UNDERGRADUATE STUDENT PERSPECTIVES ON INTRODUCTORY ONLINE COURSES

by

DAVID GORDON BOOP

(Under the Direction of Libby Morris)

ABSTRACT

This study used a mixed method approach to investigate student perceptions about their online course experience. Specifically, this research looked into the perceptions of students that withdrew from the online learning environment and those students that completed similar courses. The subjects used for this study were students who registered and started the eCore™ program during the fall semester of 2003. Student completers and withdrawers were each mailed a questionnaire at some point in the semester. Out of the completed surveys, eight withdrawers and eight completers were interviewed about their experience with eCore™.

INDEX WORDS: Computer Assisted Instruction, Computer Uses in Education, Educational Technology, Courseware, User Friendly Interface, Computer Managed Instruction

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DEDICATION

This dissertation is dedicated to family and friends. Without their help, this dissertation would not be finished. Even though they are not with me in body, my parents have been with me in spirit throughout the process of finishing my doctorate. My wife, Cheryl, assisted me greatly with encouragement, love, and expertise.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

CHAPTER 1

INTRODUCTION

An exponential growth occurred during the past decade in the number of collegiate courses offered in the online environment according to the U.S. General Accounting Office (http://www.gao.gov/new.items/d021125t.pdf). While the recent growth of online courses has been extraordinary, the dropout rate in these courses has been higher than in comparable in-class courses (Diaz, 2002). "Although there is significant variation among institutions—with some reporting course-completion rates of more than 80 percent and others finding that fewer than 50 percent of distance-education students finish their courses—several administrators concur that course-completion rates are often 10 to 20 percentage points higher in traditional courses than in distance education" (Carr, 2000, p. A39). Researchers and administrators are trying to understand the reasons behind these higher dropout rates for online courses compared to in-class courses.

The University System of Georgia recognizes the importance of utilizing new technologies to enhance educational opportunities for students. The mission statement of the University System of Georgia includes four goals for all institutions in the system. One of the goals states that each institution will "utilize technology to advance educational purposes, including instructional technology, student support services, and distance education." In its strategic plan, the University System of Georgia also lists eleven goal statements intended to ensure academic excellence and educational opportunities for all Georgians. The second goal statement represents the objective of "expanding participation by increasing access while

maintaining quality, enhancing diversity, focusing on the needs of nontraditional students, increasing distance education opportunities, advancing public library usage, and marketing the advantages of a postsecondary education to all Georgians" (http://www.usg.edu/about/statements.phtml).

Beginning in 1999, the University System of Georgia's Advanced Learning Technologies (ALT) unit worked with five of the thirty-four system institutions to develop and offer an electronic core (Lasseter & Rogers, 2004). eCore™ courses are intended to allow students to complete the first two years of lower division core courses fully online. As a part of its assessment efforts, ALT has begun to research the reasons behind the relatively high withdrawal rate from online courses.

As part of their withdrawal process, eCore™ students are asked to complete an online "Intent to Withdraw" form which, among other things, asked students to provide a reason for their decision to leave the course. After reviewing several semesters of these forms, ALT researchers were able to identify a dozen reasons stated by students, and further classified these reasons into four categories: Individual Factors, Resource Factors, Instructional Factors, and Other Factors. An analysis of the data found that over 43% of the students indicated that Instructional Factors influenced their decision to withdraw from eCore™ courses (Morris, McKlin, Xu, Wu, & Finnegan, 2002).

The fact that 43% of all students dropped out of eCore™ courses for instructional issues is important for two reasons. First, it is the most cited reason for dropping eCore™ courses. Second, administrators and professors may respond more readily to these issues since, unlike the other three factors for withdrawal (Individual, Resource, and Other), the Instructional Factors

could potentially be altered by course designers, individual students and instructors to reduce withdrawal rates from online classes.

In attempting to investigate factors that may account for student withdrawal from online courses, this study focused on two interrelated areas of exploration. The investigation identified reasons students give for dropping out of online courses. The study also explored the instructional and course-related strategies that can encourage students to remain in online courses.

Research Design

Two questions are addressed by this research. First, why do students withdraw from online courses? Specifically, what are the instructional reasons that students report for withdrawing from online courses? Second, what are the instructional and course-related strategies that may encourage students to remain in online courses?

Qualitative and quantitative data were collected during the fall semester of 2003 to answer the research questions. A survey based on the *Applying the Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1991) was created to gain a more in-depth understanding about student dropout from online courses. Specific attention was given to probing instructional reasons for withdrawing from a course. This survey was sent to 230 students who withdrew from online courses and to 275 students who completed online courses. A total of 101 questionnaires were analyzed for completers and withdrawers. A 22% response rate was obtained from all students (19% from the completers and 25% from the withdrawers).

The qualitative research portion of the study was implemented with students who enrolled in eCore™ courses in the 2003 fall semester. The interviews were conducted with two subsets of students: those that withdrew from eCore™ courses and students who successfully

completed a course. Sixteen students (eight students who dropped out of a course and eight who successfully completed a course) were interviewed. The interviews were conducted via telephone as the students were located throughout the state of Georgia. The total of sixteen students interviewed represented 16% of the all research participants.

Background Information

The study of student retention in higher education began in the early 1970s, and continued in earnest through the late 1990s. A major impetus for the study of student dropout rates was the declining base of traditional-aged students during this period. The research by scholars such as Astin (1985), Pascarella & Terenzini (1991), and Tinto (1987) set the foundation for work by subsequent researchers. Initially, these researchers focused their efforts on understanding the problems faced by traditional-aged (18-24 year olds), full-time students who resided on-campus.

By the mid-1980s, enough research had been done on student departure to allow Vincent Tinto to author his groundbreaking book entitled *Leaving College: Rethinking the Causes and Cures of Student Attrition (1987)*. Tinto's research led to the development of a model of individual departure from college to explain student withdrawal. Tinto postulated that students who dropped out of college were unhappy because they had not been fully integrated into the college environment.

According to his model, four stages play a role in a student's decision to remain in or leave college. The first stage is labeled Pre-Entry attributes (e.g., family background, skills and abilities, prior schooling). Stage 2 is Goals and Commitments, with the components of intentions, goals, and institutional commitments. The third stage, Institutional Experiences, occurs when students matriculate to campus. In the Institutional Experiences stage, students

interact with the Academic System (Academic Performance, Faculty/Staff Interactions) and the Social System (Extracurricular Activities, Peer Group Interactions). The fourth stage, Personal/Normative Integration, is divided into Academic Integration and Social Integration. After this stage, the student will reassess his/her Goals and Commitments based on three variables (Intentions, Goals and Institutional Commitments, External Commitments) may influence the student's decision to remain in or leave college (Tinto, 1987).

The work by Tinto (1987) has been accepted as a cornerstone for further research in the field of student retention and has led to numerous studies; however, other researchers have been quick to point out the limitations of the model. For example, the portion of the model based on the rites of passage fit quite well when used with 18 year olds transitioning from high school to college, but non-traditional, part-time adult students who enter or reenter higher education hardly feel the same rite of passage as a freshmen moving into a residential hall for the first time. Similarly, the usefulness of the model for explaining withdrawal from online programs has not been demonstrated in the current literature.

In the early 1990s, new theories and principles began to emerge, which helped explain the phenomenon of student engagement or student dropout in distance education. For example, in 1991, Chickering and Gamson adapted the widely referenced *Seven Principles for Good Practice in Undergraduate Education* (1987) for application to distance education. This research made extensive use of the principles as they apply to distance education in designing the instruments for this study.

In 1996, Moore and Kearsley advanced a theory of transactional distance. In the now often cited book *Distance Education: A Systems View,* Moore hypothesized that distance is a pedagogical, not geographic, phenomenon. In describing transaction distance, Chen (2001)

explained that it is a psychological barrier that might lead to a communications gap and/or to potential misunderstandings between instructors and learners. Chen, in citing Moore, suggested that this distance has to be overcome if effective, deliberate, planned learning is to occur (Chen, 2001).

Margaret Martinez (2001) developed a Learning Orientations model to investigate learning in adaptive environments and whole-person learning. The guidelines of the model show the dominant influence of emotions, intentions, and social factors on how individuals learn. She proposed four learning orientations: transforming, performing, conforming, and resistant.

Martinez's (2001) research provided suggestions for designing learning environments. For those students who are transforming learners, or those who prefer loosely structured courses, the course designers might create sophisticated, discovery-oriented, mentoring environments where learners who want to be assertive and challenged by complex, problem solving situations are able to self-manage learning and can attain higher standard, long-term goals. Performing learners tend to prefer semi-complex, semi-structured, coaching relationships that stimulate personal value and provide creative hands-on interaction. These students would benefit from project- or task-oriented, energizing, competitive, interactive (hands-on) environments that use coaching, practice, and feedback to encourage self-motivation, holistic thinking, problem solving, self-monitoring progress, and task sequencing, while minimizing the need for extra effort and difficult standards. Conforming learners prefer safe, structured, guiding relationships that help them avoid mistakes and achieve easy learning goals in a simple fashion. These students need simple, scaffolded, structured, non-task environments that use explicit, careful guidance. These environments should also encourage learners to take assertive challenging steps towards more independent, self-motivated achievement.

The distributed nature of distance education allows educational opportunities for a wide range of students. Research by Valenta, Therriault, Dieter, & Mrtek (2001) suggests approaches on how an educational program might fine-tune its online delivery for maximum suitability and acceptability to the broadest group of learners in post-secondary education. The study offers insights into student attitudes about what is important, neutral, and unimportant with online distance education. According to the authors, the effectiveness of distance education depends upon three factors: time and structure in learning; social interaction in learning; and convenience in learning. Examples of important features regarding time and structure in learning were the ability to work at home, allowance of flexible time management, and learning at one's own pace. Students felt that important traits of social interaction in learning included fewer subtleties in teaching input, less participant discussion, and the ability to work at home. Important attributes for the convenience in learning factor included ability to work at home, elimination of travel time, and flexible time management.

Significance of the Study

While distance education is not a new field of study, the delivery of education via the Internet is a relatively new phenomenon. A review of the research literature related to distance education shows the paucity of studies about retention issues in online higher education courses. Recent studies reveal some descriptive articles about instructor experiences in the design of web-based courses; however, most of these are not the result of systematic research methods.

Research in online education has passed through various stages in its development. Studies initially focused largely on technical issues. Recently, however, more studies have been devoted to student preparedness and instructional design. Due to the high dropout rate in online

courses, more studies are needed that explore the causes of attrition and retention in online education.

The growing popularity in distance education over the past decade and the lack of research in this area make the topic of online retention of great interest to the eCore™ professional staff, as well as administrators, researchers, and faculty who work in online education. The University System of Georgia has undertaken the task of expanding opportunities for students to take freshman and sophomore level electronic courses (eCore™) via the Web. With over 1,000 students enrolling in eCore™ courses each semester, it is important to find out more specifically why students withdraw from or remain in completely online, asynchonous courses. Findings from this study may provide information for course development revision, the professional development of faculty, and development of support structures for students in the online environment.

Summary

This dissertation is divided into five chapters. Chapter two is a review of the current research about online education. This literature review is grouped by the following major topics: retention and attrition in distance education, student engagement and interaction in distance education, and instructional design. The third chapter provides specifics on the methodologies used in this study. Since this study utilizes a mixed methods approach, data is divided into sections on qualitative and quantitative methods of inquiry. Details about the manner in which the study was conducted are provided in this chapter. The results and analysis of the study are in the Chapter Four. The last chapter provides a summary of the findings and recommendations for further study.

CHAPTER 2

A REVIEW OF THE LITERATURE

While distance education (DE) has been around for over a century, initially as correspondence courses, online education in higher education began to explode in the mid-1990s. The expansion of online education created a need for scholarly research into this new method of delivering education. Articles regarding the unique experience of online education began to appear in existing journals about higher education; however, journals dedicated to the study of online education began publication in the decade of the 1990s. This study was influenced by three areas of research: attrition within distance education; student engagement and interaction within distance education; and instructional design, professor responsibility, and learning theories.

Retention and Attrition in Distance Education

There has been little investigation regarding the reasons behind student drop out in distance education at the collegiate level. In reviewing the research literature, this area showed the greatest paucity of information. However, the existing studies indicate that students drop out of distance education classes at a higher rate than comparable face-to-face classes (Morris, 2003).

Few investigations have evaluated the impact of student attitudes and traits as they relate to student completion. Research up to this point revealed two studies (Loomis, 2000; Kemp, 2002) that attempt to answer some of the questions related to this topic. Both studies show that

students with positive attitudes about coursework specifically, and life in general, tend to drop out less than students with poor attitudes.

Loomis (2000) investigated the relationship between students' individual study and learning styles with their performances in an online research methods class. At the beginning of the semester, the Learning and Study Strategies Inventory (LASSI) measured each student's study and learning styles on ten scales. The ten scales are attitude, motivation, time management, anxiety, concentration, information processing, selecting main ideas, study aids, self-testing, and test strategies. The study concluded with several key findings. First, that attitude was a predictor for whether a student dropped the class before the end of the semester. It was also noted that time management was a very strong predictor of one's overall performance in this class (i.e., students with weakness in managing time received lower grades). Students who did not report strong concentration skills had marginally lower performances on non-exam assignments (e.g., journal reports, chapter assignments, and final project) and were perhaps distracted in the dorm or computer lab. In this study, students who dropped the class tended to score lower on the selecting main ideas scale, and students in the class who did not report good study skills on the LASSI did not do as well in the class. The study skills scale showed the greatest number of performance correlations (Loomis, 2000).

Kemp (2002) investigated the relationship between persistence, life events, external commitments, and resiliency in undergraduate distance education. Scores from the Resiliency Attitudes Scale, the Life Events Inventory, and a questionnaire relating to external commitments were used to form the independent variables. Successful course completers tended to score higher in the following areas: the ability to recruit and select healthy partners and in the ability to develop and maintain healthy relationships; the ability for knowing what is right and wrong and

being willing to take risks for those beliefs, and for asking searching questions and giving honest answers; the ability to master oneself and one's environment, and the ability to generate constructive activities; and on three skills relating to persistence--that is, the ability to make things better, persistence at working through difficulties, and the confidence to make the most of bad situations (Kemp, 2002).

A relatively small number of studies explored the problems and rationales given by students for withdrawing from distance education classes. A five-year study with community college students taking online classes cited five reasons why students withdrew from these courses. The stated reasons for withdrawing remained consistent over the length of the study. The reasons for dropping classes were work schedule conflicts; bad or inconvenient times; personal problems; too hard or bad grades; and disliking the instructor (Conklin, 1997).

A Virginia community college took a more in-depth view of the questions behind enrollment patterns, retention, and success in distance learning courses and student perceptions. The Tidewater Community College (TCC) conducted a two-year study to learn more about issues in three modes of distance education course delivery: telecourse, online, and compressed video. The researchers found several key items of interest. The study discovered that students tended to enroll in compressed video courses because it was the only course section available, while online and telecourse students cited scheduling conflicts and other responsibilities as the primary reason for enrolling. The overall retention rate of distance learning students was 66% and compared favorably to the overall college retention rate of 65%. Compressed video students had a 92% success rate (using grades to define success), and both online and telecourse students had a 61% success rate. The overall TCC success rate was 74%. Researchers found that students who successfully completed the first in a sequence of courses (i.e. History and English) were

better prepared for the next distance education course than students who took face-to-face classes before enrolling in an online course. It was also noted that online students felt there was more opportunity for discussion, and they were more likely to actually participate in the discussions online as compared to a traditional classroom (Tidewater Community College, Office of Institutional Effectiveness, 2001).

Studies conducted by Hiltz (1997) and Schrum and Hong (2002) indicated that students tend to drop out of online classes at a higher rate than face-to-face, but they looked at factors that students, professors, and online course designers need to consider. According to the Hiltz (1997) study, "overall ratings of courses by students who complete ALN [asynchronous learning network] based courses are equal or superior to those for traditional courses. Dropout or Incomplete outcomes are somewhat more prevalent, while grade distributions for those who complete tend to be similar to those for traditional courses" (Hiltz, 1997, p.19).

Both studies attempted to extract information about online course environments that foster retention. The Hiltz (1997) study, conducted at the New Jersey Institute of Technology (NJIT), showed that 40-50% of students had trouble with dial-up internet connections. The students also reported that they were less likely to 'attend' class when their lives became busy. The students in the Schrum and Hong (2002) study indicated similar experiences. The more difficulty the student experienced in getting to the equipment, the easier it was to find reasons to drop the course (respondents perceived this dimension as significant). Students without regular access to appropriate tools, at home or at their work, tend to have more difficulty in succeeding in online learning. Students with reliable access at home were considered to be at a distinct advantage because they were able to focus on their learning on their own time schedule.

Another aspect of each study highlighted the rigorous nature of online courses. A vast majority (71%) of the NJIT students indicated that online courses provide better access to professors. Over two-thirds of the students felt that the online courses are, overall, 'more convenient'. Just over half (55%) felt more motivated to work hard on their assignments because other students would read them, while 67% disagreed with the statement 'I didn't have to work as hard for the online class', and 58% said they would take another online course (Hiltz, 1997). The Schrum and Hong (2002) study reported findings that parallel the NJIT students. Educators reported that some students have trouble finishing a course because they are concerned about learning alone; they suggested that students work in groups. Mistakenly, some people may believe that online education is quick or easy; educators suggest that giving some flexibility was a good way to help students study on their own. Finally, some educators reported difficulty in determining how well the students understood the readings without receiving frequent questions from the students; educators suggest that minimum requirements for posting questions and answers on the readings may force students to work harder than in a face-to-face class (Schrum & Hong, 2002).

The Schrum and Hong (2002) study further identified factors that impact student retention in online learning. They determined that it was not sufficient to merely have access to the appropriate tools, but students needed to have a level of comfort with using the technology available. Individuals must be able to recognize their own abilities and styles to be able to ask or modify the learning necessary for online environments. In addition, students have to be aware of responsibilities that govern their lives. Finally, individual differences, such as lack of self-discipline, are critical factors that influence student success in online classes since there is a higher level of personal responsibility needed for online students to complete the course. The

research concluded with suggestions for reducing student withdrawals: encourage students to post a short autobiography at the beginning of the course; interact with students one-on-one and on a regular basis; have the students work collaboratively on their assignments; establish minimum levels of participation in discussion; provide up to date readings that are challenging; create some places online where students can ask each other for help; be flexible in course topics and procedures; allow for individual learning goals; and design an online course using a technologically minimalist approach (Schrum & Hong, 2002).

Student Engagement and Interaction with Distance Education

A number of practices currently operative in distance education are designed to foster interaction between faculty and students, as well as between students themselves. In reviewing the research literature, most of the studies that investigated student engagement focused on adult learners and graduate students. A few studies were conducted at foreign institutions of higher education.

Recent studies have shown that a crucial indicator of whether students will withdraw from online courses is familiarity with the technology. Several studies pointed out the importance of making students feel part of a learning community in online classes. Previous research findings showed that the importance of student engagement online is not limited to students working on assignments independently, but also to students working on small group class assignments.

Most writers have ignored the importance of previous experience with online education when investigating student withdrawals from courses. One study explored the importance of previous experience with online education by students and the factors that created a welcoming online course environment. This study (Brown, 2001) divided adult students taking online course

into three groups: 'veteran' (moved from novice to experienced DE students); 'newbies' (new DE learners); and 'summer' (both veteran and newbies in this group). Nine themes emerged through open coding: 1) similarities/differences of students; 2) their various needs; 3) the students role; 4) the instructor's role; 5) the class structure; 6) the program structure; 7) participants comparisons of various forms of DE as well as comparisons for DE and face-to-face; 8) past and future change in communities and in education; and 9) feelings they experienced during their DE classes. In an effort to help understand the benefits of prior online course experience, the study created time triangles. First, picture a triangle that represents time. The base of the triangle represents the time needed by new students to get up to speed on technology, pedagogy, and content. The peak is the time that is left for students to get to know each other. Now, picture an inverted triangle that represents the time for veterans to begin another class.

Brown (2001) noted a major discrepancy between groups that developed a strong sense of community and groups that did not develop a sense of community. Two themes emerged from the study: members of a community generally had something in common, and these members felt they were part of a 'learning community' where everyone helps one another. The researchers conceptualized three levels of community building which started with making friends, then led to community conferment following a long, meaningful post to a group discussion, and, finally, camaraderie achieved after long-term and/or intense association with others. In contrast, students who did not develop a sense of community did not envision group activity prior to class or want to participate once enrolled. They let personal issues take importance over class, lacked the necessary time commitment, and felt the need for face-to-face interaction.

This study identified the process necessary to build a strong sense of community and the theoretical propositions based on the analysis of the data. Following the initial stages of getting

comfortable with online courses, students who developed a deeper sense of community felt a supportive interaction with others that bolstered self-confidence and raised comfort level. They also felt substantive validation when the student felt his/her ideas were worthy of discussion, were fully engaged with other students, and experienced community conferment by being part of long threaded discussion. They sensed a widening circle of friends with 'veterans' playing a major role of conferring community on new students, which often led to long-term personal friendships. The authors presented a list of theoretical propositions to enhance online course design. They determined that online community was present for some participants and not for others, even those in same class. Modeling, encouragement, and participation by the instructor helped the community form more readily, and veteran students could help create online community or hinder its formation or both. Levels of community were closely linked to levels of engagement, qualities such as respect and trust were found in descriptions of online classrooms, and feelings of acceptance and worthiness were transmitted through online community conferment (Brown, 2001).

Several other studies point out the importance of establishing a sense of community in online courses. Specifically, three studies explore the phenomenon of creating learning environments that encourage a strong sense of community. Out of the three studies, two are conducted with graduate students (Picciano, 2002 and Poole, 2000), while the third study (Svensson & Magnusson, 2002) explored the online and offline activities of Scandinavian students taking Computer Science classes.

