

Principal Investigator:	Vera A. Cervantez		
Contact Address:	Business, Information, Engineering & Technology		
Phone Number	████████████████████		
Co-Investigators:	None		
Project Title:	The influence of Classroom Community and Self-Directed Learning Readiness on Student Retention in Online Distance Courses		
Sponsor:	N/A		
Grant Number:	N/A		
Grant Start Date:		Grant End Date:	
Collin Project Number:	2007-11		
Is this a "New" or "Continuing" Project	Continuing		
Date of Submission:	2007		
Date of Resubmission (if applicable):	2009,2010		

For Official Use Only

Reference Number: 2007-11

IRB process:

<input checked="" type="checkbox"/>	Exempt
<input type="checkbox"/>	Expedited Review
<input type="checkbox"/>	Full Review

IRB decision:

<input checked="" type="checkbox"/>	Approved
<input type="checkbox"/>	Not Approved
<input type="checkbox"/>	Conditionally Approved

<u>Chris Doumen</u> IRB chair or Representative	<u>May 18, 2010</u> Date
--	-----------------------------

* IRB approval is granted only for human subjects research conducted by ██████ aculty, staff, or students on or off campus. Significant changes in design or procedures must be discussed with the IRB chair or representative. Periodic reviews of ongoing research are also expected. Any unexpected adverse effects of the research on human subjects should be reported to the IRB chair *immediately*.

APPENDIX D

IRB APPROVAL LETTER FROM UNT

UNT
UNIVERSITY OF
NORTH TEXAS

Discover the power of ideas.

OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND ECONOMIC DEVELOPMENT
Research Services

June 28, 2010

Beverly Bower
Department of Counseling and Higher Education
University of North Texas

Re: Human Subjects Application No. 10258

Dear Dr. Bower:

As permitted by federal law and regulations governing the use of human subjects in research projects (45 CFR 46), the UNT Institutional Review Board has reviewed your proposed project titled "The Influence of Classroom Community and Self-Directed Learning Readiness on Student Retention in Online Distance Courses." The risks inherent in this research are minimal, and the potential benefits to the subject outweigh those risks. The submitted protocol is hereby approved for the use of human subjects in this study. **Federal Policy 45 CFR 46.109(e) stipulates that IRB approval is for one year only, June 28, 2010 to June 27, 2011.**

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

It is your responsibility according to U.S. Department of Health and Human Services regulations to submit annual and terminal progress reports to the IRB for this project. The IRB must also review this project prior to any modifications.

Please contact Shelia Bourns, Research Compliance Administrator, or Boyd Herndon, Director of Research Compliance, at extension 3940, if you wish to make changes or need additional information.

Sincerely,



Patricia L. Kaminski, Ph.D.
Associate Professor
Chair, Institutional Review Board

PK:sb

APPENDIX E
EMAIL TO PROFESSORS

Professors,

I would like to ask if you would post this link <https://www.surveymonkey.com/s/32MVX9Q> in your online class(es) if you are currently teaching during Summer III. I am conducting this survey as part of my research for my dissertation titled, "The Influence of Classroom Community and Self-Directed Learning Readiness on Student Retention in Online Courses." I realize it is late in the term but I am in need of more respondees. I would really appreciate it if you could do this. The purpose of the research is to investigate variables that could influence student retention in college level distance learning courses. Through this survey I hope to share a better understanding of how students' feelings about classroom community and student self-directedness (i.e. self management, desire for learning, and self control) can possibly influence student retention. Upon completion of this research I hope to develop a deeper understanding of students' feelings which in turn can influence the role of the instructor and/or course designer in incorporating best practices in online courses, promoting a stronger sense of community and/or student self-directedness, and raising student level retention rates. This survey will in no way reflect what is going on in your class or how you are teaching it. It will simply collect data on students' feelings and how they see themselves as part of a classroom community or not, and how they feel about themselves as self-directed learners or not. (I am going through instructors to contact the students instead of directly to the students because I know that most of the time students do not read their Cougarmail.) The results of this survey will be compared to student level retention data via Student ID numbers to see if these feelings have any bearing on student retention in online courses.

The first page of the survey will consist of an informed consent letter inviting students to participate and informing them about the survey, the purpose of the research, student data confidentiality, and anonymity of their participation. I will also be sending out periodic reminders to each student during the term. I would really appreciate it if you would not only post the link but also ask your students to read their Cougarmail concerning the survey and encourage them to participate by taking and submitting the survey. Also let them know that upon completion of the survey each student who voluntarily provides his/her Student ID number will be entered into a random drawing for a monetary gift of \$75.00. I can also provide you with results of this survey if you will request it by sending me an email at [acervantez@\[REDACTED\].edu](mailto:acervantez@[REDACTED].edu)

If you have any questions or concerns about the survey please contact me at the above specified email. The Institutional Review Board (IRB) at the University of North Texas as well as the IRB at [REDACTED] College have both approved this study. Thanks so much in advance for your help!

Vera A. Cervantez
Professor, Comp Info Systems
[REDACTED] College
[REDACTED] Campus H 215
Office: [REDACTED]

APPENDIX F
LETTER TO STUDENTS

LETTER TO STUDENTS

Dear Student,

Please see information on a chance to win \$75.00 and a chance to give input on how students learn by simply completing a survey! If you've already completed this survey please disregard this email.

I am inviting you to participate in a research project to study the influence of classroom community and self-directed learning readiness on student retention in online courses. Along with this letter I have sent your professor a link to the survey to post for you as well as information on this project. I am asking you to look over the survey and, if you choose to do so, click to enter it, complete it, and submit your responses. It could take you up to 15 – 20 minutes to complete. If you did not get the link please let me know and I will send it. However, you can only take the survey once.

When you open the survey you will see information on it as well as the reason it is being distributed. Your responses will not be identified with you personally, will not be shared with anyone, and will not have any bearing on your grade. You will be asked for your Student ID number, but once the student survey data are matched to the institutional retention data your Student ID number will be removed from the data.

I hope you will take the time to complete this survey and submit it to me. Your participation is voluntary, and there is no penalty if you do not participate. However, if you do respond to the survey and voluntarily submit your Student ID number you will be entered into a random drawing for a monetary gift of \$75.00.

If you have any questions or concerns about completing the survey or about being a part of this study, please contact me at [acervantez@\[REDACTED\].edu](mailto:acervantez@[REDACTED].edu). This research project has been reviewed and approved by the UNT Institutional Review Board (IRB). Contact the UNT IRB at 940-565-3940 with any questions regarding your rights as a research subject.

Vera A. Cervantez
Professor, Comp Info Systems
[REDACTED] College
[REDACTED] Campus H 215
Office: 972-377-1659
e-mail: [acervantez@\[REDACTED\].edu](mailto:acervantez@[REDACTED].edu)

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