Two studies with American graduate students identify important factors related to the creation of a student's sense of belonging. In the Picciano (2002) study, education professionals seeking to become school administrators took a thirteen-week long course with weekly themes

and topics. It is important to note that 80% of the subjects in the study were women. Each week, a select number of students were selected to work with faculty as class facilitators. Students were provided with an overview of techniques to foster a sense of presence and community building. These included complimenting students, self-disclosure, warmth, and activities that build and sustain a sense of group commitment.

These recent studies continue to provide insight into the importance of community building in online classes. The graduate students in both the Picciano (2002) and Poole (2000) studies concluded that a sense of social presence provided a statistically significant relationship to performance on written assignments. These studies attributed high participation activities, such as postings to discussion groups and acting as a class moderator, to the creation of a sense of community. Requiring student participation as a moderator, after providing students with a foundation regarding what the role entails, can have a positive effect on discussion. It is likely that moderator responsibilities also contributed to the students' sense of community (Poole, 2000). Interestingly, student perceptions of interaction and learning indicated there is a strong, positive relationship between student perceptions of their interaction in the course and their perceptions of the quality and quantity of their learning. Those who felt the "presence" of their colleagues because of what was read and written on the discussion board perhaps could relate better to an activity such as the written assignment that was similar to the discussion board activity. On the other hand, their sense of "presence" possibly did not relate to an objective, multiple-choice exam because it was not an expressive activity but an asocial impersonal activity (Picciano, 2002).

A study of Scandinavian students (Svensson & Magnusson, 2002) taking a full-time DE program in Computer Science and Systems Analysis involved interviews with thirteen of the

forty-six students enrolled. Fourteen additional students kept a study journal for two weeks, describing all study-related actions. The aim was to explore how students in a learning center-based DE organize, perform and perceive their collaborative work, online as well as offline, and how these issues can be related to their use of information and communication technology. In previous research, the social aspects of DE was approached from several different perspectives. Based on Media Richness Theory and Social Presence Theory, it has been argued that the social quality of computer-mediated interaction is largely predetermined by the medium (see for example Daft & Lengel, 1986). This view is challenged by Gunawardena (1995) who shows how the social presence is not solely a static property of the technology, but should rather be seen as dependent on the participants' subjective perceptions (see also Leh, 2001, and Svensson & Magnusson, 2002).

Svensson and Magnusson (2002) considered the work of Gaver (1991) and Ramsden (1992), which provided work pertinent to this school of thought. Gaver (1991) presented a simple model with four different levels or modes of collaboration. The first mode is general awareness. This is the lowest level, representing shared knowledge of who is participating in the project or the community. The second mode is serendipitous communication. This refers to informal and unplanned conversations between two or more people, where sharing of experiences or ideas leads to fruitful progress. Division of labor, the third mode, is used to label any type of practice where a project or a task is deconstructed into a number of sub-assignments, to be completed by an individual or a smaller group of people. The fourth mode, focused collaboration, is the highest level. This identifies activities where people work simultaneously together on the same task. Gaver (1991) argued that most computer based systems designed to

support these processes often neglect the need for the lower levels of awareness, focusing solely on focused collaboration.

Ramsden (1992) argued that the ways in which students interact and work can be related to how and what they learn. Ramsden (1992) presented four such orientations: meaning orientation--the student has a deep-holistic learning approach; reproducing orientation--the student focuses on memorizing concepts; strategic orientation--the student seeks for clues to what will be assessed; non-academic orientation--the student organizes work poorly, and is cynical, frustrated and poorly engaged.

Svensson & Magnusson (2002) identified four types of groups where the preferred mode of work is contrasted with the degree of equality with respect to group members' roles and responsibilities. Group One, the Crew, describes coordination. It bears a resemblance to a formal bureaucracy where assignments are approached using division of labor as the dominating strategy. Group Two is the Team, which focuses on communication. Here one finds differentiated roles related to variations in engagement or level of expertise that are characterized by having a leader or core of leaders which organizes and supervises the group activities, seldom distributing sub assignments to the members, but instead preferring focused face to face collaboration. In Group Three, the Peers, socializing is considered the dominant factor of interaction. This is a democratic structure where all members are equal and nearly all group tasks are done in focused collaboration with small groups of three to five people. High motivation and engagement by all is noted. In Group Four, the Crowd, the focus is tutoring. This describes a situation where a collection of individuals chooses to deconstruct an assignment into parts, each of which is required to be preformed by a group. This is not preferred strategy, as the members are poorly engaged and less committed to the assignment (Svensson & Magnusson, 2002).

A number of practices currently operative in distance education are designed to foster constructive interaction among students. Most of the literature suggests that there is a relationship between positive online dialogue among students and methods utilized to foster interaction. Studies conducted by Murphy, Mahoney, & Harwell (2000), Fahy, Crawford, & Ally (2001), and Pincas (1998) put forth ideas to encourage student interaction.

The next section of Chapter 2, 'Instructional Design/Professor Responsibility/Learning Theories', will explore more extensively at the design of online courses; however, some discussion about design is appropriate here. Previous research, utilizing various methodologies, indicated a significant relationship between well-designed distance education courses and positive student interaction.

The Murphy (2000) study with graduate students at Texas A&M University concentrated on how to enhance the growth of online community through the use of learning contracts, which are formal written agreements about what will be learned and how to measure success. Some of the key findings relate to the responsibilities instructors and students can take before, during, and after an online course has taken place. A table of the key findings is found below:

Table 2.1

Instructor and Student Responsibilities for Effective Online Learning

	Before Semester	During Semester	After Semester
Instructor	-accept concepts about teaching online -accept technology and possible problems -plan and prepare for online learning -group projects: establish the guidelines -create guidelines for a group learning contract -advise students that contracts will be used	-empower students to work within their contract -monitor progress of groups/individuals -facilitate interaction and collaboration -provide mentoring and guidance -address difficulties among group members -continually stress need for communication	-evaluate success of online learning -evaluate success of group projects -re-design group projects as required -refine contract guidelines

Student	-accept technology and possible problems -accept online course will be different from face-to-face -be prepared for open, honest, and fruitful learning -get to know and accept other group members -create a group contract with group goals and objectives -meet deadlines	-follow the terms of the contract -evaluate and revise the contract as needed -evaluate personal progress in meeting group goals -evaluate the group's progress and process	-evaluate group contracts--how would you change -evaluate personal participation in group

(Murphy et al., 2000)

The ideas expressed by the Pincas (1998) and Fahy et al. (2001) studies lead to a broader conceptualization of quality discussion among students in an online environment. These studies used different research methodologies to study student interaction. Fahy et al. (2001) utilized the TAT (Transcript Analysis Tool) to show five types of interaction, while Pincas (1998) studied two groups of students to suggest a way to provide scaffolding for online discussion. One of the key findings of the Pincas (1998) study was that online courses need to be virtually reconstructed in the essence of the old classroom expectation, namely input from a lecturer and interaction among the participants. A key finding from the Fahy et al. (2001) study indicated that this is not taking place. An analysis of student interactions using the TAT indicated over half of students' sentences were direct statements (52%), while the next largest category, reflections, comprised 21%. This suggests that most of the student interaction was directed to simple information transfer rather than reflection activities that require deeper thinking (Fahy et al., 2001).

A British study by Andrews and Schwarz (2002) called attention to the need for students in group assignments to develop group dynamics that create better learning environments. The study clearly pointed out the difference of success between low performing teams, middle

performing teams, and high performing teams. The researchers discovered that low performing teams demonstrated little online interaction, had few bulletin board postings, and had very limited social interaction. On the other hand, high performing teams evinced high levels of organizational learning and knowledge learning. High performing teams (and to some extent middle performing teams) demonstrated operational learning as well; in this phase, teams outlined their procedures for working in teams, allocated tasks and responsibilities, and demonstrated considerable understanding of successful group processes. Bulletin board postings of high performing teams were characterized by a high level of organization, meeting agendas, and attachment drafts. It was also noted that where students knew all members of their teams, they had positive feelings about teams and team relationships. The researchers concluded that it may be critical to promote effective learning behaviors, particularly for low and middle performing teams (Andrews & Schwarz, 2002).

An area that needs to be explored further is the impact of distance education on people from diverse backgrounds. Few researchers have evaluated the differences between men and women to interact willingly in distance education. Two studies (Richardson & Turner, 2000; Stewart, Shields, Monolescu, & Taylor, 1999) provide some preliminary data regarding gender differences in student engagement online. The purpose of the study conducted by Richardson and Turner (2000) was to design a model for evaluating the quality of students' learning experience with virtual learning environments (VLEs). This British study included 292 students and 29 tutors. The Stewart (1999) study utilized questionnaires to study real-time mediated communication, specifically the Internet Relay Chat (IRC).

Although further research needs to be done in the area of gender differences in online learning, these studies contended that women were less likely to enjoy online learning. Results of

the questionnaire showed that, although all of the participants reported IRC as easy to use, men generally liked the experience better, while women observed that people were being ignored. Analysis of the transcripts also revealed that men always sent the most messages in each group, while women always sent the least, and men always began and ended each session. There was also a noticeable difference in the type of language used by men and women, with men more likely to take charge (Stewart et al., 1999). Similarly, the British female students in the Richardson and Turner (2000) study were also less likely to enjoy the online experience. Females responded significantly more negatively toward VLEs (virtual learning environments) than males, and females did not have the same level of IT (instructional technology) proficiency, which may contribute to negative attitudes toward VLEs.

The Richardson and Turner (2000) study provided some insights into key questions considering student involvement with positive learning experiences; the encouragement to learn 'actively'; and individual approaches to working online. Richardson and Turner (2000) called attention to some issues that infringe on more productive student interaction with online courses. They identified that students preferred VLE material to be "'supportive of" instead of a "replacement to" class materials. They also discovered that students preferred 'hard' copies of materials. They found that the students were more "actively" involved on modules which incorporated a range of embedded support devices, and that students felt more positively toward their VLEs where there was adequate or extensive support. Students who used more developed time-management practices had a more positive perception toward VLEs. Students who seemed to have a stronger understanding and motivation toward independent learning also expressed more positive perceptions of using VLEs, and students with a task-orientation had a more positive perception of learning using VLEs (Richardson & Turner, 2000).

More attention is being devoted to the quality of student interaction as it relates to online education. With few exceptions, research shows that students engaged in challenging, meaningful coursework respond positively to this type of online education. Three studies help understand this phenomenon better.

Kashy, Albertelli, Bauer, Kashy, & Thoennessen (2003) compared introductory physics students who interacted with a web site designed by a faculty member to those who interacted with a web site designed by a third party. The results of the study suggested that students looking for easy answers in online education will have problems succeeding. The researchers found that the more that students relied on the easy "plug-and-chug" answers on that web site, the worse they performed on the exams. They also discovered that students using the course sanctioned site performed better; this demonstrated that helping the students find their own solutions to problems seemed to have a positive effect on the learning outcomes, whereas simply giving away the solutions appears to have a negative effect. There is evidence that students who used the third party site more frequently tended to be poorer students, and students who used the course site tended, albeit weakly, to be better students; even after accounting for varying levels of academic ability, students using the third party site performed poorer (Kashy et al., 2003).

Instructional Design

The next section of the literature review will focus more on faculty roles and responsibilities in establishing a tone for web-based classes that leads to greater student success. A study by (Hillesheim, 1998) contributes to a greater understanding of faculty involvement. The Hillesheim (1998) study examined why some faculty were successful in providing high quality online courses to graduate students and why others were not. The study concluded that there were eight strategies that successful faculty employed to create courses that students evaluated as

successful. The strategies are as follows: 1) Understand the roles of all participants; 2) Accept adult students' obligations, and adjust for realistic expectations when establishing objectives for the course; 3) Prepare all materials well in advance of the course; 4) Understand and be comfortable with the hardware and software of the delivery model; 5) Possess a high skill level and be comfortable with word processing; 6) Develop social protocols and rules for delivery of the course and behavior of participants, and include these protocols in the syllabus; 7) Establish pre-class study questions allowing student to prepare for discussion, and include these questions in the syllabus; and 8) over-prepare with multiple topics that can be kept active simultaneously (Hillesheim, 1998).

Assignment guidelines.

A significantly high proportion of the studies in the field are concerned with providing online education participants a clear understanding of course expectations. A number of studies have shown that unambiguous assignment guidelines are especially important in web-based classes where instructors and students are unable to communicate face-to-face. Recent studies reveal characteristics from effective online courses that may assist course designers and instructors to create more efficient curriculum. Instructional design is the systematic development of instructional specifications using learning and instruction theory to ensure the quality of instruction. Instructional design has the ambition to provide a link between learning theories (how humans learn) and the practice of building instructional systems (an arrangement of resources and procedures to promote learning) (Moallem 2001).

Research up to this point has shown that there are techniques that can be used to set up creative online assignments. It is crucial to develop a theme of common interest for all class participants at the beginning of each term. One effective online task is to have students explore a

specific topic, either individually or as a group. Another online activity that successfully engages students in the learning process is to have them answer broad questions that require extensive thought. Similarly, instructors may want to have students solve difficult real-world problems via asynchronous discussion groups. In addition, faculty may want to consider creating authentic course projects where students must work both online and offline to unearth solutions to difficult problems. Finally, instructors can assign activities where all participants work together to construct a text which is initiated by the instructor or other class participants. (Campos, Laferriere, & Harasim 2001; Fredericksen, Pelz, & Swan, 2000).

Attention should be directed toward the creation of clear assignment guidelines during the design phase of course creation. A number of practices currently operative in assignment guidelines are designed to improve clarity of expectations. A review of the literature suggests that faculty need to review course content to consider how they want to teach and see if chunks naturally emerge. Pertinent to effective assignment structure is to have faculty list the learning activities that they envision for each of their modules. Next, they must identify whether they foresee students working through the learning activities in a specific order. Finally, if a pattern of activities emerge which makes sense, then sequencing activities and providing consistent guidelines become very important (Campos et al., 2001; Fredericksen et al., 2000).

In their discussion of online learning, Campos et al. (2001) noted a variety of ways that web-based programs of study can be organized to provide guidance to students. This study considered the methods of grouping collaborative teaching practices that were influenced by work done by individual students and those working collectively, f2f (face-to-face) and online activities/tasks. and the educators' online experience with the goals, activities, and tasks that drove the organization of the course outline, educators' roles, and rules of participation. These

different methods of organizing course material, with pedagogical considerations factored in, can provide online educators an assortment of organization tools for course modules.

One way of organizing a course is to use stand-alone activities for specific networked assignments such as online reading and knowledge sharing; group production of virtual objects; Internet search; and collective multimedia projects. The collaborative learning projects provide another way to organize modules based on collective or group projects using multimedia software, activities, and tasks evolved in and through online discussions. Another option is the use of simulation activities which offer learning activities based on reality simulation exercises that aim to prepare students to solve real problem situations. In addition, theme development, text structuring and case studies provide organization around themes, text production and discussion, readings, and other written activities. Some instructors published and provided links to other class materials. Similarly, network-enhanced seminar designers organized course work around thematic seminars that can take place in the online classes. Finally, networked-enhanced teaching practicum are organized around clinical experiences, in which modules have been established for use by student teachers to support discussions related to learning needs and the professional and practicum problems they encountered (Campos et al., 2001).

Research investigating effective assignment guidelines has revealed steps that designers and/or instructors can take to better evaluate web-based curriculum. Initially, it is a good idea to review the list of learning activities that have been created and to take a moment to think about how they plan to assess or evaluate student work, performance, or learning for each activity. Course designers can then look at the evaluation document they created in their syllabus and orientation area to consider if they have assigned appropriate values to the types of activities in their course. Crucial to effective assignment guidelines are considerations for the evaluation of

discussion and a review of the workload required by students and instructors. An outside reviewer, such as a colleague or expert in the field, and/or an instructional designer, can provide feedback about assignment procedures. Moreover, designers should strive to keep the class moving by making sure that there is something new online for the students at least every two to three days. Instructors should keep notes about effective and ineffective teaching modules in anticipation of the evaluation and revision stage (Campos et al., 2001; Fredericksen et al., 2000).

More attention is being devoted to the process of designing and developing web-based courses using instructional design principles and models. Instructional design models are guidelines or sets of strategies based on learning theories and best practice. Moallem (2001) identifies two commonly used instructional design models and principles: 1) objectivist, traditional instructional design models and 2) constructivist models. Moallem (2001) determined that constructivist models were found to be appropriate for designing and developing course assignments where students had more advanced knowledge of the content and the learning outcomes were primarily problem solving and applications of multiple principles. Objectivist, traditional design models, on the other hand, were found to be appropriate for designing and developing coursework where students had very little directly transferable prior knowledge and the learning outcomes were focused on learning new concepts and principles. Accordingly, over three-quarters of the students in one study ranked the instructor's elaborate lecture notes as the most helpful component of the course in helping them understand the content, while almost two-thirds ranked individual assignments as the most important characteristics of the lessons (Moallem, 2001).

Smith and Hardaker (2000) advanced the notion of utilizing instructional design theory to enhance knowledge about student utilization of, and feedback on, electronic modes of delivering

online curriculum. This study benchmarked theoretical perspectives against the learning based software that provided the insights into learning theory in web-based education. As a result, the behaviorist/empiricist model reflects systems/software components that put emphasis on direct, skills-based, teaching and test based assessment. On the other hand, the cognitive/rationalist model focuses emphasis on authoring and interactive tools. Finally, the situative/pragmatist model adopts more of an emphasis on both flexibility and integration throughout the system in the definition of roles and responsibilities (Smith & Hardaker, 2000).

Online roles of educators and students.

The roles of educator and student take on new meaning when online education is concerned. Interest has been generated in the evolving nature of online education is general and the role of individuals specifically. Theoretical speculations about these roles have begun to emerge in the literature.

There is a growing body of evidence that shows the complexity of roles in online education. The questions arise around the different roles of each participant, such as student to student and instructor to student. The roles may also vary according to the type of activity required, such as individual or group projects. The literature is replete with references to a variety of individual activities created for students in the online learning environment. A listing of these activities includes: network-enhanced lectures; theme development, text structuring, and case studies; stand-alone specific activities; network-enhanced teaching practice; network-enhanced seminars; and simulation activities (Campos et al., 2001).

More attention is being devoted to the role of collaborative activities in web-based courses. Examples of collaborative activities include collaborative learning projects and discussion groups. Discussion groups are particularly ubiquitous in the online learning

environment. In reviewing the literature, the role discussion groups play in online education has received a lot of attention. Researchers have raised questions about the levels of collaboration in group discussions. A study by Campos et al. (2001) advances the notion of levels of collaboration as vague, modest, and strong. The study classified vague collaboration as being in a group but not necessarily participating in a given activity or task. Collaboration in modest levels can be associated closely with cooperation, or acting together, while strong collaboration denotes a relationship that exhibits clearly displays acting together (Campos et. al. 2001).

Another aspect of asynchronous discussion group is the time that students have to develop responses that accurately reflect their views. The nature of asynchronous discussion allows students to reflect on points made by others, and to appreciate the power of the written word to reflect and review (Hew & Cheung, 2002; Tiene, 2000). A number of studies have shown that discussion group participants enjoy the convenience of online discussion and the opportunity to interact with other students (Hew & Cheung, 2002; Fredericksen et al., 2000).

Conversely, problems with asynchronous online discussion can hinder students fully participating in this important component of web-based learning. Recent studies reveal a number of problems with asynchronous discussion, such as procrastination, disorientation, commenting just for the sake of commenting, rules of participation, appropriateness of replies, technical difficulties and lack of visual cues (Campos et al., 2001; Hew & Cheung, 2002; Fredericksen et al., 2000; Tiene, 2000). Several studies point out potential solutions to the aforementioned problems. Regarding the problem of procrastination, research suggests that structuring rules of participation at the start is helpful in reducing procrastination. The establishment of specific response deadlines and a suggested daily or weekly schedule to check updates in the groups should help reduce the problem (Hew & Cheung, 2002; Fredericksen et al., 2000). Students can

become confused in discussion groups when they lose track of the thread of the discussion or when they become confused over the intended message of others in the group. A solution for this may be that all discussion participants include a short segment of the message to which they are responding. The use of emoticons and other pictorial representations are helpful in accurately conveying the sentiments of participants in discussion groups (Hew & Cheung, 2002).

As stated previously, many web-based courses require students to participate in discussion groups as a portion of their class grade. A problem arises when students become prone to mimicking the previous replies or commenting just for the sake of commenting. It is incumbent on the course instructor to push students to think outside the box; one solution presented is to have participants adopt different thinking roles in their discussions (Hew & Cheung, 2002; Campos et al., 2001). It is important to consider student participation in discussion groups since studies have shown that students who reported the highest level of interaction with classmates also reported the highest level of perceived learning, and students who participated minimally in discussion forums were intimidated by the thought that their responses were not intelligent enough (Fredericksen et al., 2000; Moallem, 2001).

Attitudes and intentions of students in online courses.

A recurrent theme in the literature is the role student attitudes and motivation plays in online education. A number of recent studies have shown the importance of student attitudes and motivations in web-based courses. Central to the study of attitudes and motivations of students is their outlook on utilizing technology in the virtual learning environment.

Fredericksen et al. (2000) executed a study on more than one thousand online students. This study advanced the notion of student attitude and motivation for learning in web-based coursework. Most noticeably, the researchers learned that online students rarely work ahead of

the pace set by the instructors. Moreover, students who reported that they participated in their online classes at higher levels than in the regular classroom also reported the highest levels of perceived learning. Students who reported that they were taking courses because they were not offered on campus reported significantly lower levels of learning than students who were taking courses because of family responsibilities or because of a conflict with their personal schedule. Equally important, women reported higher levels of perceived learning that did men. The youngest students (16-25 year-olds) reported that they learned the least and that they were the least satisfied with online learning, while students in the 36-45 year-old age range reported that they learned the most and were the most satisfied with online learning (Fredericksen et al., 2000).

There is a growing body of evidence that shows students' attitudes and perceptions of technology affected their capacity to learn new information and their ability to use new knowledge effectively. A helpful theoretical structure for analyzing online scholarship is Marzano and Pickering's (1997) Dimensions of Learning Framework. The theoretical structure developed by these two researchers, referred to as the five dimensions of learning, includes attitudes and perceptions; the ability to acquire and integrate knowledge; extension and refinement of knowledge; the ability to use knowledge meaningfully; and habits of the mind. Another example is the Learning Orientations paradigm (Martinez, 2001), which is a whole-person learning model used to investigate learning in adaptive environments. Guidelines for developing the adaptive environments recognize a dominant influence of emotions, intentions, and social factors on how individuals learn differently. The four learning orientations are transforming, performing, conforming, and resistant. Each profile provides three specific scales

for measuring key learner-difference attributes: aspects of emotions and intentions, strategic planning and committed learning effort, and learning autonomy (Martinez, 2001).

Studies conducted by Daley, Watkins, Williams, Courtenay, Davis, & Dymock (2001) and Martinez (2001) substantiated that the way students think about technology impacts their approach to web-based learning. First, the importance of the students' attitudes and perceptions of the technology is paramount. Second, instructors in online environments need to pay careful attention to the structure of the learning tasks. Next, supporting individualized learning with a whole-person theoretical foundation is an important consideration for a more complex solution to student dissatisfaction with online learning. It particularly highlights the importance for online learners who need to become more self-directed, self-motivated, and self-assessed. Finally, new instructional design and learning models should identify the special primary and secondary relationships between a more comprehensive set of psychological factors (affective, social, and cognitive factors). They should also explain influences on the critical performance and achievement attributes that lead to more successful learning, support differences in how people want and intend to learn, and introduce new strategies that lead to improved online learning (Daley et al., 2001).

A study by Valenta et al. (2001) advanced the notion that students' attitude toward technology has an impact on their acceptance or resistance to learning in the online environment. An analysis of published literature and of websites indicated both positive and negative aspects of the application of technology to DE. According to the study, the positive aspects of web-based education were flexibility and convenience; access/interaction with instructor; better performance (student felt they would get better grades than f2f); collaborative learning environment; and positive learning environment. In contrast, the negative aspects of online

education were identified as limitations on interactivity; technology problems; increased workload; lack of logistical support; and costs. This research attempted to discover how an educational program might fine-tune its online delivery for maximum suitability and acceptability to the broadest group of learners in post-secondary education. The findings suggest ways educational stakeholders can improve online education.

Table 2.2

Student Opinions About Factors of Importance in Online Learning

	Factor 1: time and structure in learning	Factor 2: social interaction in learning	Factor 3: convenience in learning
Important	provides flexible time management; requires active learning/initiative; can work at home; requires self-discipline; learn at own pace	fewer subtleties in teaching input; less participant discussion; can work at home; less enrichment from others; interference with work	can work at home; saves travel time; potential interference with work; provides flexible time management; saves commuting cost
Neutral	less enrichment of others; less informal learning from others; less participant discussion; no set class time; saves commuting costs	requires active learning/initiative; learn at own pace; no set class time; less assessment vis-à-vis others; hard to find quiet time	fewer subtleties in teaching input; less participant discussion; few opportunities to socialize; requires active learning/initiatives; computer time at home is limited
Unimportant	hard to find quiet time; computer time at home is limited; unreliable home access to Internet; must pay home phone line costs	requires self-discipline; unreliable home access to Internet; must pay home phone line costs; you'll sure learn the Internet; can work in bathrobe	less assessment vis-à-vis others; access to Internet at work only; must pay home phone line costs; requires computer troubleshooting; you'll sure learn the Internet

(Valenta et al., 2001)

Different levels of learners.

Most writers have ignored the impact student learning preferences play in the online learning environment. Despite the paucity of literature on this topic, some findings suggest ways to design online learning environments using student learning preferences. The ability of

educators to design web-based courses that offer the vast majority of students an opportunity to succeed is imperative to reduce student withdrawal from online classes. It appears that a key aspect is to ensure a flexible online classroom environment that is pre-designed with a consistent course module structure containing clear explanations that can accommodate the interests of students and the spontaneity of educators (Fredericksen et al., 2000). Another study (Moallem, 2001) offered a basic method of incorporating learning preferences into the online learning environment. At the beginning of each term, students were asked to post a brief autobiographical sketch with pictures into the discussion portion of the website. Students were then instructed to access links to site about learning styles, thinking styles, and study skills which individual students then add to their autobiographical sketch (Moallem, 2001).

Another step that course designers may consider is designing segments of online classes that correspond to various learning preferences. Initial findings suggest that self-motivated, self-directed learners tend to rank activities such as textbook, information resources, and forum discussions as high while, students who indicate they learn better by doing and discussing rank collaborative team activities and focused team assignments highest (Moallem, 2001; Martinez, 2001). The ideas expressed by Martinez (2001) led to a broader conceptualization of learning preferences in web-based education. This study identified three types of online learners. First, transforming learners prefer loosely structured, mentoring relationships that promote challenging goals, discovery, and self-managed learning. Next, performing learners prefer semi-complex, semi-structured, coaching relationships that stimulate personal values and provide creative interaction (hands-on) design environments that are project- or task-oriented. These energizing, competitive environments use coaching, practice, and feedback to encourage self-motivation and self-monitoring progress while minimizing the need for extra effort. Finally, conforming learners

prefer structured, guiding relationships that help them avoid mistakes and achieve easy learning goals in a simple fashion (Martinez, 2001).

Orientation to distance education.

There has been little investigation about the importance of orientation in online education. Since a significant portion of students enroll in online courses with little or no background in this method of education delivery, the scarcity of research into the effect of orientation on student retention seems surprising. A recent comprehensive study by the State of New York (Fredericksen et al. 2000) regarding online education provides some insights into effective orientation criteria.

The New York state study pointed out keys documents that should be included in a good online orientation that establishes boundaries for the course. The study identified nine orientation documents that provide students with the 'walls' to their online classroom. These documents are as follows:1) welcome; 2) contact information; 3) course overview and objectives; 4) readings and materials; 5) course learning activities; 6) how you will be evaluated; 7) faculty expectations; 8) course schedules; and 9) next steps. Further recommendations were made in this study regarding the activities of the first week, pertinent to online student retention. The first week recommendations included a non-graded ice-breaking activity; a self-test as a check on orientation and syllabus documents, a prepared welcome e-mail message, and an introductory letter outlining the first reading assignments (Fredericksen et al., 2000).

Graphic layout.

A recurrent theme in the literature is that well-designed web-based course components enhance the educational experience for all involved. Accumulating research indicates that graphic layout and design play a significant role in student satisfaction or dissatisfaction with an

online course. Recent studies (Levi & Conrad, 2000; Nielson, 1993; Ebersole, 1997; Fredericksen et al., 2000) revealed that graphic layout plays a role in students' decisions to remain in or withdraw from the online environment.

Within the context of graphic design, development of software that improves the learning experience for both instructors and students has received attention. Software usability is not a new concept. It is usually referred to as the degree to which computer software assists a user in completing a task (Levi & Conrad, 2000). The concept of usability encompasses such attributes as learnability, efficiency, memorability, handling of user errors, and user satisfaction (Nielson, 1993).

Crucial to web-based courses in higher education is the design phase of class development. Applicable to effective web-based course design is the concept of cognitive distance. Cognitive distance is defined by the cost to the user: how long will it take, how many links, and how much cognitive energy will be expended in the process of getting to the destination. An optimal response time is one that is perceived to be instantaneous, but one that is actually slow enough to provide a clue to the fact that the frame has changed; according to Nielsen (1990), an optimal duration is about a half second. When the delay is more than a few seconds, an indication of progress and estimated time for completion of the process is important; for delays longer than ten seconds, a 'percentage done' or 'time-remaining' countdown clock is advised (Nielsen, 1993, p. 136; Ebersole, 1997).

Several researchers have noted practices that produce positive visual on-screen experiences for learners in the web-based learning environment. The literature is replete with references to developing graphic material that provides a comprehensive look for online participants. This comprehensive look should assume that students know nothing about the

online environment, and anticipate student questions in the design (Ebersole, 1997; Fredericksen et al., 2000).

There is also documentation that course designers can enhance the coherence of the online experience by designing material that provide clues as to where the user will go. One device designers can employ is to provide clues as to where a link will take a user. Some authors propose making links only at the end of text blocks or sidebars. This limits the readers' choices before they have fully engaged the present material. These studies indicate that it is also best to identify links that will take the user 'off-site' to differentiate them from internal links that simply take the user to another place in the current document or site **(**Ebersole, 1997; Fredericksen et al., 2000; Janicki & Liegle, 2001; Storey, Phillips, Maczewski, & Wang, 2002).

The largest proportion of the studies support the premise that, for effective learning to take place, online course designers must minimize the distractions of disorientation and unfamiliarity by creating materials that do not hinder or frustrate the user. This is also known as transparency. A number of techniques can be utilized to facilitate easy navigation. Research has noted that navigation tools, such as guided tours, maps, trails, backtrack functions, bookmarks, overview diagrams, queries, and fisheye views, effectively help learners quickly locate online course information. Another technique to avoid needless distractions is to provide a consistent color scheme throughout course materials (Ebersole, 1997; Janicki & Liegle, 2001).

Another aspect of graphic design in online course curriculum that researchers have identified is to maximize the effectiveness of navigational instructions. This goal to provide consistency in design can be achieved by using the same font on all material that can be found on the same location of pages, and by using identical wording for all instructions. Equally important are instructional cues that are redundant and consistent, with detailed explanations and document

titles. They provide learners the best opportunity to transparency in web-based classes. Furthermore, a number of studies have shown that furnishing a detailed orientation for each course module and specific instructions for each learning activity provides course structure that reduces disorientation for students (Fredericksen et al., 2000; Janicki & Liegle, 2001; Storey et al., 2002).

The researchers revealed other practices that create effective graphics that reduce disorientation for online learners. It is helpful to break up long documents so they do not exceed four to five screens for scrolling. Additionally, it is advisable to create web-based literature in outline format with headings and subheadings that emphasize hierarchy of importance. Similarly, online information that reduces confusion places the most important information at the beginning of a document and uses short descriptive titles for document subjects and module names. Further, course designers need to minimize the number of hypertext links per page so class participants will not become frustrated, especially early in the academic term (Fredericksen et al., 2000; Janicki & Liegle, 2001; Storey et al., 2002).

A number of practices currently operative in instructional concepts are designed to have positive influences on learning in web-based environments. First, course designers should define the learning objective of all course modules. Second, it is desirable to list pre-requisite knowledge or skills that are necessary for students to be successful in a particular online class. Additionally, designers should consider multiple exercises within course modules that allow students the option to demonstrate knowledge in a variety of styles. Equally important, effective instructional design permits the learner to control the pace and direction of learning. Finally, good design practices for web-based curriculum considers provisions for testing and prompt feedback (Janicki & Liegle, 2001; Storey et al., 2002).

Studies have investigated other effective instructional content design practices. Whenever possible, designers should provide examples to students of high quality work. With respect to useful content, designers might consider modules that require students to solve real-life, hands-on problems that force them to provide results-oriented, deliverable outcomes (Janicki & Liegle, 2001; Storey et al., 2002).

Comfort with technology.

An area that needs to be explored further is the role of student comfort with the technology found in web-based education. Research up to this point has revealed various viewpoints on the topic. A recent study by Miller, Rainer, & Corley (2003) provided insights into the role students' ability to function in the online learning environment plays in their willingness to adapt to this type of learning (Miller et al., 2003).

The Miller (2003) study examined the effect of student comfort with technology and their willingness to complete coursework in web-based education. As stated previously, online education provides new learning options for potential students; however, problems associated with this method of delivering education include poor attendance, procrastination, feelings of isolation, and a general lack of structure in the course. These problems can dissuade even motivated students from completing assignments in web-based education. Previous research findings show that students may withdraw from online classes unless they develop better time management skills. In the case of web-based learning, students are confronted not only with learning new material, but they may also need to master the computer skills necessary to complete the course.

The work of Miller (2003) is based on the earlier research of two primary research streams that explored the use and non-use of computer technology: the technology acceptance

model (TAM) (Davis, Bagozzi, & Warshaw, 1989), and various renditions of the computer self-efficacy (CSE) constructs (Compeau & Higgins, 1995; Gist, Schwoerer, & Rosen, 1989; and Murphy, Coover, & Owen, 1989). The purpose of this study was to explore the constructs of the TAM and CSE as they relate to the use of computers in the delivery of online learning. The TAM suggested that one of the reasons that a person enrolls in a computer-based online course is that he or she perceives that the computer to be both easy to use and useful. Computer self-efficacy is defined as the judgment of one's capability to use an information technology (Agarwal, Sambamurthy, & Stair, 2000; Compeau & Higgins, 1995; Gist et al., 1989). The effort to garner insight into these factors can help course designers and educators develop and implement more effective online learning programs.

The models employed by Miller et al. (2003) used multiple constructs to predict and explain behavior. The models in this study measured the following attitudinal factors: Usefulness, Ease of Use, Subjective Norm, and Perceived Behavioral Control. The researchers hypothesized that these factors should have a positive relationship with the individual's behavior in an online course. The behavior of interest in this research was whether or not an individual participated and engaged in an online course. The individual's behavior in the online course was dependant on the amount of time he or she spent working on the course modules. The study supported two of the five propositions that Miller offered; if a student perceived the delivery mechanism (computer) to be easy to use and useful, they were more likely to become engaged in the course as measured by time spent in the online modules (Miller et al., 2003).

Within the context of student comfort with technology, Frederickesen et al. (2000) point out the importance of providing students with assistance to problems encountered online. Specifically, the study focused on students who came across technical issues when trying to

access assignments. Students who reported the highest levels of satisfaction with the help desk also reported significantly higher levels of learning than students who rated their satisfaction with the help desk as lower. In addition, students who reported that technical difficulties impeded their learning reported significantly less learning over all than students who did not report technical difficulties (Fredericksen et al., 2000).

Very few case studies have been conducted to identify potential usability issues with web-based learning tools. One notable exemption is an examination of WebCT from a student's perspective using questionnaires (Morss and Fleming, 1998). In general, the researchers found that the use of WebCT did not place undue burdens on the students in terms of learning to use the tool. There were, however, a significant number of students who found the tool difficult to use (Storey et al., 2002).

Professor Responsibility

A recurrent theme in the literature is the role that instructors play in the online learning environment. The literature explains that faculty can help shape web-based courses to be positive or negative experiences for class participants. There is a growing interest in the function that faculty play on online classes, and how they can play their role more effectively. The challenges faced by faculty teaching online courses can be daunting. The time required to teach effectively online may take as much as three times more than conventional teaching (Tolley, 2000).

Clearly, instructors must provide information and make an effort to prepare for class in a similar manner as they would for face-to-face classes. An instructor must create a syllabus that outlines expectations and assignment deadlines. Furthermore, it is incumbent on faculty to elaborate clearly on these expectations during the initial online class session. One novel idea suggested that faculty should videotape the initial class meeting to allow late arrivals the chance

to learn about the course (Cooper, 2000). This section of the literature review will highlight the subtle yet valuable approaches instructors can take to make web-based education more effective, which may help reduce student drop out rates.

Most researchers on the subject of online education mention the importance of asynchronous discussion forums in these courses (Beaudin, 1999; Klemm, 1998; Muirhead, 2001; Zafeiriou, Nunes, & Ford, 2001; Graham, Cagiltay, Byung-Ro, Craner, & Duffy, 2000). Unlike many face-to-face classes, students are often required to participate in discussion sessions and, almost without exception, these discussion sessions constitute a portion of a student's grade in the class. Thus, recent studies reveal measures that can improve asynchronous web-based discussion groups.

Several researchers have noted the importance of asynchronous online discussion that provides meaningful learning opportunities. Instructors play a crucial role in the development of good discussion sessions. In this respect, it is important for instructors to carefully design questions that elicit on-topic discussion (Beaudin, 1999; Klemm, 1998; Muirhead, 2001; Zafeiriou et al., 2001). In addition, it is helpful for instructors of online classes to provide guidelines for students to prepare on-topic responses (Beaudin, 1999; Cooper, 2000; Graham et al., 2000; Klemm, 1998; Muirhead, 2001). Moreover, instructors can simply reword the original question when responses are going in the wrong direction (Beaudin, 1999; Klemm, 1998; Muirhead, 2001). Additionally, instructors can provide discussion summary on a regular basis (Beaudin, 1999; Cooper 2000).

A substantial body of research reveals that instructors of web-based classes can take additional steps to create discussion sessions that benefit all course participants. Especially in the online environment, it is important for instructors to maintain consistency in communicating

with students. Instructors should set up ‘office hours’ online so students know when they can expect to get answers. Other aspects of instructors’ providing timely communication would include checking e-mails frequently and providing updates on class activities. Moreover, faculty can take advantage of the technology at their disposal and spot check to see if students are completing online assignments (Cooper, 2000; Muirhead, 2001).

As mentioned earlier, faculty almost always require students to participate in online discussion groups. Typically, a web-based class assigns 10-25% of the overall grade to discussion responses by students. Earlier research findings show that students generally are instructed to respond two to three times each week for each topic (Cooper, 2000; Muirhead, 2001; Zafeiriou et al., 2001). The aforementioned principles in effective online communication are basic for successful discourse between all online course members. However, the literature reveals a diversity of opinions on steps that can be taken by faculty to improve online communication.

Within the context of web-based courses in higher education, the degree of instructor responsibility for high quality learning environment has been rife for research. Fundamentally, instructors must provide basic measures, such as a clear syllabus and timely communicate, in order for online classes to function. However, a growing amount of research suggested that other measures can be taken to create an inviting learning environment. Specifically, instructors can create instructional materials which appeal to a diverse student population and which appeal to each student’s life experiences and ambitions (Cooper, 2000; Klemm, 1998).

Research up to this point has shown that online instructors can promote group assignments that foster a better learning environment. Collaborative learning can provide an opportunity for students to display their talents to others in web-based education. Of relevance

here is the research of faculty practices that develop more meaningful learning options for students in group functions. Some researchers argued that instructors that frequently use students' names during group assignments show everyone that an affirming, respectful atmosphere is present (Klemm, 1998; Muirhead, 2001). The study by Zafeiriou et al. (2001) advanced the notion of group work in online education by suggesting that four to six learners comprise the ideal group size.

Reports from several studies pointed out that faculty play a crucial role in overseeing online group assignments by providing meaningful learning options. Innovative instructors will utilize peer grading, which indicates that everyone's contribution is important in web-based group work. It is crucial for faculty to monitor an environment where participation by all students is not only required, but also valued. Several researchers have noted that students respond favorably to constructive feedback from faculty that is both timely and on point to the question posed. These studies indicated that monitoring student work promotes self-regulation and individual responsibility (Klemm, 1998; Muirhead, 2001; Zafeiriou et al., 2001).

As stated previously, online instructors have indicated that teaching web-based classes often take significantly more time than comparable classroom courses. Attention should be directed toward faculty development with effective strategies and techniques in the online learning environment. The ability of faculty to function well in this environment can prove beneficial in reducing student dropout rates. Universities need to provide instructors the options to improve their technical skills and share best practices with others. Faculty that are proficient in online technology can better address technical problems that students often encounter at the beginning of an academic term. Impetus for universities to train online faculty is to assist them in developing course management strategies that maintain quality instruction while reducing time

in course responsibilities thus lessening burn-out (Cooper, 2000; Graham et al., 2000; Zafeiriou et al., 2001).

The literature reveals a diversity of opinions on other strategies instructors can employ to make the online educational experience more beneficial to students. One study suggested that faculty should require a final exam worth a high percentage of the grade to ensure student honesty (Cooper, 2000). The notion of requiring a deliverable or hand-in assignment is reinforced by Klemm (1998). This study supported the constructivist theory of learning that states students learn best when they have to integrate, synthesize, and apply information by creating a piece of work. Additionally, instructors can feign ignorance about a topic to request information or encourage an individual student to pursue a line of inquiry on a topic of their interest (Tolley, 2000). Moreover, the study by Zafeiriou et al. (2001) stated that instructors play a role in designing simple authentic tasks set in a real-life contexts.

It is only recently that researchers have begun to examine systematically the effect of interactivity or social presence plays in web-based courses. Pertinent to the literature review for this study is the role social presence plays in student dropout. Recent studies reveal that individual success or failure in a course depended on the extent to which students were able to cross the threshold from feeling like outsiders to feeling like insiders. Faculty play a crucial role in this phenomenon.

The study by Richardson and Swan (2003) advanced the notion that student success in online education can be influenced by feeling that they have a relationship with other course participants, and relates the idea of social presence in online learning environments to students' perceptions of learning satisfaction with the instructor. The researchers found a relationship between students' perceived social presence and students' perceived learning. They also noted

that the amount and/or intensity of social presence that students' perceived in their online courses, from both their instructor and/or peers, was directly related to their perceived learning. Finally, significant correlations were demonstrated between social presence and perceived learning for different activities; about one-third of students indicated that written assignments were beneficial while one-quarter felt that way about class discussion and question/answer sessions (Richardson & Swan, 2003).

Another writer who explored social presence in online education found similar results as Richardson and Swan (2003). A study by Wegerif (1998) put forth recommendations that allow students to feel a sense of community in web-based classes. This sense of community establishes the student as an insider, which creates a learning environment that may lower the drop out rate. These recommendations include overcoming differential access, overcoming conflicts of discourse, scaffolding, providing teaching opportunities, and allowing time for reflection at the end of the course.

Wegerif (1998) stated that over coming differential access could be achieved by having the instructor promote the need for computer accessibility in the home, or by having all the students start the online course at the same time. By using carefully structured exercises, an instructor can overcome the conflicts of discourse and have the students feel that they are all on the same page. To help the students learn new skills, Wegerif recommends staging exercises to move from more structured activities to more open. This process is known as 'scaffolding', whereby learners are introduced gradually to complex new skills through the activity of instructors who coach simplified versions initially and then increase the degrees of freedom. Another way to improve the sense of belonging to a community is to provide teaching opportunities for the students. This allows the students opportunities to lead group learning

experiences and to cross the threshold from newcomer status to that of old-timer status, which requires that, to some extent, students to take control of the online learning experience and structure it for themselves. Finally, allowing time for reflection at the end of the course enhances the students' feeling of belonging to the learning community and having some control in the process of improving the course. The instructor could facilitate a discussion of what had been learned and how it had been learned (Wegerif, 1998).

Learning Theories and Concepts

In Chapter One, some distance education learning concepts were introduced. Among the concepts highlighted were Chickering's Seven Principles for Good Practice in Undergraduate Education. In 1991, Chickering and Gamson adapted these principles for the online learning environment. Many researchers have utilized these principles to help guide their research as well as to help them design effective online courses. Chickering also co-authored a chapter in a book forecasting what personal traits the ideal college will foster for students in the 21st century (Chickering & Kytle, 1999). Chickering and Kytle borrowed concepts from Peter Ewell to help them define their points. According to Chickering and Kytle, Peter Ewell synthesizes research from educational psychology and other fields of study to develop 'eight insights'. These eight insights are listed as follows: 1) the learner is not a 'receptacle' of knowledge but rather creates his or her learning actively and uniquely; 2) learning is about 'meaning making' for an individual learner by establishing and reworking patterns, relationships, and connections; 3) every student can learn--and does learn all the time--with us or despite of us; 4) direct individual experiences decisively shape individual understandings; 5) learning occurs when the learner is 'ready' to learn; 6) learning occurs best in the context of a compelling 'presenting problem'; 7) the results of learning atrophy if they are not exercised, while frequent feedback multiples the already-

strong learning effects of practice; 8) learning occurs best in a cultural and interpersonal context that supplies a great deal of enjoyable interaction and considerable levels of individual personal support (Chickering & Kytle, 1999).

Researchers have raised questions about the content of online education. A study at an Israeli university with graduate students put forth ideas on the style online education should take. The study was conducted with students (n=115) from six courses. The purpose of the study was to show how emergent-collaborative activities supported online learning better than structured collaborative tasks. Themes evolved during the study are as follows: social interaction; critical group reading; student- or teacher-moderated issue discussion; peer evaluation and review; collaborative construction of knowledge bases; and projects online presentations (Nachmais, Mioduser, Avigail, & Ram, 2000). This study clearly viewed emergent-collaboration, rather than structured collaborative tasks, as the best manner to present instruction online. In essence, structured collaborative tasks are well-planned tasks that offer clear expectation. Conversely, emergent-collaborative tasks have goals and constraints, but are less defined and allow for patterns to emergence during the course of learning.

The findings of the study supported the notion that emergent-collaboration methods of instruction are worthwhile to incorporate into web-supported instruction. Students who met via topics and discussion themes were motivated to meet each other. Reading performance increased as reading-support tasks evolved. A student was recognized as a full participant in the course when a topic started by the student generated transactions among peers. Significantly, the two most intensive modes of interaction were the student-moderated issue discussion and the collaborative construction of database. In addition, students noted that the serving as a moderator in a student-moderated discussion group was extremely meaningful (Nachmais et al., 2000).

There has been little investigation of the role emotions play in online instruction. One article by Kort and Reilly (2002) offers a unique model about the interplay of emotions upon learning that recognizes the learner's affective state. The authors proposed a Four Quadrant model whereby students work through a circular flow of emotions from the first to last quadrant. A description of the model shows students becoming more comfortable with online learning as they work through the stages. In quadrant one, anticipation and expectations are high as the learner builds ideas and concepts and tries them out. Eventually, there are emotional decays noted over time either from boredom or from disappointment. In quadrant two, the rate of construction of working knowledge diminishes and negative emotions emerge as progress wanes. As the negative affect runs its course in quadrant three, the learner discards misconceptions and ideas that did not work as expected. Finally, in quadrant four, the learner recovers hopefulness and a positive attitude as the knowledge set is now cleared of unworkable and unproductive concepts, and the cycle begin anew (Kort & Reilly, 2002).

Pertinent to the discussion of learning concepts in online education are the paradigms of cognitive processing and cognitive constructivist views of developing web-based courses. The cognitive processing approach stresses the presentation of course content in structures material in a hierarchical fashion, obtainment of student feedback to ensure understanding, chances for students to question instructors to ensure understanding, and the creation of communication between students to share understanding of material. On the other hand, the cognitive constructivist school of thought has goals for online instruction which include presenting a problem-solving situation in a realistic context, providing learners the opportunity to work in collaboration to construct knowledge around discussion, providing a chance for learners to revise

thinking based on new knowledge, and offering opportunities for instructor to coach and facilitate new student knowledge (Miller & Miller, 1999).

In summary, a review of the literature revealed themes which are important for retaining students in the online learning environment. The role instructors play in distance education courses is an essential factor in student retention. The literature indicates that faculty who take on the role of a facilitator are likely to garner respect from students. Individual students also play a role in the effort to reduce student dropout rates in online education. The documents examined for this study indicate that student attitudes toward online education play a role in overcoming potential obstacles encountered by course participants. Moreover, a considerable portion of students bring expectations about online education that is not accurate and, this inaccurate view of distance education can create frustration in some students. The literature also points out that students want an online class experience that creates a sense of belonging to a community of learners. It is important to establish a sense of belonging for each student early in the academic term.

The design of course materials in the online environment is very important according to a preponderance of the literature. The content of distance education should be consistent throughout course in terms of design. The course modules should use the same format style to reduce confusion for students. The material found in web-based courses need to be accessed easily by students or some students will become annoyed with the course and more likely to withdraw.

CHAPTER 3

RESEARCH METHODS

The questions to be answered by this research project are as follows. First, why do students withdraw from online courses? Specifically, what are the instructional reasons that students report for withdrawing from online courses? Second, what are the instructional and course-related strategies that may encourage students to remain in online courses?

These questions were addressed by examining the differences and similarities between student completers and student withdrawers as measured by a course evaluation instrument, and by exploring the differences and similarities between completers and withdrawers in their perspectives of the online experience. Findings from this study may be useful for the revision of online courses and programs of faculty development.

This dissertation was done in collaboration with the Advanced Learning Technologies (ALT), which operates under the Board of Regents of the University System of Georgia. The mission of ALT is to "lead the USG and its institutions in strategic and innovative uses of technologies as an integral part of the academic enterprise to expand access, enhance learning, enrich opportunities…" (http://alt.usg.edu). In this capacity, ALT personnel have been given the responsibility of developing online courses under the auspices the University System of Georgia. These online courses, known as eCore™, are intended to allow students to complete general education courses via the web. According to the ALT website, "the eCore™ Project focuses upon the development of an electronically delivered core curriculum for the University System of Georgia. The eCore™ is comprised of courses leading to the completion of the first two years

of an undergraduate degree. These courses are offered by University System of Georgia institutions" (http://alt.usg.edu/projects/ecore/whatisecore.html).

The ALT staff have been the linchpin in a collaborative effort with experts throughout Georgia including technology instructional design specialists, university system faculty, and other administrators to design and deliver high quality online courses. As the key player in the development and delivery of eCore™ courses, the staff at ALT is in a unique position to access students registered in these classes and to conduct research on online education.

A study (Morris et al., 2002) related to this research was conducted with students who withdrew from eCore™ courses in three consecutive terms (spring 2001, summer 2001, fall 2001). The study attempted to answer two fundamental questions: What causes a student not to complete an online course? Can we predict, based on certain demographics, educational, and personal factors, the likelihood that a student will complete an online course? A total of 120 withdrawal forms were reviewed and reasons for withdrawing were categorized into 12 reasons in four categories (Morris et al., 2002).

Table 3.1

Reasons for Withdrawing from eCore™

Categories	Cited Reasons
Individual Factors	**Personal reasons**
	Work conflict
	Poor technological skills
Resource Factors	**Resource problems**
	Technical problems
	Financial problems
Instructional Factors	**Dissatisfaction with instruction**
	Dissatisfaction with grades
	Prefer classroom environment
	Need individual attention
	Too much work in course
	Dual enrollment
Other Factors	**Other**
	No reason given

Forty-three percent of the students reported dropping out of eCore™ courses for instructional reasons (Morris et al., 2002). This is important in that it is the most often cited reason for dropping eCore™ courses, and it is the factor that has the most potential for intervention to reduce drop out rates in the online environment. Unlike the other three factors for withdrawal (Individual, Resource, and Other), the instructional factors may be altered by course designers and instructors to affect withdrawal rates from online classes.

The term "instructional reasons" is a broad category encompassing instructional design, professor responsibility, and learning theories. The purpose of this study was to look for major themes under the broad term "instructional reasons" for student withdrawal from online courses so that course designers and instructors could address these specific problems.

Research Population

The research population for this study was students enrolled in eCore™ courses during the fall semester of 2003. According to the eCore™ website, "eCore™ consists of online freshman- and sophomore-level courses designed, developed, taught, and supported by faculty and staff from the University System of Georgia. eCore™ offers courses in English, mathematics, science, history, and the social sciences. Courses comply with ADA standards to meet the needs of students with disabilities or special needs. All eCore™ courses are offered through accredited University System of Georgia institutions. Students register for eCore™ courses through one of five affiliate institutions that offer the courses." The courses offered by the University System of Georgia via the eCore™ program are designed as asynchronous, totally online courses that coincide with the fall, spring and summer semesters of the University System of Georgia. Each course runs for about fourteen weeks. Students in this research population took eCore™ classes without ever needing to leave home.

Subjects for this study were selected from enrollment and withdrawal lists provided by ALT and eCore™ administrators during the fall semester of 2003. There were 782 individuals enrolled in the online courses; some of the students were enrolled in more than one online course during this semester. 230 students withdrew from their courses during the semester with 552 students completing their courses. Surveys were mailed to all the withdrawers and to 275 of the completers. Thirty-two of the students who withdrew from their online courses agreed to be interviewed, as did thirty-four of the completers. The researcher interviewed sixteen students: eight who completed an eCore™ online course and eight who withdrew from an online course.

The researcher, working with eCore™ staffers housed in the Georgia Center for Continuing Education on the campus of the University of Georgia, was given permission by ALT to conduct this study using eCore™ students. Jacqueline Romo granted the Human Subjects Office approval on June 12, 2003. The researcher met with eCore™ personnel in the Summer of 2003 to develop a protocol for obtaining the necessary information for the study. The protocol agreed upon by both parties was as follows: eCore™ staff would e-mail a list of withdrawers each week to the researcher; the researcher would then download the file into a Microsoft Excel spreadsheet. The information located in the spreadsheet then would be used to generate the labels necessary for contacting the student withdrawers.

In addition to the weekly e-mails regarding withdrawals, a list of completers was given to the researcher approximately two weeks prior to the end of the semester. The decision to consider students as completers prior to the final examination was made for two reasons. First, according to the staff very few students withdraw from classes just prior to the end of a semester. Second, previous studies conducted by eCore™ indicated that fewer students respond to surveys once the semester concludes.

The data provided to the researcher regarding enrolled students was naturally considered sensitive information by eCore™. The information about the students was restricted to the following demographic information: name, home address, email address, class(es) taken, affiliated institution, and date of withdrawal (if applicable). The students were coded using an alpha-numeric code designating the week of withdrawal and a consecutive number based on the order in which the data was received from eCore™.

Instrumentation

The eCore withdrawal form in use at the time of this study did not provide sufficient information to allow eCore™ administrators to make instructional or other changes in the course format. Therefore, a revised survey based on the current student course evaluation was designed by the researcher to gain a more in-depth understanding about student dropout due to instructional factors. The instrument used in this research was developed following an extensive review of theories and models of online education. The major topics that influenced this research were student retention/drop out, student engagement/interaction, and instructional design. Following extensive research, one set of principles seemed the most influential in guiding the parameters of this study. The extensive work of two researchers, Arthur W. Chickering and Zelda F. Gamson, updated guidelines, which were created for a classroom setting to fit the online learning environment.

New theories and principles have begun to emerge in the last decade, which help to explain the phenomenon of student dropout in distance education. *Applying the Seven Principles for Good Practice in Undergraduate Education (1991)* by Arthur W. Chickering and Zelda F. Gamson has been a pivotal document for improving instruction in undergraduate education. These seven principles have been adapted in recent years by Chickering and others to fit distance

education instruction. The researcher created the table below (Table 3.2) to highlight how various researchers have adapted the *Seven Principles* for online education. This information was used to create the questionnaires (Appendix A) and interview questions (Appendix B).

Table 3.2

Adaptations of the Seven Principles to Fit Online Education

	Good Practice Encourages Student-Faculty Contact	Good Practice Encourages Cooperation Among Students	Good Practice Encourages Active Learning	Good Practice Encourages Prompt Feedback	Good Practice Emphasizes Time on Task	Good Practice Communicate High Expectations	Good Practice Respects Diverse Talents and Ways of Learning
Chickering and Gamson	Learn students goals; Mentor students; Know their names; Advise about careers; Seek out troubled students; Diversity	Collaborative learning and teaching; Encourage groups; Value diverse views and cultures; Join one campus group	Present work in class; Relate external events to class; Challenge ideas-good; Real-life examples	Prompt feedback on class activities; Return exams in one week-discuss w/all; Many evaluations; Written pros/cons-work	Assignments done on time; Time involved; Challenging goals; Oral presentations; Make up lost work; Cons of non-attendance	Good work gets praise; Publicly point out good work; Work 1:1 w/poor students; Best effort-not grades	Speak up w/questions; Diverse teaching activities; Material about women and minorities; Learning contracts
Graham et. al. (2001)	Policies for *types* of communication over different channels; Standards for instructors time to reply to messages	Require participation; Small discussion groups; Discussion + Task=Product; Feedback on quality-chats	Projects shared asynchronously; Student critique projects and offer comments	Instructor gives prompt information feedback; Instructor needs to provide more acknowledge-ment feedback	Set deadlines for assignments; Encourages time on task; Context for regular contact w/instructor and class	Communicate high expectations; Case-based approach w/real world problems; Provide example/models	Variety of project options; Develop guidelines for students to select project topics

Graham et. al. (CRLT) (2003)	Invite students to face-face meeting; Instructors more respectful; Built bond of trust w/students; Regular contact w/students	Include group projects in grades; Well designed discussion groups; Meet face-face once; *Structured* activities; Student evals	Student relate class to real-life issues; Authentic assignments; Present to whole class; Encourage challenge of ideas	Provide prompt information feedback; Monitor chat groups; Provide more acknow-ledgement feedback; Students give pro/con to other	Set up specific deadlines for class; Communicate good self-pacing; Spread out deadlines; Asynchronous conferences= time on task	Clearly list expectations; Call attention to good work; Provide models of good postings; Periodically discuss class pros/cons	Help student shape projects; Learn student interests; Encourage all viewpoints; Exercises w/real-life examples
Chickering and Ehrmann (2002)	Discuss values and personal concerns in writing; Confront others in safe environment; Discuss seems more intimate	Create study groups; Set up collaborative learning assignments; Provide group problem solving projects	Support apprentice-like activities; Simulation technique assignments; Help students develop insight	Portfolio evaluation strategies; Faculty can use hidden text option in word processing; Feedback via e-mail	Increase time efficiency by convenient-at home; Encourage time on task; Online resource help w/efficiency	Provide: real-life problems or conflicting ideas or paradox data sets; Provide options for peer evaluations	Set up real-life scenarios that require upper level thinking; Cohort study groups-students w/similar motives and talents; Work at own pace

The questionnaire and interview questions developed and utilized in this study were based on the essential concepts proposed by the *Seven Principles*. The questionnaire was developed by the researcher with guidance from Catherine Finnegan of the ALT staff and a dissertation committee member. The questionnaire includes thirty-three questions divided into subcategories based on the *Seven Principles*. The Likert scale used for this questionnaire includes answer options that include: strongly agree, agree, no opinion, disagree, and strongly disagree. Each response was assigned a numerical indicator on a scale from 1-5 with strongly agree as a 5 and strongly disagree as a 1.

The instrument was divided into ten subcategories. Seven of the ten subcategories match up with the *Seven Principles*. The other three subcategories asked students about course design issues associated with online learning. The three subcategories are labeled on the questionnaire as Online Experience, Course Structure Technical, and Course Structure Content.

The questionnaire also includes a yes or no question asking the student "Is this the first online course you have taken?" Students were asked to list the three main reasons they either withdrew or completed this online course. The last part of the questionnaire asked if the student was willing to discuss his/her experience with eCore™ course(s). If a student answered 'yes', they were asked to complete a section with contact information and these students were considered potential interviewees. They were also asked to read and sign the Consent Form (Appendix C). Students were provided with a postage paid envelope to return the questionnaire and consent form.

The qualitative method that was utilized in the reseach design was to interview students enrolled in fall semester 2003 online courses. Interviews were conducted with two subsets of students: eight students who dropped out of an eCore™ course, and eight who successfully

completed an eCore™ class. Only those students who signed a consent form were contacted. Because the students were located throughout the state of Georgia, interviews were conducted via the telephone.

The interview questions posed to eight completers and eight withdrawers were also based on the *Seven Principles*. The sixteen questions were designed to elicit more information about student withdrawers and completers. These questions were conceived to draw out student thoughts about faculty to student contact, student-to-student contact, active learning practices, prompt feedback, time on task, high assignment expectations, and practices that respect various viewpoints. The only difference in the interview for the two groups was the last question, which asked completers what were the primary reasons for completing the eCore™ course. Conversely, withdrawers were asked why they did not complete the course.

Data Collection

A list of students who withdrew from eCore™ classes was sent to the researcher on a weekly basis for six weeks throughout the fall of 2003 semester. A mailing schedule is an appendix (Appendix D). The key dates for the fall semester 2003 of eCore™ included the following: Classes Begin—August 18; Midpoint—October 6; Classes End—November 20; Finals—November 21, 24, 25.

The list of students was sorted alphabetically by last name. Initially, each name was assigned a letter and number code. Students who withdrew during the first week were assigned the letter A with three digits following the letter. Thus, the first student was assigned the code A001. Mailing labels were printed with duplicate names removed if the student withdrew from more than one course.

The coding of withdrawn students continued for six weeks with each subsequent group assigned a new alphabetic code. The group of students following the first week was thus assigned the code letter B which continued until the final group was assigned the letter F. The first mailing was sent on September 9, 2003 and the last mailing was mailed on October 15, 2003.

At the end of each week, the researcher compiled the mailing to be sent that week. The manila envelope that was sent to each student included the following: a letter from the researcher that described the project; a questionnaire; a consent form; an envelope that was stamped with a return address and postage; and a small pencil. The pencil was included as an incentive to encourage students to return the documents.

A schedule of reminder postcards was established prior to the start of the project to improve the rate of return. A student who had withdrawn from eCore™ would be sent an initial reminder postcard approximately two weeks after the initial packet was mailed (Appendix E). One week later, or three weeks after the questionnaire was sent, the student would receive a second reminder postcard. Students who had returned the survey were not sent a reminder.

At the end of October, the researcher, in consultation with his major professor, decided to send out a second complete mailing to students who had withdrawn from eCore™ courses. This extra step was taken to improve the response rate among withdrawers. In early November, a second mailing of questionnaires was sent to the 230 withdrawers who had not responded. The questionnaires were coded with each student's original code assigned from the first mailing. This substantially improved the response rate.

A protocol for surveying the eCore™ completers was established at the beginning of the research project. Based on advice from ALT professionals, students who were within two weeks

of fulfilling course obligations were considered 'completers' for purposes of this study. Completers were surveyed prior to the end of the courses since they would be less likely to complete a questionnaire once the semester ended. During the summer of 2003, ALT staff indicated that approximately 700 to 800 students would complete courses in the fall semester. Some students would complete more than one course. The research design called for the researcher to remove multiple names of students from the roster, and to send one questionnaire mailer to every other student on the revised complete list. Similar to the withdrawers, completers were also sent a series of two reminder postcards after the questionnaires were mailed. A file was created for each coded questionnaire that was returned. The mailing schedule for the questionnaires is provided below.

Table 3.3

Questionnaire Mailing Schedule

Group Label	Date Sent	Total Courses	Non-duplicate Students	Surveys Received
		Withdrawers		
A	9/9/03	60	53	15
B	9/17/03	61	52	18
C	9/24/03	33	28	8
D	10/01/03	32	26	4
E	10/8/03	63	50	11
F	10/15/03	29	21	3*
		Completers		
X	11/14/03	728	552#	52

Note. *one withdrawer moved to completer. #275 questionnaires mailed (every other student).

Since all materials sent to students were coded, the researcher was able to identify students who were willing to participate in the interview portion of the study. Students who returned the completed questionnaire and signed the consent form to be interviewed were contacted by phone to set up a mutually agreeable time at a later date to conduct the interview by telephone. The initial contact took no more than 5-10 minutes. The researcher began to contact

withdrawers and completers in December, 2003 to set up a convenient time to conduct the 30-minute interview. Most of the sixteen (eight completers and eight withdrawers) interviews were conducted during December however, due to the busy holiday season, a few interviews were conducted in January, 2004 (Appendix F). All of the interviews were tape-recorded and transcripts of the interviews were created.

It is important to note that all of the withdrawers dropped out of their eCore courses within the first month of the academic term. The sixteen students contacted for interviews were enrolled in a variety of courses offered by eCore. In fact, the withdrawers and completers combined took ten different courses. There are only three courses; Modeling, U.S. History I, and American Government in common to the completers and withdrawers interviewed. The diversity of courses taken by the sixteen students interviewed is also a limitation for this study.

Table 3.4

Courses Taken by Interviewed Students

Withdrawers			
Course Prefix	**Course Number**	**Course Title**	**Date Withdrew**
COMM	**1100**	**Human Communications**	**06-Sep-03**
HIST	**2111**	**U.S. History I**	**08-Sep-03**
ISCI	**1121**	**Integrated Science I**	**15-Sep-03**
PHIL	**1001**	**Intro to Philosophy**	**12-Sep-03**
MATH	**1101**	**Modeling**	**11-Sep-03**
HIST	**2111**	**U.S. History I**	**16-Sep-03**
POLS	**1101**	**American Government**	**18-Sep-03**
POLS	**1101**	**American Government**	**21-Sep-03**
Completers			
MATH	**1401**	**Intro to Statistics**	**n/a**
ENGL	**1102**	**English Composition II**	**n/a**
MATH	**1101**	**Modeling**	**n/a**
HIST	**2111**	**U.S. History I**	**n/a**
POLS	**1101**	**American Government**	**n/a**
GEOL	**1011K**	**Intro Geosciences I**	**n/a**
ENGL	**2132**	**American Literature II**	**n/a**
ENGL	**1102**	**English Composition II**	**n/a**

All participants' information remained confidential and an code was used for each subject's real name. The researcher was the only person to have access to the interview data which was audio tape recorded and then transcribed. These tapes were destroyed at the conclusion of the research project. Returned surveys were also kept confidential and destroyed after the research was completed.

Data Analysis

Data from the returned questionnaires were put into a Microsoft Excel spreadsheet. Demographic information about students was transferred into the new spreadsheet from the original spreadsheet provided to the researcher by ALT. The new spreadsheet included the code assigned to each student as well as the numerical responses for each question on the questionnaire.

Data from the questionnaires, put into an Excel spreadsheet, was transferred into a version of the SPSS statistical analysis software program. After discussions with the dissertation committee members and an ALT statistician, it was agreed to remove the no opinion responses from the software before running the analysis. In addition, all questionnaires that were not fully completed were removed from the study at this time. The removal of incomplete questionnaires reduced the final count of usable surveys from 59 to 52 for the withdrawers and from 52 to 49 for completers.

The SPSS program was utilized to run a t-test to determine the difference between means of the two sample groups (i.e. completers and withdrawers). Since the researcher had coded the questionnaires in a manner that determined when a student withdrew, the data was used to determine if there was any statistic difference between "early withdrawers" and "late withdrawers". Early withdrawers were designated as students who were coded with the letters A

and B while late withdrawers were considered students with letters C through F (Appendix G). There were 121 early withdrawers (within the first two weeks of class) and 157 late withdrawers who withdrew between the third and sixth week.

The questionnaire yielded data regarding whether a student had previously taken an online course. A comparison was made of the percentage of students who had previous online experience by completers and withdrawers (Appendix H). A similar comparison was made between early withdrawers and late withdrawers (Appendix I).

The interviews conducted with eight withdrawers and eight completers in December 2003 and January 2004 resulted in a wealth of qualitative data. The interviews were conducted via telephone, tape-recorded, and transcribed. The researcher consulted with a qualitative research expert for guidance in analyzing the data. The expert suggested a number of resources to help guide the data analysis process; however, she especially recommended *The Ethnographic Interview* by James P. Spradley (1979) as the premier book in the field. The book describes a twelve-step process that a researcher should use to make sense of the qualitative data (Appendix K). The developmental research sequence espoused by Spradley culminates with the creation of cultural themes.

Limitations

The purpose of the study is to provide insight into the reasons students report for dropping out of online course and strategies that can encourage them to stay in online courses. The mixed-method approach utilized in this study has provided an abundance of data; however, there are limitations to what one interprets from the results. The study does not claim that reported student perceptions are the only reason that they chose to drop a course. The study provides a snapshot of students enrolled in eCore™ courses during the fall semester of 2003.

The study is limited to student perceptions from eCore™ online classes created by the University System of Georgia, which allows students to take undergraduate core courses via computer. Because students enrolled in eCore™ courses are not required to visit campus, the results of this study are limited to students taking asynchronous lower division undergraduate online courses. The students are not part of a cohort. This study is interested in student perceptions from a wide range of people, and there was no effort to sort by any demographics including distinctions such as age, race, or gender. The results of this study were not sorted by subject area, thus the findings represent perceptions based on a wide variety of lower division courses. While there is opportunity for subsequent study of the eCore program, the results of this study provide course designers and faculty with strategies that may retain students.

Definition of Terms

With the exception of the terms "completer," "withdrawer," and "eCore™" which were defined by this researcher, the definitions of the terms in this study are those used by Schlosser and Simonson (http://itde.nova.edu/~simsmich/jan%2024.pdf).

Asynchronous Communication - interaction between two or more people that is time-delayed, that is, separated by minutes, hours, or even days. Correspondence course and e-mail are forms of distance education. The opposite is synchronous communication, such as talking on the phone or videoconferencing. Good distance education programs typically use both synchronous and asynchronous communication. A time-delayed method of communication through some type of recording device. It is replayed at the convenience of the user. Examples include e-mail and voice-mail.

Asynchronous Learning Network - A form of distance education that uses computer-networking technology, especially the Internet, for instructional activities

Browser - A Web client that allows a human to read information on the Web

Bulletin Board System - This is an online bulletin board service that use asynchronous communication with participants who share an interest in a subject area. Participants can leave messages for each other at any time and respond at any time. A personal computer with an auto-answer modem used to access a "host" computer for the purpose of reading and posting electronic messages

Chat - A real time conversation among computer users—similar to the telephone

Completer - students who finished an eCore™ course during the 2003 fall semester

Distance Education - A generic, all-inclusive term used to refer to the physical separation of teachers and learners (distance education, distance learning, distributed learning). Institution-based, formal education where the learning group is separated, and where interactive telecommunication systems are used to connect learners, resources, and instructors

Download - In a computer network, the process of transferring a copy of a file from one computer generally referred to as a central file server, to another, requesting computer

eCore™ - the eCore™ Project focuses upon the development of an electronically delivered core curriculum for the University System of Georgia. The eCore™ is comprised of courses leading to the completion of the first two years of an undergraduate degree. These courses are offered by University System of Georgia institutions

F2F- Acronym for "Face to face"

Feedback - Data is provided (fed back) to a student and instructor to inform them how much the student learned. These data also show how effective the teaching strategies and learning activities were in assisting the student to master the learning performance objectives

Hypertext - The linking of information together by highlighting key words that have been marked by creating paths through related material from different sources such as footnotes and encyclopedias. It is the ability to present connected documents

Instructional Design - A systematic approach to developing instruction both live and mediated. This includes a statement of course and lesson terminal learning performance objectives; assessment of these objectives by any means; selection of teaching/learning strategies based on the objectives; and feedback to both the student and instructor to determine to what degree the objectives were mastered and how well the selected teaching and learning strategies worked

Link - A reference from one document to another (external link) or from one location in the same document to another (internal link), that can be followed efficiently using a computer. The unit of connection in hypertext

Listserv - A special interest discussion group that corresponds via e-mail

Netiquette - This is the etiquette used during communications on the Internet

Synchronous - Direct communication, where all parties involved in the communication are present at the same time (an event) is a form of synchronous communication. Examples include a telephone conversation, a company board meeting a chat room event and instant messaging

Withdrawer-Students who dropped out of an eCore™ course during the fall of 2003 semester

CHAPTER 4

RESULTS AND ANALYSIS

This dissertation used both qualitative and quantitative research designs to answer the research questions posed. This study drew upon quantitative data from mailed questionnaires, qualitative responses from the same questionnaire, and qualitative data from telephone interviews with eCore™ participants. The results are displayed in text and chart form.

Survey Data

A total of 230 questionnaires were mailed to withdrawers with 58 returned and 52 deemed complete. A total of 275 questionnaires were mailed to completers with 51 returned and 49 deemed complete. A two-tailed t-test was conducted using the quantitative data from the returned questionnaires comparing completers and withdrawers. The questionnaire includes a total of thirty-three questions out of which nineteen showed significance $p<.05$. (Appendix J)

The questions used in this study were based on Chickering's and Gamson's *Applying the Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1991). Below are tables categorizing the statistically significant questions into the groupings used on the questionnaire. By separating the questions into categories, it is easier to define the areas that need improvement.

Out of the thirty-three questions found in the questionnaire, twenty-two questions were designed around *Applying the Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1991). It is interesting to note that only nine of the twenty-two questions posed to students showed statistical significance. It is curious that no questions in the categories

of "Faculty to Student Contact" and "High Expectations" showed significance in view of the importance found in the literature. These findings run counter to previous studies that indicate that these principles are important for student success in the online environment.

Table 4.1

Questions of Significance by Seven Principles (Chickering, 1991)

	Completers (N=49)		Withdrawers (N=52)		
Question	Mean	SD	Mean	SD	t
Student to Student Contact					
Discussions with other students added to my understanding of course material.	3.41	1.619	2.33	1.779	3.197*
Active Learning					
The instructor provided well-designed learning projects that added to my understanding of course materials.	3.47	1.487	2.50	1.732	3.023*
The course was designed to provide opportunity to practice concepts learned in class.	3.41	1.606	2.17	1.948	3.485*
Prompt Feedback					
The instructor provided feedback on graded assignments and quizzes in a timely manner.	3.10	1.747	2.23	1.875	2.418*
The instructor's feedback helped me better understand course materials.	2.88	1.867	2.08	1.813	2.184*
Time on Task					
The amount of time necessary to succeed in this course was clearly communicated.	3.65	1.614	2.96	1.692	2.102*
Dates for exams/quizzes were clearly communicated.	4.06	1.215	3.19	1.738	2.926*
Pace of course assignments and discussion affected my ability to understand course materials.	3.39	1.835	2.62	1.932	2.061*
Diverse Talents					
The instructor encouraged students to express opinions and thoughts.	3.96	1.513	3.15	1.944	2.330*

***p< .05**

Out of the thirty-three questions found in the questionnaire, eleven questions were included to created around the category titled 'Course Design." This grouping of questions was further divided in three subgroups labeled "Online Experience", "Course Structure Technical", and "Course Structure Content." After reviewing the questionnaire, the researcher decided to reorganize the three subgroups down to two for the purpose of clarity. The two new subgroups were titled "Student Technical Constraints" and "Technical Environment" which more

accurately describes the intent of the questions posed to students. It is especially interesting to take notice of the fact that ten out of the eleven questions under the category of "Course Design" showed statistical significance. These findings mirror previous studies that show the design characteristics found in web-based courses are important to students' perceived ability to learn.

All four questions under the classification titled "Student Technical Constraints" showed statistical significance. These four questions relate to the student's ability to access course components from a computer. It is clear that withdrawers encountered more technical difficulties than completers in the online learning environment.

Table 4.2

Course Design Questions (Student Technical Constraints)

	Completers (N=49)		Withdrawers (N=52)		
Question	Mean	SD	Mean	SD	t
Student Technical Constraints					
The computer I primarily used was adequate for my participation in the course.	4.37	1.014	3.79	1.576	2.208*
The Internet connection I used allowed me to participate adequately in the course.	4.43	.791	3.54	1.590	3.593*
My technical abilities were adequate to participate in this course.	4.49	.617	3.67	1.665	3.304*
Learning to use e-mail and discussion tools was not difficult.	4.43	.707	3.52	1.578	3.773*

***p< .05**

The other classification under the category of "Course Design" is the seven questions under "Technical Environment." This classification of questions was designed to query students about their abilities to navigate and find information in their online course. Out of the seven questions posed in the subgroup, six showed statistical significance. It is apparent that withdrawers were less likely to find information necessary to effectively work in web-based education compared to completers.

Table 4.3

Course Design Questions (Technical Environment)

	Completers (N=49)		Withdrawers (N=52)		
Question	Mean	SD	Mean	SD	t
Technical Environment					
I found the course layout easy to navigate.	3.63	1.349	2.42	1.576	4.151*
The instructor provided specific assignment deadlines.	4.04	1.338	3.38	1.705	2.158*
Course components [tools, lessons, quizzes] were easy to find.	3.63	1.410	2.77	1.604	2.877*
Links to supplementary web sites were active generally.	3.18	1.740	2.13	1.981	2.832*
Additional software/plug-ins [Flash, MathML, Acrobat] was easy to install.	3.14	1.803	2.75	1.824	1.088
The course goals and objectives were clear.	4.18	.808	2.92	1.856	4.469*
The activities and assignments were closely aligned with course goals.	3.69	1.461	2.65	1.929	3.066*

***p< .05**

Students were asked a yes/no question "Is this the first online course you have taken?" It is interesting to note that two-thirds of the withdrawers had no previous online course experience while 57% of completers had taken online course previously. The percentage difference between withdrawers and completers implies that the prior online experience of the completers made it easier for them to function in the web-based learning environment.

Table 4.4

Is this the first online course you have taken?

Withdrawers (n=52)		**Completers (n=49)**	
Yes	**No**	**Yes**	**No**
35	**17**	**28**	**21**
67%	**33%**	**57%**	**43%**

Following data collection, the researcher decided to compare early withdrawers (i.e. those that withdrew in the first two weeks) to late withdrawers. The researcher noted that just under half of all withdrawers did so within the first two weeks. This prompted the question: Is there

any difference between students who withdraw early in a term versus those who decide to withdraw later? It is interesting to note that 44% of the students who withdrew from the online courses did so in the first two weeks of the semester.

Table 4.5

Early vs. Late Withdrawers and Completers

Group	Initially Mailed	Total Entries	Printed Labels	Received Surveys	Complete Surveys
Early Withdrawers					
A	**9/9/03**	**60**	**53**	**15**	**13**
B	**9/17/03**	**61**	**52**	**18**	**17**
Late Withdrawers					
C	**9/24/03**	**33**	**28**	**8**	**7**
D	**10/1/03**	**32**	**26**	**4**	**4**
E	**10/8/03**	**63**	**50**	**11**	**9**
F	**10/15/03**	**29**	**21**	**3**	**2**
Completers					
X	**11/14/03**	**728 552 people**	**275**	**52**	**49**

There was only one statistically significant question between early and late withdrawers. However, the one question that showed statistical difference between early and late withdrawers indicates that students who withdrew earlier in the semester were less clear about what was expected of them in the online course.

Table 4.6

Student Perceptions of Online Education (Early and. Late Withdrawers)

Question		N	SD	Mean	t
The course goals and objectives were clear.	**Early Withdrawers**	**30**	**1.479**	**3.47**	**2.602***
	Late Withdrawers	**22**	**2.085**	**2.18**	**2.470***

***p<.05**

Not only was there little difference in how early versus late withdrawers answered the quantitative questions, but there was almost no difference in the online course experience between the two groups. This finding suggests that prior online course experience or lack of

online course experience meant that early and late withdrawers were equally likely to remove themselves from online courses.

Table 4.7

Is this the first online course you have taken? (Early vs. Late Withdrawers)

Early Withdrawers (n=30)		**Late Withdrawers (n=22)**	
Yes	**No**	**Yes**	**No**
20	**10**	**15**	**7**
67%	**33%**	**68%**	**32%**

Interview Findings

WebCT Problems

An unexpected finding of this research was data regarding problems with the adoption of a new version of WebCT by eCore™ personnel. In view of the connection between student retention in the online learning environment and student learning, this results warrants mention. Numerous students, both completers and withdrawers, complained about glitches with the WebCT Vista platform in the fall of 2003. Significantly, students who indicated previous experience in the online learning environment mentioned frustration with the new version of WebCT.

Over half of the students interviewed for this study indicated problems with accessing information using WebCT Vista. One student expressed the overall sentiment of frustration felt by many students:

> Well the only one I can really think of is the beginning of this semester when they switched eCore™ over to a new system, they went through Vista. They had some technical difficulties at the beginning when they didn't have, like the email wasn't up and running, and then you couldn't get to the lessons, but they got that squared away within the first two weeks of class, which kind of put us behind, on both of the courses I had this

> Spring, you know, regarding the material, you know, you still have to cover it all, but you have got to really crunch it together, but that is really the only, most of the things they have well organized and well set up that you can access them, other than just that first couple of weeks.

In addition, eCore™ participants found it difficult to download or compile information when assessing WebCT Vista. This problem caused considerable annoyance to class participants. A comment that expresses this irritation states:

> I don't like the new WebCT because you can not, I don't know if this is really relevant, but you can not compile the lesson, and that is why you have to put it all into Word and you know, it takes a very long time, because the Web CT that they had before, you could compile your lesson and you would have it, you know, basically in a Internet explorer, or you know, one page, and here all the pages were separate, you had to print them out, but it was like two sentences per, you know, per page, and it was just pretty silly, that was to be a pain.

Several technical difficulties led to further aggravation with WebCT Vista. Two students pointed out glitches with the software. The first noted, "There were, I know that we just switched to Vista this time, but there were several links inside the course materials that were inoperable. They did not work." Moreover, technical assistance was less than satisfactory for some. "Well I couldn't download it at all. I couldn't get it programmed onto my computer properly at all. I had to go through the technical support, through the WebCT as well as through my instructor, to try to get it to work and I never did actually get it to work."

Most noticeably, the exasperation with trying to use the newer edition of WebCT caused some students to withdraw from the online environment. One student who withdrew from the

2003 fall semester clearly expressed this sentiment, "WebCT Vista is the most frustrating piece of software I have ever tried to use in my life. It shut down, on one particular test, it shut down, it was only like five or ten minutes before the end of the test, but the test shut down. Well, I made a 61 on the test."

Student Completers

The following section reports the interview findings by category from students who completed online courses. A total of eight student "completers' were interviewed. Overall, completers showed self-reliance and persistence.

Self-reliance and persistence.

It can be generalized by the responses from eCore™ completers that there was a desire to complete the courses that they had started. Almost all the completers mentioned an aspiration to see the course through to the end. Some students indicated this in simple, straight-forward terms such as: "I wanted to succeed and pass" or "I never quit because it is hard" or "I just didn't want to drop class—stuck it out" or "I really don't drop classes anyway."

More specifically, students overcame potential stumbling blocks that seemed to bother withdrawers from eCore™ classes. A student who completed the course commented on the seemingly compressed time of the semester.

> This semester the time seemed to be, or the length of the class seemed to be, shorter than the previous classes that I have had. To me, it seemed a little too quick of a pace this semester. If it had been extended by a week, I think that would have helped me personally, or even two weeks, but you dive in and you make it through.

Yet another completer pointed out her multiple obligations; however, unlike withdrawers, this did not stop her from completing her online class.

> Well, I made a good grade in the class. I think I came out of there with a B, but you know, it was, it felt like we could have gotten a lot more out of the class, and of course, it may have had a lot to do with the fact too that I started a new job and taking a class all at the same time. I just didn't feel like there was, I didn't feel the quality of class was there as compared to the creative writing class.

In contrast to withdrawers, completers rose to meet the challenges of work in a web-based learning environment. The difficulty of material to be covered did not deter them from finishing class assignments. One completer brought up the effort needed to feel competent in online discussion, "You really have to research the material and be able to discuss it back and forth, and then you are graded based on your participation of discussing things back and forth, turning in assignments, things like that." Similarly, another learner talked about the hard work necessary to complete eCore™ assignments:

> Well, discussions definitely force you to take what you know and force you to make sure that you are understanding it. The other things, like writing essays, you can learn about the stuff and write essays, and then you had to turn those in for grading, and that forced you to verify that you are actually learning and knowing the material. The quizzes, they are just kind of, the quizzes are good, because they make you kind of verify that you know all the information, but they weren't nearly as helpful as the discussions and like the essay assignments.

Asynchronous environment and flexibility.

In the case of the online learning environment, flexibility can be like a double-edged sword. For people ready to work independently like the completers in this study, this flexibility can provide an opportunity to pursue a degree while balancing other life responsibilities. In

contrast, withdrawers seem to be lost in the web-based learning environment. The open-ended question on the written questionnaire essentially asked students why they completed or withdrew from eCore™ classes. The completers for the fall of 2003 semester wrote comments like: "It provided the flexibility I desired" or "eCore™ allowed me to take classes while working" or "It worked well with my work schedule" or "I can use time flexibly".

The convenience of eCore™, anywhere anytime learning, attributed to the satisfaction of completers in the study. This aspect of online education clearly contributed to their desire to remain in the course to the end. One student reflected on their online learning experience, "I like online classes more, you know, especially for just eCore™, because it is more convenient, and easy to keep up with." Equally important, the ability to manage vocational and avocational pursuits through web-based education appealed to many students like this woman:

> My primary reasons, I am trying to get my degree in teachers education [sic], and really working at a school everyday that is just, and I have young children that really can not be home by themselves, and it is the convenience of being able to do that, is something that I really, really needed.

Furthermore, a man pointed out the convenience found with eCore™ classes, but he also mentioned freedom of not having to take the course on a traditional college campus:

> Because it is a requirement for my college degree, but online courses are something that works really well for me, because of the convenience of it being at home. I have three small children, so the option of getting it completed online, just for me, far superior than needing to take it on the campus.

In summary, a woman who completed her eCore™ course succinctly expressed her positive opinion of freedom found in this type of learning that is bolstered with just enough

structure to allow her to complete the course. Her sentiments mirrored the thoughts of many completers:

> I just enjoyed taking the classes. I much prefer an online class to a in the room class. I like being able to work at my own pace and not having somebody stand over me, all the time. However there are deadlines and things to meet, but you still have the freedom to be able to work at your own pace, and I just really like the online courses. I think they are, I think they fit a niche in my life. I don't have a lot of time to spend in a classroom setting, so this fills that niche for me, so that I can be able to take classes and eventually earn my degree.

Pace in the asynchronous environment.

It should be noted that the pace of online classes looks as if it plays an important role in the web-based learning environment. The ability of learners to keep up with the assigned curriculum components plays a role in their willingness to remain in the course. A few written comments by completers reflects this viewpoint, "Could work at my own pace" or "Ability to work and take tests at any hour" or "I enjoyed the ability to work at my own pace".

The pace of material presented in eCore™ was often mentioned by course completers. The comments of one woman conveyed her happiness with the tempo of the course she brought to an end:

> Well, I work full time and I have a daughter, and I can't go to class. It is just not really an option for me right now, so doing the online allows me to pretty much log on whenever I can, and it gives me the option of not having to go to a class at a certain time, and given the length of each lesson allowed me to finish it within a week, giving me basically time is what it comes down to, and if I could I would try to finish all of my school online. The

classes, I have had great experiences so far, and they have been easy to understand. They have been easy to follow. The teachers have been great. So that keeps me wanting to do more basically.

In addition, yet another completer commented on the fluctuating pace of the course she completed. A few completers conveyed similar thoughts:

> Yeah, it is quick at times and then, you know, real slack at times, it was just, it really depended on how much, if I had an essay and a test, and two discussion questions to answer in a week, then it could get kind of hairy, because you have to do the research to be able to write the paper, but you still got to devote the time to answering the discussion questions and taking a test, and everything too. So it really depended on the amount of, the number of assignments involved in that particular unit.

Finally, the discussion portion of the course required students to be in daily contact with others in the class. A student spoke about the frequent communication he had with other course participants and the pace established through this contact, "It was doing the assignments, and just in general interacting with the other students via their postings, and making comments about their postings, and reading the comments they made about my postings."

Overcoming problems.

A recurrent theme in the interviews was a dedication to complete the courses in which they were registered. This desire to successfully conclude the eCore™ course meant that completers viewed inconveniences as just that, nuisances to overcome. In contrast, withdrawers gave the impression that inconveniences were a rationale to get out of the online learning environment. One woman looked for familial guidance to help her complete the course, "My husband helped me understand concepts."

While completers generally enjoyed the online learning experience, reading material online was confusing for some and did not fit into busy schedules for others. A significant number of students commented on printing out material found in their eCore™ course. "Well, you know, I would just print it out and I would read off-line, because I don't like reading online." Another student commented:

> Well I always printed out my assignments because the job that I hold, I may have fifteen minutes here to read, or I might have fifteen minutes there to read, and I don't always have a computer handy to pull it up. So, I would print out my assignments and I would generally read afterwards, so most of the time I spent at the computer was answering questions, doing discussions, doing research.

The discussion groups posed another potential problem for online learners. Quite often, discussion groups were monitored and graded by the eCore™ instructor. This could present a dilemma to online participants. Some students resented the discussion requirement in the course. However, completers overcame the difficulties that discussion groups could pose. One woman took a pragmatic view of discussion groups:

> In a couple of classes I have had, in the group work that we did, you really didn't have a choice about whether or not you respected other opinions, you simply had to work with those people, so you had to accept what they believed, or what they thought. In others, you, I have actually openly argued with somebody on a point, in a discussion, so it goes from one extreme to the other.

On the other hand, one male completer simply created his own work group when his original group was dispersed:

> We were assigned groups to interact with, then unfortunately for me, the, I was only assigned two other members in my group, and they both dropped the class and I was assigned to no one else to interact with, so I just kind of chose my own classmates to interact with.

In a similar vein, a woman mentioned the ad hoc e-mail splinter group that was formed in her course when the chat room failed to work:

> The interaction was pretty good. We would, you know, kind of talk back and forth, sometimes that chat room wasn't really working, people didn't know how to use that so, but we would like send little emails in the little web thing that we had there, and kind of helped each other out, and I think that worked rather well.

Equally important, a substantial number of completers failed to let technical liabilities or general dissatisfaction with an eCore™ course deter them from completing the class. While technical concerns frustrated withdrawers, completers like this woman kept going toward closure.

> Um, nothing that I ran into on their side, on my side, you know sometimes my computer would run slow and it would take me a long time. The only other thing I did have with it is sometimes the links that they have, like if you wanted, if they have a page for further exploration, and if you want to look up some of the stuff, they gave you some links and some of the links didn't work.

A feeling of displeasure with eCore™ also did not prevent completers from seeing the class through to the end.

> I was not happy with the course. I tried to use the tutoring service that was available and they were no help. I was under the impression that the course was going to be something

different from what it actually was. I was under the impression it was going to be more real world problems, and it was not, and I was pretty disappointed in it.

Logging in daily and time spent.

It is evident by the qualitative data collected that regularly logging unto the eCore™ course site provided completers with a sense routine. This routine provided completers with a feeling of reassurance. Many of them viewed this practice as part of the online experience. This differed sharply from withdrawers who resented the practice of regularly logging unto a course site. The recollections of one student provide a typical answer for completers.

I would login everyday, just because that is what I do, and I probably spent about, well if we had an assignment, you know, that day I would probably spend about an hour, you know, doing it, reading, and it is not that I would just login, logout, leave the answers. So I would say thirty minutes if we didn't have anything to do, and probably about an hour and a half if we did.

While not all interviewees were able to give an accurate account of how much time they spent online per day or week, it appeared that completers were prone to spend more time on their computer. Completers spent approximately fifteen to twenty-five hours per week in the online environment. The comments of a few completers show the effort made by successful eCore™ students. One woman responded to an interview question about her online habits, "Let's see, I would say I spent at least, maybe, I would say maybe twenty, twenty-four hours for the week." Yet another woman spoke about the regular effort needed to be successful in web-based education.

The lessons you had to read and that took most of the time reading, and then reading the assignment in the book, and then you know, you dedicated at least an hour for each quiz

every week, and then I would say, you know, two or three hours if you had a paper to write, or two or three hours if I had a lab to do.

Inspection of the data reveals that half of the completers spoke about regular weekday logons, but they also pointed out that they spent significant amount of time completing assignments over the weekend. An eCore™ completer stated, "Yeah daily was about one to two hours a day, at least. I would say two hours a day, pretty much during the week, and then probably about five to six hours on the weekend." Similarly, another student that saw the class through to completion commented about his habits of accessing the site:

> Daily, I would have to say I spent, it would vary. I would spend more time on the weekends, but Monday through Friday, I would estimate that I would spend an hour per day, and on the weekends, I would spend upwards to two-four, on maybe even a Saturday, and probably about two on Sunday. So I would spend anywhere from ten-fifteen plus hours a week on the assignments, more or less.

Another aspect of the time commitment necessary to thrive in the online learning setting was the similar expectation of time needed to complete assignments compared with face-to-face classes. Both completers and withdrawers commented on the time factor in interviews; however, completers adapted to the situation while withdrawers generally opted out of their courses. A completer expressed his views on the rigor of his online experience.

> Well there is always, in online courses, a participation grade based on your discussions, and then of course assignments, I really think that online courses force you to participate more than in class courses, because you have regular discussions. I mean a lot of students can go to class and sit there and just sort of absorb a lecture, or just sit there and sit through a lecture, but in online courses you don't have that option.

A different student commented on the time needed to succeed online compared with face-to-face classes.

> Oh wow, on average on my courses, I spend between ten and fifteen hours a week. English of course is at the higher end of that, and government is a subject I am more familiar with, I spend a little bit less time with. Generally you spend as much time on an online course as you do two of your on campus courses, that is pretty much the standard with that.

Clarity on grades and assessment.

Another phenomenon that may be closely related to student retention in web-based higher education is the issue of clarity. Students who completed eCore™ courses were in the main more aware of what they needed to do. To that end, they were usually quite clear about how they would be evaluated or graded for assignments. This differed by and large from eCore™ withdrawers.

Specifically, students who completed eCore™ classes were often able to express exactly how they were graded for the entire term. A male completer conveyed his understanding of the requirement for his course.

> Okay, the final essay was 30% of our grade. The online participation I am going to say was probably 20% or our grade, and just the other was a total, you know the other 50% would be the other four essays that came from that, the grades would come from that.

A different completer stated almost the identical recollection of how she would be graded for the academic term. “Most of the classes have used twenty percent for discussion, twenty percent for essays, and then thirty percent for test, and then fifteen percent for midterm, fifteen percent for

final." While a little less sure of herself, yet another completer was able to articulate the various graded assignments in her eCore™ class:

> Yeah, so I guess the discussions were actually 30% of the class, with the final, and everything else would just be assignments. There was an introductory speech, a public speech, no, it was actually 335, because we had another interview, and which was also 50 and a film analysis paper, which was also 50, so it was out of almost 400 [points].

Instructor feedback

Over half of all completers gave commentary about the feedback they received from instructors and how these remarks assisted them in the course. One student simply stated, "I had help from my instructor." A different completer noted the positive contribution of her instructor's feedback. "They were, they answered my questions,…I wasn't still wondering what I should do after I sent an email. They clarified everything and was very good at explaining what I needed to do."

Completers commonly spoke about the meaningful feedback they received from instructors. Often, e-mails sent directly to the professor would garner quick and effective responses. The comments of one completer mirror the thoughts expressed by numerous completers:

> The emails worked very well and also the discussion area I mentioned if they needed something that they wanted to tell everybody, then we had a main discussion area and they would post it in the main discussion area and we were told basically in the beginning in our syllabus, to check that every time we logged on.

With respect to feedback, some students commented on the quality of feedback received from instructors. A female student provided her insights into what constituted a quality response.

> Well, the great one, she would send us a long email with the feedback on whatever we sent her, so if it was like a speech that we had to do, we had to write a speech, she would send us about a page of what was good about it, what wasn't so good, which she would say nicely, of course.

A review of the data shows that faculty who provide prompt feedback to student inquiries increase the sense of satisfaction in their students. The results were consistent with other studies of web-based courses. E-mail provided an effective manner to get responses. One student commented,

> Yeah, she was very good at answering her email. I mean you know, I didn't really have a lot of questions because it was a communications class, so whenever I did have any questions, she was very prompt. She would give me a long answer. Usually more than I needed.

Students often commented how e-mails worked well for individual requests while discussion worked well for questions that many students may have raised.

> The emails worked very well and also the discussion area I mentioned if they needed something that they wanted to tell everybody, then we had a main discussion area and they would post it in the main discussion area and we were told basically in the beginning in our syllabus, to check that every time we logged on.

Another completer distinguished between e-mail, discussion, and main topic board.

> E-mail and discussions were probably the best. E-mail, you would usually get an answer within twenty-four hours. Discussion, you may get an answer in an hour or you may get one two days from now. It was never, you never knew exactly when your question was

going to get answered, and if you used the main topic board, it never got answered. So probably email would be the best.

Yet another student expressed a similar view.

> E-mail was always good if you had a direct question between you and the instructor, because it is kind of private, but the message boards, the main menu, kind of the main area of the message board, for overall questions that most of the class is going to be asking, were really useful too, but they weren't as timely as e-mail. I think the instructors generally checked the e-mail for issues first, because there is so much material on the discussion board, that it is, you know, they have got to be able to get through all of the discussions the students read and do.

A completer summarizes the importance of prompt feedback in the online learning environment:

> Well I think it is important that you understand what you are supposed to be learning and if the teacher offers you feedback, and it seems to be receptive to your asking questions then you tend to ask more questions, and you tend to perform better, you know, if a teacher is, for instance, my creative writing teacher set up a time, and we could go into her chat room and chat with her, and it may be four or five of us talking, and we could have a good discussion, whereas with this latest professor, you may see that he was online, but he would not reply to you at all, and that is kind of a, you know, that is a lot, I didn't feel like that was a real good situation.

Faculty involvement.

The study's findings suggest that faculty participation in the online learning environment can play a pivotal role in student perception of a positive experience. These findings support

what has been found in other studies of online courses. It is reasonable to assume from the commentary of eCore™ completers that their experience with encouraging instructors helped them to remain in the course. A sampling of comments from the questionnaire plainly points out these views. “The instructor motivated the class”, or “I stuck with my current one due to professor encouragement”, or “I had good encouragement from instructor”, or “The teacher was very understanding”.

Faculty participation started early in the course according to most completers. The opening weeks of the course seemed to set the tone for the remainder of the semester. The tone was often set by an exchange of biographies between the professor and class participants.

> Yeah the first week was our bios. She started off with her own and we, you know, took note of what she wrote and kind of compiled our own little bios and that is how we got to know her and everybody else in the class.

It was incumbent upon the instructor to play an active role in the class assignments for many eCore™ participants. Even though completers were noticeably more self-reliant then withdrawers, they still indicated the importance of faculty participation.

> And she never, my other professor would answer the discussion, she would actually not, you know, say, this is better than someone else’s, but she would give you a longer reply, and she likes it more, or she thought you gave her good information, she would elaborate on it, and you know, you would learn even more, you know, about the subject.

Another commented on how her instructor acted like any other student in the class. “They generally replied to a lot of the students, if you posted they would make a reply to it, just like a student would, just like another student would, so that was pretty neat.”

All eight completers interviewed for this study spoke about the active role faculty took in their course. Some even compared the experience of the class they completed to other classes.

> The creative writing class was a lot more enjoyable because there was a lot more interaction with the teacher and the class as a whole. This particular, this last class I took, there was not a lot of interaction between the students and the professor.

Yet another student in a creative writing class spoke about the exceptional learning experience she encountered with a professor that actively took part in the class.

> The most successful class I had, like I said was a creative writing class, hers was very upbeat, very positive, very encouraging. The last class I had there wasn't, like I said, there just wasn't a lot of interaction between the professor and students.

A review of the literature suggests that faculty who facilitate discussion sessions are apt to be more successful in stimulating student responses. The reaction of one woman that completed her eCore™ course echoed the views of others:

> …the teacher actually was probably, I guess you would say she was almost a facilitator, in that chat room, that was probably the most enjoyable class I took because it was more like a classroom setting. She was in her chat room at certain hours and you could go in and chat, with the teacher and other students who happened to be in that chat room, which made for a very, you learned a lot, it was just a more, it was just a better experience.

Two students commented on the effective facilitation techniques employed by their instructors. The first one mentioned,

> Once again they participated a lot in the discussions, and anytime maybe somebody, or there were not a lot of post, the teacher would say, would ask another question, like to try

to stimulate other students to participate. So like if the first question wasn't going over well and nobody was really understanding it, maybe the teacher would ask another question, and more people would start participating.

The second completer noted,

> Normally the professor would begin his comment about what you posted in the discussion area with, this is a great opening comment, this is, your insight into this question is on target and above expectations. Then if he didn't think you had gotten the point of it he would probably say, I think you are missing the point here. Look at it from this angle, or answer this question.

A few completers spoke about the extra steps some instructors would take to generate active participation by students. A male student that was in the process of putting the last touches on his eCore™ experience in the fall of 2003 clearly showed how one faculty member took extra care to help students.

> I think that that would probably be through optional essays, occasionally they would give you, if you had something that interested you, there would be an option maybe for some extra credit kind of thing, where you could do an additional essay on, you know, pick a topic that interested you, out of a certain category, which pertains to class but may be an extra credit. The other thing they did was during the discussions if they saw something that interested you, they may get into the discussion a little bit with you and kind of challenge you to look it up and do more research on that topic.

Syllabus and calendar.

eCore™ course completers, unlike withdrawers, typically knew how to locate information in the syllabus and other online tools about class obligations. These students were

definitely alert to the places they needed to point and click in order to make sure they were clear about the course. A completer spoke about the multiple places she could access to get information about the course.

> In the syllabus, which is also what we talked about in our orientation paragraph. We had to read the syllabus, make sure we understood it and then if we had any questions we could ask, but it went over what they expected, and each lesson gave a deadline, like this, and we had a calendar, and on the calendar was posted the deadline, like this paper was due then, this quiz was due then, this discussion was due then, that kind of thing, so it was like three areas, one in the syllabus, one on the lesson, and then one on the calendar, so it was three places that it was listed when each assignment was due, and each quiz."

Yet another completer verbalized the clarity of the syllabus she reviewed.

> …the same thing, and in the syllabus they gave you basically what they are looking for, as far as, like in your discussions and in your quizzes even, they would say you would need to at least have, you know, so many sentences, and it needs to have, you know, so many points, and this is the grade you will get if you have this amount. This is the grade you will get if you have this amount, that kind of thing.

By virtue of reviewing the syllabus and other locations on the eCore™ site that provide information about the course, completers obtained a clear picture about what was expected of them. The calendar feature was mentioned by all completers as an effective method of locating information. "The assignments were posted and a calendar was available, when it was posted, and it had the deadlines on there and the assignments had the deadline on there also, on them. She would post them in the course materials." Another person relayed a similar thought about the calendar feature:

> All of them have a calendar that you have to go by, and they are usually very specific, this assignment is due, you are expected to do this, this, this, and this. You are expected to know, this and this, you now, that kind of thing, and then of course the test would decide how much of that material you actually learned.

As mentioned previously, some students felt the need to print out course materials to be successful in eCore™. This was also true for several students concerning having access to cut-off dates. The comments of one student accurately put across this sentiment. "Well they had the calendar for deadlines, the calendar is a wonderful thing because you could just compile that and print it off and have a hard copy sitting there so you would know exactly, you didn't have to keep flipping in to it."

Assignments, discussion, and expectations.

Equally important, the qualitative data indicated that completers were not only more aware of where to gather information about course requirements but, once accessed, they knew how to proceed. Comments in the questionnaire allude to the phenomenon, "It was easy to understand" or "The tests and assignments were easy" or "It wasn't difficult to complete".

Since discussion groups constituted a considerable portion of the grades in eCore™ courses, it was important to be clear on the expectations of the instructor. In contrast to withdrawers, completers universally understood what was required to successfully complete discussion assignments. A female participant observed:

> Well you pretty much had to because assignments, you would write initial discussion posting, and then you would have to respond to two or three of the other students postings, so I mean you had to, or you wouldn't, you know, get full credit for that assignment.

Additionally, another completer related her understanding of discussion group expectations.

> Each lesson had a discussion question and you had to answer the question and then respond to two other students who posted their discussion. So basically once you had a lesson you had the question, you went into the discussion and you posted the answer to the question, and then while the other students were posting you would go in and post a reply to their discussion, and then in turn they would post to yours. So, generally, every lesson at least had three posts, three discussion posts, where you went in and typed something, or answered somebody's question.

The benefits of active participation in the discussion portion of the class were not lost on many completers.

> Good, it was good, like I said, and basically each lesson had a discussion posting and we were able to talk to each other and if we didn't understand something ask someone else to get their point of view from it, or even if we had our own point of view and somebody else had, it gave us a different perspective from their point of view. So it basically opened up the lesson a lot.

A review of the literature indicated that students rarely work ahead in online courses, yet a few completers noted that the eCore™ assignments allowed them the option of working ahead. According to one student,

> The pace was actually really great, each week basically we did one lesson, and that was consistent in pretty much all of my classes. So you had enough time to read the lesson material online and also read the lesson material in the book, and then complete any of the assignments or discussions. So, the week was great, and it even allowed you to start, you could even start the next week if you wanted to. So like if I went the whole week and

I did my lesson and I had the weekend left, I would go ahead and start the next week's lesson, and that worked real well.

Still another participant remarked:

As far as the assignments go, they have their course syllabus, which generally is all set out, with all your assignments for the whole semester. So if you get an assignment complete that week you can go ahead and start if you know you are going to have a busy week the next week with other tasks, which is really nice to have that overview of the whole course right there at the beginning. The other thing is that if there was a change of anything on the syllabus, something additional, something that, you know, they switched, instead of this essay to a different one, generally he would put it through a whole class email, and send it through email.

Rhythm and flow.

A recurrent pattern in the comments of completers interviewed, and notably lacking in the responses of withdrawers, was the rhythm or flow the course seemed to develop. The development of a flow in the course was present for many completers. As one completer succinctly stated, "The pace was fine. It wasn't too fast, you know, it wasn't too slow. It was just, you know, it was just right."

It is important to note that instructors could monitor the rhythm of the course by adjusting assignment deadlines when necessary. A number of students indicated that a watchful instructor kept the course moving, but they made slight adjustments when necessary.

I think the pace was good. I think the pace was quite fair considering you know, the time it took to get the assignments graded, I thought it was quite fair, and you know,

extensions were given, you know, when they were needed, or if something was revamped she would extend the time. I thought that went rather well. The pace was nice.

A completer also commented on the pace of her class, "Sometimes the speeches, I mean she could make a deadline and she would give us only two weeks to do the speech and mail it into her, but then she would extend the deadline, you know, so it wasn't that bad."

It is evident that a well-designed course created a positive flow without the need to make adjustments to course assignments. Several students made note of this phenomenon. One student's observation reflected the views of these students. "The pace was very good. The material that was difficult to understand, we were given more time with. The things that were not difficult, we had a shorter amount of time, so the pace was fine."

Weekly lessons.

Almost all of the completers commented on how the curriculum was created in weekly modules. The weekly nature of these course chunks helped completers schedule their time effectively. This was part of the instructional design process by ALT instructors, designers, and faculty. Not only does the aforementioned pattern create high-quality classes, but the weekly tempo was appreciated by many students. One student stated:

> "The pace was actually really great, each week basically we did one lesson, and that was consistent in pretty much all of my classes. So, you had enough time to read the lesson material online and also read the lesson material in the book, and then complete any of the assignments or discussions. So the week was great, and it even allowed you to start, you could even start the next week if you wanted to. So like if I went the whole week and I did my lesson and I had the weekend left, I would go ahead and start the next week's lesson, and that worked real well.

A different student mentioned the pace established in web-based classes versus face-to-face:

> The pace of them are actually pretty good with the exception of like I said at the beginning when they were down and then we had to kind of cram a bunch of extra stuff in, but all my courses are a pretty good pace, because it is a continual thing, it is, where on campus classes you go once or twice a week, and you may go home and you might study for a couple of hours, over what you did that day, and then you prep for your test and things, but online courses it is a constant flow of material, because generally you are logging on almost daily, and doing a little bit here and a little bit there, so you are getting a little bit at a time, so you are retaining more, but the pace of them are really good. It is just one of those things that you don't want to get behind on.

The establishment of specific weekly deadlines also set up a tempo for eCore™ participants. One completer noted this trend:

> We were expected once again to confer with one another on a regular basis, and to respond with her if we needed her help with anything. Do all assignments, of course turn them in in a timely fashion, usually it was like Sundays at 4:30, or 4:30 on Thursdays, were our general days that we had to turn in whatever assignment was due, unless there was some mass confusion with everyone, and then she would maybe revamp the assignment, and give us an opportunity to extend from maybe Thursday to maybe that Sunday instead.

Student Withdrawers

The following section reports the interview findings by category from students who withdrew from online courses. A total of eight student "withdrawers' were interviewed. Overall, withdrawers showed less self-reliance and less persistence.

Self-reliance and persistence.

The withdrawers from eCore™ courses during the 2003 fall semester faced the same tasks that their counterparts who completed the courses faced. However, these students were unable to overcome obstacles found in web-based education. The comparison to completers offers interesting insight into the mindset of people who withdrew from eCore™.

The data shows that some students were willing to take responsibility for their inability to overcome problems they encountered. One withdrawer simply stated, "My objectives were not clear." A different student mentioned that she was unable to balance the coursework she had registered to take, "I overloaded myself and took too many classes." Yet another withdrawer lamented about the age-old problem of time management, "I did not use time wisely and procrastinated."

Fundamentally, many withdrawers compared their online learning experience to the classroom learning environment. Often, withdrawers felt that the time commitment necessary to succeed in this environment was too much. A typical statement by a withdrawer went something like: "eCore™ was extremely time consuming and more than lecture class." A different student complained that the eCore experience was more difficult than f2f classes, "I had a great teacher but the workload was way too much for an English 101 class."

Class participants not only complained about the time commitment needed for eCore™ in general, but, specifically, the length of assignments. A significant portion of withdrawers spoke about the numerous tasks, "The activities to fulfill course objectives were too numerous." A few students got a little bit more specific with their complaints, "There was way too much reading." Yet another withdrawer complained about the percentage of time spent in participation and the low grade given to that course component.

> Well, I felt like that the grades should have been based a little bit more on participation and effort then they actually were. I think they only gave 10 or 20 percent based on participation, and a lot more on the actual work, and, in certain classes, I don't feel like that was the best way to do the grades because, basically, you are not in the classroom setting. So everything, you are learning it, you know, basically by yourself.

Asynchronous environment and flexibility.

The flexibility that web-based education offers was not something that withdrawers embraced. They often were unable to adjust to this type of learning environment. Almost without exception, these students longed for a more structured classroom setting. A participant who withdrew from eCore™ noted, "I withdrew due to needing in-class connection." Another withdrawer simply stated, "I needed to be in a classroom setting."

The ability to work classes around lifestyle considerations was not appealing to many withdrawers. A few students spoke about time management issues. "I spent too much time worrying about this one course and neglecting other classes." In a similar train of thought, another withdrawer mentioned, "The course work required a lot of time that I really needed to focus on required courses." Yet another student could not make enough progress in completing tasks,

> Well I guess, I was probably in the class for maybe three weeks, probably less than that, and I think I probably spent at least three to four hours a week in it, it seems like, but I just, it seemed like most of the time I was just having to search for what I was looking for, and it took me too long I thought.

The option to schedule course time around life responsibilities, something many completers enjoyed, was lost on withdrawers. The flexibility found in this type of learning was resented by many.

> I spent a great deal of time, there was, quite honestly I am not really fond of E courses, because they are so much more labor intensive. There is a lot of reading, which that part didn't bother me, I don't mind reading at all, although it is a lot more reading than if you were sitting in a lecture hall. … I did spend a lot of time reading and hitting other websites to make sure I understood the content, which didn't help either, because you didn't have any feedback from the instructor. There was nobody that you could ask a question, what does this mean, or can you explain this in a little better detail. I couldn't give you an actual estimate of time, other than it was so much more than I would have in a face to face class.

A general understanding about online courses in higher education was lacking among withdrawers. One student's comments, like others interviewed, showed confusion about the freedom offered in web-based classes with the similar time factors involved with any collegiate course.

> It seems to me when people are doing online work, they want the freedom to say, here is all the things that need to be done this date. And putting specific timelines or guidelines on that otherwise [it] is a bit frustrating to think that most people who are doing online classes are doing them in the evening when they are not working or some other similar situation. And, the e-core classes, I don't know, I guess too much structure on the online courses. I understand for some people who are early on in their college experience, perhaps younger students, they may need that structure in which case they should be in

> the classroom, because I feel that people who are actually taking an online course are doing it with the understanding that they will have more freedom and bull room and can get things done when they have time for them whatever that time is.

Pace and the asynchronous environment.

In comparison to completers, a frequent complaint among withdrawers was the pace of learning in eCore™ classes. The pace of learning did not fit the expectations of these students. "There was not enough time to study adequately for this class." Similarly, one student complained, "There was too much time required to study for this course." It seems that a few students preferred a learning environment where there are lull periods to learning. A withdrawer commented, "There was no let up at midterms like the other instructors did to allow study time."

Students who failed to get started with course assignments at the beginning of the term got behind and these students often withdrew. The problems stemmed from various reasons but led to the same conclusion.

> So any problems I had on WebCT, I just didn't feel like they helped me that much and I'm an A student and I want to have all "A's" and I got pretty stressed when I got behind and then you are behind and then like I said, most of these people who take these classes, most of them have family obligations and full time jobs and that's tough to balance. So I would say that had a lot to do with my decision to drop. I hate to say that it was all their fault, it wasn't, but they had a lot to do with it.

In summary, the pace of online learning was a significant reason students left the courses they started. The pace of learning was just too much for these students.

> I really didn't have any issues. The biggest factor I have, I managed to complete everything, but my biggest factor is that it is much more labor intensive than being face

to face. I spent more time in this course, than I have in any of my face-to-face courses, which really defeated the purpose of me wanting to take this course.

Overcoming problems.

The completers of eCore™ course in the fall of 2003 encountered unforeseen difficulties in the online learning environment. The withdrawers found similar obstacles, but, unlike completers, they were not able to get past these problems. There were various reasons students withdrew from eCore™ in the fall of 2003. Some students mentioned technical problems. "I had some personal issues that I had to deal with that, and my computer crashed and I couldn't get one like I needed to." A different student gave a response common to many withdrawers.

> Just a lot of technical difficulties. I don't know about any other campus, but I know here we have a lot of problems with our computers and stuff like that. I know they say get on one computer or go to one area and use that, but so many students use the computers and systems shut down and stuff like that. It just started to get a little frustrating.

Problems for students who withdrew were similar to the problems faced by the students who completed the courses; however, withdrawers were not able to get past these concerns. Several eCore™ participants griped about resources they were unable to obtain. "The books were not [the] same on campus." A common problem among withdrawers was an inability to contact someone for help. One withdrawer noted, "I did not have anyone to get me familiar with using the system." A different student stated:

> I had to kind of get help from our teacher to try to explain what I needed to do or where I needed to go and I really got frustrated because I was there doing it myself instead of someone like coaching me along and I tried to get the concept after the program or whatever.

In addition, some withdrawers were unable to overcome their displeasure with group work.

> Can I add something? Both classes had a section that ended up not being effective and I ended up dropping but that was a requirement and that was a group project. The group discussions and the group projects I think are really kind of the reason that people kind of take on eCore™ classes to try and avoid those things. I really don't like the idea of group projects because I feel like I put out a lot more work than others do and others get the grade for it. Somebody isn't doing their part is usually what happens and, in an online forum like that, it's even more difficult because you can't be in somebody's face saying "I need your help on this" and it makes people even less responsible for their own use.

Logging in daily and time spent.

In comparison to completers, withdrawers did not like logging on to eCore™ web material on a daily basis. Over half of the students commented on this problems. "The required discussion in [course name] is ridiculous and too much of grade, 30%, and too much time." Clearly, some students were comparing online classes to face-to-face courses. "The instructor expected students to be online everyday as much as possible, no classes are every day." A different student made note of the need to be on line frequently, "I don't think I would have. I missed assignments because I couldn't find them and it seemed like my instructor wanted us to be online, in my opinion, more than we were in our other classes." In essence, students generally took exception to the need to frequently access course materials.

> He, it seemed like he wanted us to be online every day doing something, and being on there for at least an hour a day, and I didn't think that that was fair. When I am in my

other classes, 1 hour and 15 minutes, twice a week, or three times a week, I didn't feel like I should spend more time in there.

Clarity in grades and assessment.

Surprisingly, eCore™ withdrawers expressed few complaints about grades. Most of the students who withdrew did so within the first few weeks of class. They did not complete as many assignments as those who completed the courses; therefore, they did not receive as many grades. A few railed against grades. "The quizzes were ridiculous!!!" Again, one did not like the grades received in the online quiz section of the course. "The computer didn't grade quizzes fairly—even the instructor agreed."

Faculty involvement.

"I withdrew because I could not get adequate answers to questions asked of professor." This was a familiar statement for many withdrawers from eCore™. In addition, another student said:

> I know that I had turned in things, I did complete the first lesson and discussion, and I have never gotten any feedback at all on those, and I needed to make sure that I dropped it before, you know, I had to withdraw with a failing grade, so although I ended up paying for it, I still dropped it because I didn't get any feedback, you know I didn't know, am I doing the right thing, which was the subject of my email. …I am not sure if I am even doing this correctly. Is this how you want things formatted, and never got a response, but no I didn't, even the first grade.

While some withdrawers complained about the lack of any response from professors, other criticized the quality of the responses. One student stated, "I know I sent him one email and he kind of, it was like figure it out yourself pretty much, was the response I got." A different

student said, “Well the only thing that he did was he emailed me back, so and when he, it was timely I guess, it was like a couple of days, but it didn’t really answer my question.” Yet another mentioned the poor quality of responses by her professor:

> There were a couple of papers written in the first class I took and the responses, the grading feedback on those, were effective but not very timely necessarily. You would have two papers in before you got the first one back so you didn’t know if the format you had used was appropriate or not until you had submitted a couple more papers; …in which case those papers were already incorrect in the same way. Otherwise, email was the best way. Like I said before if you had a problem they were generally dismissive that you hadn’t tried anything before you asked the question.

A few students felt intimidated by their instructors. A clear example of this was the comments of a female withdrawer.

> In the discussion, generally discussion forums, he made an effort that if he found people not agreeing, he would kind of jump in and point out the pros and cons. And if he felt that somebody had put in a point that nobody was touching on, he really disagreed with, he would point it out. However, I did not feel welcome to put opposing arguments on there. He would shut them down if he didn’t agree with them.

Not surprisingly, withdrawers were not positive about the promptness of the replies they received from faculty. A common complaint was their inability to contact the instructor at all. “I was never able to talk to my instructor.” A comparable criticism was leveled at another professor.

> I didn’t get any feedback from anybody, including the instructor. I emailed the instructor once and I don’t recall if I ever got it, a response, if I did I wasn’t satisfied with it, and again, I understand that it was the instructor’s first time, but maybe the instructor would

have benefited by sitting with somebody who had previously done one, and say look, this is the way I structure it. This works well, you know, anything, but it just, I did not deal well with not having a schedule put in front of me.

In summary, withdrawers often felt like this woman:

I really don't remember. I think my main question was how do I get to my assignments and I didn't get a response from that. Now I was having difficulty getting into the system, I mean, like I said, my user I.D. and everything, all of that was valid. I didn't have any trouble signing on, and but I mean after I contacted, or after I emailed whoever my instructor was, to you know, to let them know that I couldn't figure out how to get my assignments. I didn't get a response from there

Syllabus and calendar.

A majority of the students who dropped out of eCore™ were not clear where to find information in the web-based learning environment. Numerous students mentioned the fact that they could not find quizzes. "It was unclear when quizzes were due, and it was unclear where quizzes were located." Some students were not satisfied with the calendar component of the course.

Just the way that it was set up, you know. It would have a calendar, but there would be nothing on the calendar to show me when things would be due. So I would go back you know, like not the next day, but the next day I would go back and I would try to go on at least every other day, and it would say that I had missed a quiz, and I didn't understand.

Some students complained about ambiguity in other parts of eCore™.

His course was not like that, everything was open and it was almost as though it was a free for all. You do it on your own time. There were no deadlines, no dates. In some

> instances, because I understand that the course is already built, and it is up to the instructor to modify it to their particular method of teaching, so in many of the assignments there were essays attached to them, which he didn't remove, so you didn't know which essays you had to complete, which discussion question. …There were multiple discussion questions out there; you didn't know which discussion questions you were supposed to address.

A different student noted,

> There just really weren't any, there were no expectations; I mean, I went through the syllabus, hoping there was something there, and it was very general. There really wasn't any deadlines. It wasn't this assignment is due on this date. Occasionally you would see something, even though I withdrew from the class, I still would get emails, and I could still log into that class, and occasionally there would be, and on the calendar itself, it would have some due dates. Like an essay may have been due September 17th, but that was it, that was the only feedback.

Assignments, discussion, and expectations.

Fundamentally, students that left their eCore™ class before completion failed to understand what they needed to do. "The class and all that needed to be done was very hard to figure out and understand." One student was exasperated when she discussed her experience.

> The only assignment that had a date was the very first one. You didn't know what your expectations were, what the instructor's expectations were. I did not know when discussions were due, and actually nobody did and I think there may have, I am not really sure how other people managed within that course.

Yet another withdrawer found fault with assignment expectations in general and online discussion tasks specifically. A significant number of withdrawers felt the same way.

> There, well, they were very vague, very general, essentially it was you will have to participate in discussions. You will have a midterm and a final, and you will have quizzes, and that is essentially it, there wasn't, you have to have, as within the other course, you have to have a minimum of three posts per discussion. You have to not only reply, but, or write a post, you will need to reply to others, you will need to reply back to those who replied to you, so it really wasn't any of that. It was just very general. You have to participate was essentially all that it said.

Rhythm and flow.

With respect to eCore™ withdrawers, by and large the students did not get into a rhythm or flow like their counterparts that completed their classes. There were a variety of reasons expressed for this phenomenon. "I did not feel like I was learning but rather cramming to complete assignments." The beginning of the term, especially the first two weeks, seemed to be a crucial time for many students. "The course got off to a real rough start." A different student noted,

> It made more sense kind of to talk to other people, but in, see the thing is, I dropped my class early, kind of early on because it seemed like not only me, that a lot of other people really didn't know what was going on.

A few students who withdrew felt the orientation phase of the course could be improved.

> I guess it would have went a little bit better for me if I had of got that dry run taking a web class, like going in all the different type of sections and doing attachments and stuff like that, just breaking it down so that you can understand it.

Another student expressed similar feelings, “Lack of information maybe, like I said, you know, a mandatory orientation type thing would be beneficial.”

Weekly lessons.

A few students commented on the lack of weekly modules featured in some eCore™ courses.

> Well, with certain classes, they went a little too fast. I didn’t have a chance to actually grasp the materials before they moved on, which caused a little delay because I had to go back and try to figure out, you know, how to do step one, before I could move on to step two, etc. So some classes were a lot faster than others, especially the classes that you really had to learn, you know, a, b, and c, before you could do anything else**.**

Additionally, one withdrawer noticed,

> It was let’s see, it was pretty fast paced, I think because I got behind in the beginning I felt like I wasn’t learning, I felt like I was cramming rather than learning and I think that is why most people take these classes, because I have a family and I have other responsibilities and I have other responsibilities. It was hard, it wasn’t easier than going to class, that’s for sure.

Summary

This study was designed to gather data from students about their perceptions of online learning. There was no effort made to distinguish between the types of courses taken by withdrawers and completers. The sixteen students contacted for phone interviewed took ten different eCore courses. There were only three courses that were taken by withdrawers and completers alike. It is unquestionable that withdrawers and completers had different online experiences.

It is interesting to note that ten out of the eleven questions about "Course Design" (Appendix J) found in the questionnaire showed significance between withdrawers and completers. These findings confirm what the withdrawers stated during interviews. In general, withdrawers had difficulty accessing the course materials.

The remaining twenty-two questions in the questionnaire were designed around *Applying the Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1991). Only nine out of these twenty-two questions showed statistical significance between withdrawers and completers. Out of the these nine questions, five of the questions were found under two categories, "Prompt Feedback" and "Time on Task." These findings are confirmed in the student interviews. In particular, withdrawers noted that they did not receive prompt feedback and complained about the amount of time required to complete online course tasks. The questionnaire and interview data differ in one theme. The questionnaires found no questions statistically significant under the category "Faculty to Student Contact" while the interviews clearly showed that students yearned for more feedback from instructors.

CHAPTER 5

OVERVIEW OF FINDINGS AND RECOMMENDATIONS FOR FURTHER STUDY

According to the U.S. General Accounting Office (2002), there has been an exponential growth in the number of collegiate courses offered in the online environment over the past decade (http://www.gao.gov/new.items/d021125t.pdf). While the recent growth of online courses has been extraordinary, the dropout rate in these courses has been higher than in comparable in-class courses (Carr, 2000). Researchers and administrators are trying to understand the reasons behind these higher dropout rates for online courses compared to in-class courses.

The research population for this study was students who were enrolled in eCore™ courses during the fall semester of 2003. This study compared the perceptions of students that withdrew from the online learning environment to those that remained in the course to completion. This study used a mixed method approach to ascertain perceptions from withdrawers and completers about their online experience. 101 students (52 withdrawers and 49 completers) returned completed and useable questionnaires. Out of this student population, some agreed that they would discuss their experience with the web-based learning environment through an interview. Sixteen students (eight withdrawers and eight completers) agreed to be interviewed for this research project.

There are two questions to be answered by this research. First, why do students withdraw from online courses? Specifically, what are the instructional reasons that students report for withdrawing from online courses? Second, what are the instructional and course-related strategies that may encourage students to remain in online courses?

This study found that completers were able to work effectively in the online learning environment and overcome technical issues that arose in the web-based learning environment. In contrast, those students who withdrew from online classes stated that they did so because they could not adapt to the expectations of online learning, and they became quickly frustrated with technical problems. Instructional design problems indicated by course withdrawers were: confusing course layout, unclear deadlines, inability to access course components, and uncertainty about course goals, and how course assignments related to course objectives. The completers in this study were less likely to perceive these problems as obstacles.

Student Reasons for Withdrawing

Several issues arose from the findings of this study. One topic that deserves further exploration is the desire for students to feel a consistent flow, or pattern, throughout the semester. Many of the comments from the students who complete the online courses reported a good flow to their work and feedback. The students who withdrew predominately stated that they felt a lack of this rhythm. A number of students indicated that they had more trouble receiving feedback from the professors at the end of the semester.

In this study, 44% of the students who withdrew did so within the first two weeks of the semester. This finding points to the need for more research on why this is so. There is some basis for concluding that the period of time from course registration to the first few weeks into the term are especially critical for students who decide whether to stay or drop out of an online course. This study's findings suggest some potential solutions for getting students to stay enrolled in online courses. The notion that a comprehensive orientation is important for online learners remains tenable. A significant number of students indicated in the questionnaire and during telephone interviews a sense of confusion during the start of the semester.

The student perspectives uncovered during this study support previous research about reducing student confusion at the beginning of the term. In light of the higher rate of student drop out in online courses, improving clarity for each student seems a worthwhile pursuit. The findings in this study underscore the plausibility of measures mentioned in other studies to reduce confusion at the start of each term (Miller, 2003). One suggestion is to have faculty send an introductory letter or e-mail to each student registering for online class. While the correspondence can be a "form" letter prepared well before the term begins, it can provide necessary information to the student.

Inspection of the data indicates that adapting quickly to courses in the online environment is important in student retention. It should be noted that there are steps that can mitigate confusion at the start of a class. The data in this study points to numerous students complaining about technical difficulties early in the term as a reason they withdrew from online classes. A few students who had taken online courses not affiliated with the University System of Georgia commented on the availability of technical support staff at other institutions. The addition of extra technical support staff, especially during the first few weeks of a semester, might reduce student dropout. The strategy to improve student retention deserves more research. The research also indicates that students who withdraw from a course are unclear about course expectations. The findings of earlier studies appear to be in general agreement with the findings of this study; namely, that developing a curriculum that is highly structured at the beginning of the term is important to student understanding of their academic responsibilities.

One key component in almost all online education is the role of discussion forums, or chat rooms. Unlike many face-to-face classes, online classes often grade student participation in discussion sessions. A typical requirement for online courses is two to three responses for each

student per topic. Numerous students in this study indicated dissatisfaction with the discussion portion of their courses. The results of this study were consistent with previous research that suggests strategies to improve online discussion (Hew & Cheung, 2002; Fredericksen et al., 2000). Instructors should take some type of active role in the discussions to encourage responses that show deeper thought and reflect on course materials, thereby reducing discussions based simply on student opinions. Ideas that have been tried that show promise in fostering better discussion include student led sessions with each student taking a turn as discussion moderator and creating various student roles within each discussion group. A potential problem that remains is that some students feel intimidated in the discussion groups due to their inability to grasp the course material or their lack of preparation.

Instructional Strategies for Retention

In view of the close connection between student confusion and withdrawing from the online environment, one method to improve student retention might consider a voluntary program where online course "veterans" provide assistance to students who are new to the web-based education. This is especially important in the weeks just prior to the beginning of the class and just after the class begins. Since there are more and more "veteran" online course participants each term, this concept seems to merit further exploration.

Given the evidence found in literature and in this study about the role that early success plays in retaining students in online courses, there are a number of strategies that can be utilized to improve retention rates (Campos et al., 2001; Hew & Cheung, 2002; Fredericksen et al., 2000; Tiene, 2000). These strategies can improve student self-reliance and help students get into a rhythm that appears to be crucial for success in online education. Research suggests that students should be provided the opportunity to self-test during the first week of class. The first test should

be a non-graded exercise that will allow the student to assess their level of preparedness for the course and their readiness for the online environment. The non-graded test would be especially important for students who do not do well on the exercise, as it will hopefully encourage them to seek out help early in the term.

In view of the close connection between early success and student retention, one idea found in previous studies seems rife for future research (Campos et al., 2001; Hew & Cheung, 2002; Fredericksen et al., 2000; Tiene, 2000). This study, along with other research, indicates that some students prefer face-to-face classes. A novel approach to this problem would be to offer students an opportunity to transfer into a physical classroom if they are not comfortable with the virtual classroom environment. This suggestion, of course, is affected by the rules, regulations, and timelines of participating institutions and their online counterparts.

The concept of instructional design has been linked to student understanding of their role within online education. The ultimate effect of well-designed online components is an increase in student satisfaction with the course. It is important for navigational tools to be consistent from one page to the next. It is important to consider a limitation of long documents within course material to no more than four to five screens. It is evident that long delays in accessing material are frustrating to students. Instructional designers of web-based course should endeavor to avoid cognitive distance, the "energy" to get to a new destination (Nielsen, 1990). This means that websites should ideally have a delay that is no more than one-half second. Delays of more than a few seconds should trigger a notification of time remaining or percentage left to access new material online. Data in this study suggests that students that experience excessive delays in accessing online modules become easily frustrated. The notion of delay in accessing material in online course and student retention needs more research.

Designers of web-based education must not only concern themselves with technical problems the learner might encounter, but also with the larger philosophical issues regarding content. While there are a number of philosophical views on how students obtain knowledge, two views dominate the literature. They are the constructivist and objectivist/traditional design models Moallem (2001). The underlying philosophical views of traditional and constructivist models are objectivist and constructivist theories of knowledge. Objectivists believe that knowledge and truth exist outside the mind of the individual and are, therefore, objective. Learners may be told about the world and be expected to replicate its content and structure in their thinking (Jonassen, 1991). An instructional developer who uses traditional design models analyzes the conditions that impact the instructional system (such as content, the learner, and the instructional setting) in preparation for achieving the intended learning outcomes.

Constructivists, on the other hand, believe that knowledge and truth are constructed by the learner and do not exist outside of his/her mind (Duffy & Jonassen, 1992). Therefore, according to constructivists, learners construct their own knowledge by actively participating in the learning process. Constructivist instructional developers value collaboration, learner autonomy, generativity, reflectivity, and active engagement (Moallem, 2001). The major implications of these viewpoints is that course material designed with constructivist theory are good for problem-solving and application of multiple principles, while material designed with objectivist/traditional theory are effective for learning new concepts and principles. The complexities involved in philosophical design theories and the student's desire to remain or withdraw from online education certainly need further investigation.

The largest proportion of studies provides strategies for reducing student withdrawal at the beginning of a term through well-designed material that is clear to most students

(Fredericksen et al., 2000; Janicki & Liegle, 2001; Storey et al., 2002). This study, while focused primarily on withdrawers and completers did uncover some data suggesting that more research is needed to study problems encountered at the end of a course. Some students in this study indicated that communication at the end of the course was curtailed; consequently, it is important to encourage instructors to maintain communication with students via e-mail or discussion throughout the entire term.

Limitations

The limitations of this study did not address a number of factors that might influence student withdrawal from online courses. Research implies that students in the 36-45 year old age group learn the most from online classes while 16-25 year olds learn the least. The ages of the students in this study were not known. This study did not explore the withdrawal rates of students who took an online course because they could not get into a comparable face-to-face course. Some research implies that students 'forced' to take online classes were less satisfied than other students in the class. This study also did not look at the withdrawal rates of traditional aged student that take an online course while living on-campus compared to students living away from a campus environment. A new area of inquiry into course material that is considered authentic or tied to real-life context tasks versus traditional academic tasks may provide insights into strategies that with help retain students.

The timing of this study encountered an unexpected finding. The fall of 2003 was the first semester that eCore™ utilized the WebCT Vista software platform. This fact was unknown to the researcher. A number of students contacted during telephone interviews, even students with previous online course experience, indicated problems using WebCT Vista software. Given the

importance of establishing a sense of belonging for each student online, further research into incorporation of new computer software seems warranted.

In conclusion, application of *Applying the Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1991) to distance education was a useful guide to this research. The results of this study confirm previous research that instructional design issues create difficulty for some students who enroll in online courses (Fredericksen et al., 2000; Janicki & Liegle, 2001; Storey et al., 2002). This study provides insights into the experiences of student withdrawers from web-based courses compared to students who complete similar online courses. The ability to compare and contrast these experiences can help educators design online courses and supporting structures that may reduce student dropout.

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APPENDIX A

QUESTIONNAIRE

Student Perceptions of eCore™Courses and Faculty

The purpose of this survey is to learn more about student perceptions of eCore™ courses and faculty. Results from this survey may be used to improve course design and to improve student retention in online courses. Please provide your opinion on the following statements about faculty-student interaction, student to student interaction, feedback, assign-ments, expectations, technical skills, structure and content in this course. Please ✔ the appropriate box.

SA= Strongly Agree A= Agree N= No Opinion D= Disagree SD= Strongly Disagree

Faculty to Student Contact	**SA**	**A**	**N**	**D**	**SD**
The instructor provided clear expectations for response time.	❍	❍	❍	❍	❍
I was able to contact and get a response from instructor during stated times he/she was available.	❍	❍	❍	❍	❍
The instructor's replies to my questions were adequate.	❍	❍	❍	❍	❍
The instructor encouraged me to contact him/her.	❍	❍	❍	❍	❍

Student to Student Contact	**SA**	**A**	**N**	**D**	**SD**
Participation in discussion with other students was expected.	❍	❍	❍	❍	❍
Discussions with other students added to my understanding of course materials.	❍	❍	❍	❍	❍
Instructor feedback on discussions added to my understanding of course materials.	❍	❍	❍	❍	❍

Active Learning	**SA**	**A**	**N**	**D**	**SD**
The instructor provided well-designed learning projects that added to my understanding of course materials.	❍	❍	❍	❍	❍
The course was designed to provide opportunity to practice concepts learned in class.	❍	❍	❍	❍	❍

Prompt Feedback	**SA**	**A**	**N**	**D**	**SD**
The instructor acknowledged my e-mails/discussion posts in a timely manner.	❍	❍	❍	❍	❍

The instructor provided feedback on graded assignments and quizzes in a timely manner.	❍	❍	❍	❍	❍
The instructor's feedback helped me better understand course material.	❍	❍	❍	❍	❍

Time on Task	**SA**	**A**	**N**	**D**	**SD**
The amount of time necessary to succeed in this course was clearly communicated.	❍	❍	❍	❍	❍
Dates for exams/quizzes were clearly communicated.	❍	❍	❍	❍	❍
Pace of course assignments and discussions effected my ability to understand course materials.	❍	❍	❍	❍	❍

High Expectations	**SA**	**A**	**N**	**D**	**SD**
The instructor provided examples of good work.	❍	❍	❍	❍	❍
Expectations for course grades were clear.	❍	❍	❍	❍	❍
Standards for course participation were clear.	❍	❍	❍	❍	❍
There were clear guidelines for the quality expected in discussion participation.	❍	❍	❍	❍	❍

Diverse Talents	**SA**	**A**	**N**	**D**	**SD**
The instuctor encouraged students to express opinions and thoughts.	❍	❍	❍	❍	❍
The instructor encouraged students to respect the perspectives of others.	❍	❍	❍	❍	❍
The instructor encouraged students to pursue ideas of interest to them.	❍	❍	❍	❍	❍

Online Experience	**SA**	**A**	**N**	**D**	**SD**
The computer I primarily used was adequate for my participation in the course.	❍	❍	❍	❍	❍
The Internet connection I used allowed me to participate adequately in the course.	❍	❍	❍	❍	❍
My technical abilities were adequate to participate in this course.	❍	❍	❍	❍	❍
Learning to use e-mail and discussion tools was not difficult.	❍	❍	❍	❍	❍

Course Structure Technical	**SA**	**A**	**N**	**D**	**SD**
I found the course layout easy to navigate.	❍	❍	❍	❍	❍
The instructor provided specific assignment deadlines.	❍	❍	❍	❍	❍

Course components [tools, lessons, quizzes] were easy to find.	❍	❍	❍	❍	❍
Links to supplementary web sites were active generally.	❍	❍	❍	❍	❍
Additional software/plug-ins [Flash, MathML, Acrobat] was easy to install.	❍	❍	❍	❍	❍

Course Structure Content	**SA**	**A**	**N**	**D**	**SD**
The course goals and objectives were clear.	❍	❍	❍	❍	❍
The activities and assignments were closely aligned with course goals.	❍	❍	❍	❍	❍

Is this the first online course you have taken?

❍ Yes ❍ No

List the three main reasons you withdrew or completed this online course.

1. _____
2. _____
3. _____

Would you be willing to discuss your experience with eCore™ online course(s)?

❍ Yes ❍ No

If Yes, please take a few minutes to fill out the Contact Information below and the Consent Form that is in this packet.

Name: _____

E-mail: _____

Address: _____

City/State/Zip: _____

Phone: _____

➔ **Please return the completed survey and consent form to [*you will find a prepaid envelope enclosed*]:**

David G. Boop
Institute of Higher Education
Meigs Hall
The University of Georgia
Athens, GA 30602-6772
Fax: 706-542-7588

➔ **Please remember to sign the Consent Form.**

Thanks for your time!

APPENDIX B

INTERVIEW QUESTIONS

Student Interview Questions
Based on the Seven Principles of Effective Teaching: A Practical Lens for Evaluating Online Courses [ed. 5/6/03]

1-Good Practice Encourages Student-Faculty Contact

What steps did the instructor take that allowed you to get to know him/her?
Describe the type of e-mail responses you received from your instructor to questions you posed to him/her.

2-Good Practice Encourages Cooperation Among Students

How valuable was the interaction between students to gain an understanding of course assignments?
What steps were taken to ensure you participated with other students in the course?

3-Good Practice Encourages Active Learning

Describe any situations you encountered using WebCT that kept you from completing course objectives.
In what ways did the course allow you the opportunity to practice concepts learned through the online assignments?

4-Good Practice Gives Prompt Feedback

Which methods of communication employed by the instructor were effective and timely at providing you feedback?
Do you feel the instructor returned graded assignments in a timely fashion? Why or why not?

5-Good Practice Emphasizes Time on Task

How did the instructor communicate assignment expectations and deadlines?
How much time to you estimate you spent on this course and in what ways?
How did the pace of course assignments affect you ability to understand course materials?

6-Good Practice Communicates High Expectations

Outline the expectations for course grades and participation.
Indicate the methods used to point out the difference between acceptable and outstanding student work.

7-Good Practice Respects Diverse Talents and Ways of Learning

How did the instructor encourage students express their opinions and to respect the views of others?

How did the instructor encourage students to pursue ideas that interested them?

8-What do you perceive as your primary reasons for completing the course?

APPENDIX C

CONSENT FORM

Institute of Higher Education

Consent Form

I _____, agree to take part in a research study titled "Undergraduate Student Perspectives on Introductory Online Courses" which is being conducted by David G. Boop, Institute of Higher Education at 706-542-5018 under the direction of Dr. Libby Morris, Institute of Higher Education at 706-542-3464. I do not have to take part in this study; I can stop taking part at any time without giving any reason, and without penalty. I can ask to have information related to me returned to me, removed from the research records, or destroyed.

The purpose of the study is twofold. First, discern further the factors students report for dropping out or completing distance education courses due to instructional purposes. Second, to identify instruction and other course-related strategies that encourage students to remain in distance education courses.

I will not benefit directly from this research. However, my participation in this research may lead to information that could improve the delivery of distance education courses.

If I volunteer to take part in this study, I will be asked to do the following things:

1) Answer questions about my decision to withdraw from or remain in an online course that will take 30-45 minutes.

I will be contacted via the telephone to set up a mutually agreeable time to answer questions about my experience with web-based classes. When the researcher contacts me initially, he will explain the survey process further.

No discomforts or stresses are expected. No risks are expected.

All information concerning me will be kept confidential. If information about me is published, it will be written in a way that I cannot be recognized. The results of this participation will be confidential, and will not be released in any individually identifiable form without my prior consent, unless otherwise required by law. Following completion of this study, all audio tapes and questionnaires will be destroyed.

The researcher will attempt to conduct as many face to face interviews with students as possible. However, some interviews may be conducted over the telephone due to time and distance factors associated with the study. The researcher will contact all interview participants by telephone to set up a convenient time to conduct the interview. A student that has been selected to take part in an interview via the telephone will be given the opportunity to have the interview conducted during the initial call or the researcher will set up a convenient subsequent time.

The researcher will answer any further questions about the research, now or during the course of the project, and can be reached by telephone at 706-542-5018.

My signature below indicates that all of my questions have been answered to my satisfaction and that I consent to volunteer for this study. I have been given a copy of this form.

_____

Signature of Researcher, Date

Phone: 706-542-5018 E-mail: dboop@uga.edu

_____

Signature of Participant, Date

For questions or problems about your rights please call or write: Chris A. Joseph, Ph.D., Human Subjects Office, University of Georgia, 606A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; Address IRB@uga.edu

APPENDIX D

MAILING SCHEDULE

Mailing Schedule for Withdrawers and Completers

Withdrawers

Group A initially sent 9/9/03
list contained 60 entries printed 53 labels received 15 surveys

Group B initially sent 9/17/03
list contained 61 entries printed 52 labels received 18 surveys

Group C initially sent 9/24/03
list contained 33 entries printed 28 labels received 8 surveys

Group D initially sent 10/1/03
list contained 32 entries printed 26 labels received 4 surveys

Group E initially sent 10/8/03
list contained 63 entries printed 50 labels received 11 surveys

Group F initially sent 10/15/03 [*moved 1 into completer category]
list contained 29 entries printed 21 labels received 3 surveys*

Second Mailing—November

230 labels [surveys] sent—59 received [58 withdrawers/1 moved to completer]

Completers

list contained 728 entries # of people after repeats removed=552

surveys sent [every other person]=275

received 52 surveys* [*51 completers/1 moved into category from withdrawers]

APPENDIX E

REMINDER POSTCARD

REMINDER!!!!

If you haven't already done so, please complete the eCore survey sent to you recently.

If you have lost the survey or have any questions, please contact David G. Boop at 706-542-5018 or dboop@uga.edu

Thank you for your participation!

APPENDIX F

COURSES/WITHDRAW DATES OF INTERVIEWED STUDENTS

Courses Taken by Interviewed Students

			Withdrawers	
Subject	**Course Prefix**	**Course Number**	**Course Title**	**Date Withdrew**
A011	**COMM**	**1100**	**Human Communications**	**06-Sep-03**
A032	**HIST**	**2111**	**U.S. History I**	**08-Sep-03**
B014	**ISCI**	**1121**	**Integrated Science I**	**15-Sep-03**
B029	**PHIL**	**1001**	**Intro to Philosophy**	**12-Sep-03**
B053	**MATH**	**1101**	**Modeling**	**11-Sep-03**
B054	**HIST**	**2111**	**U.S. History I**	**16-Sep-03**
C001	**POLS**	**1101**	**American Government**	**18-Sep-03**
C008	**POLS**	**1101**	**American Government**	**21-Sep-03**
			Completers	
Subject	**Course Prefix**	**Course Number**		**Date Withdrew**
F021	**MATH**	**1401**	**Intro to Statistics**	**n/a**
X010	**ENGL**	**1102**	**English Composition II**	**n/a**
X020	**MATH**	**1101**	**Modeling**	**n/a**
X054	**HIST**	**2111**	**U.S. History I**	**n/a**
X088	**POLS**	**1101**	**American Government**	**n/a**
X149	**GEOL**	**1011K**	**Intro Geosciences I**	**n/a**
X161	**ENGL**	**2132**	**American Literature II**	**n/a**
X175	**ENGL**	**1102**	**English Composition II**	**n/a**

APPENDIX G

EARLY V. LATE WITHDRAWERS

Early versus Late Withdrawers

Key Information Regarding Fall 2003 eCore Schedule
-Classes Began—August 18
-Midpoint—October 6
-Classes End—November 20
-Finals—November 21, 24, 25

Early Withdrawers [N=30]

Group A initially sent 9/9/03
list contained 60 entries printed 53 labels
received 15 surveys complete surveys=13

Group B initially sent 9/17/03
list contained 61 entries printed 52 labels
received 18 surveys complete surveys=17

Late Withdrawers [N=22]

Group C initially sent 9/24/03
list contained 33 entries printed 28 labels
received 8 surveys complete surveys=7

Group D initially sent 10/1/03
list contained 32 entries printed 26 labels
received 4 surveys complete surveys=4

Group E initially sent 10/8/03
list contained 63 entries printed 50 labels
received 11 surveys complete surveys=9

*Group F initially sent 10/15/03 [*moved 1 into completer category]*
list contained 29 entries printed 21 labels
received 3 surveys complete surveys=2*

Second Mailing—November

230 labels [surveys] sent—59 received [58 withdrawers/1 moved to completer]

APPENDIX H

ONLINE EXPERIENCE: COMPLETERS V. WITHDRAWERS

Questionaire—First Online Course [Completers vs. Withdrawers]

Is this the first online course you have taken?

Withdrawers (n=52)		**Completers (n=49)**	
Yes	**No**	**Yes**	**No**
35	**17**	**28**	**21**
67%	**33%**	**57%**	**43%**

APPENDIX I

ONLINE EXPERIENCE: EARLY V. LATE WITHDRAWERS

Questionaire—First Online Course
[Early Withdrawers vs. Late Withdrawers]

Is this the first online course you have taken?

Early Withdrawers (n=30)		**Late Withdrawers (n=22)**	
Yes	**No**	**Yes**	**No**
20	**10**	**15**	**7**
67%	**33%**	**68%**	**32%**

APPENDIX J

STUDENT PERCEPTIONS OF ONLINE EDUCATION: COMPLETERS V. WITHDRAWERS

Student Perceptions of Online Education (Completers and Withdrawers)

	Completers (N=49)		Withdrawers (N=52)		
Question	Mean	SD	Mean	SD	t
Discussions with other students added to my understanding of course material.	3.41	1.619	2.33	1.779	3.197*
The instructor provided well-designed learning projects that added to my understanding of course materials.	3.47	1.487	2.50	1.732	3.023*
The course was designed to provide opportunity to practice concepts learned in class.	3.41	1.606	2.17	1.948	3.485*
The instructor provided feedback on graded assignments and quizzes in a timely manner.	3.10	1.747	2.23	1.875	2.418*
The instructor's feedback helped me better understand course materials.	2.88	1.867	2.08	1.813	2.184*
The amount of time necessary to succeed in this course was clearly communicated.	3.65	1.614	2.96	1.692	2.102*
Dates for exams/quizzes were clearly communicated.	4.06	1.215	3.19	1.738	2.926*
Pace of course assignments and discussion affected my ability to understand course materials.	3.39	1.835	2.62	1.932	2.061*
The instructor encouraged students to express opinions and thoughts.	3.96	1.513	3.15	1.944	2.330*
The computer I primarily used was adequate for my participation in the course.	4.37	1.014	3.79	1.576	2.208*
The Internet connection I used allowed me to participate adequately in the course.	4.43	.791	3.54	1.590	3.593*
My technical abilities were adequate to participate in this course.	4.49	.617	3.67	1.665	3.304*
Learning to use e-mail and discussion tools was not difficult.	4.43	.707	3.52	1.578	3.773*
I found the course layout easy to navigate.	3.63	1.349	2.42	1.576	4.151*
The instructor provided specific assignment deadlines	4.04	1.338	3.38	1.705	2.158*
Course components [tools, lessons, quizzes] were easy to find.	3.63	1.410	2.77	1.604	2.877*
Links to supplementary web sites were active generally.	3.18	1.740	2.13	1.981	2.832*
The course goals and objectives were clear.	4.18	.808	2.92	1.856	4.469*
The activities and assignments were closely aligned with course goals	3.69	1.461	2.65	1.929	3.066*

***p< .05**

APPENDIX K

12-STEP DEVELOPMENTAL RESEARCH SEQUENCE

12. Writing the ethnography

↑

11. Discovering cultural themes

↑

10. Making a componential analysis

↑

9. Asking contrast questions

↑

8. Making a taxonomic analysis

↑

7. Asking structural questions

↑

6. Making a domain analysis

↑

5. Analyzing ethnographic interviews

↑

4. Asking descriptive questions

↑

3. Making an ethnographic record

↑

2. Interviewing an informant

↑

1. Locating and informant

The D.R.S. steps begin with a wide focus, then with Step 7 begin to narrow for intensive investigation of a few selected domains