SELF-DIRECTED LEARNING AND PERSISTENCE

IN ONLINE ASYNCHRONOUS UNDERGRADUATE PROGRAMS

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ABSTRACT

The retention literature concerning online education suggests a dropout crisis among most institutions offering online courses and programs. Despite the fact that online courses and programs are making it easier than ever before for students to have access to college education, students are dropping out of online classes at a much faster pace than the traditional brick and mortar or on-ground classes. It would benefit these institutions to understand why students are not finishing their courses in an effort to improve persistence and therefore retention in online education. Furthermore, to increase program retention in online education, it is important to determine what factors are related to course completion and non-completion so that at-risk students can be identified and offered support services.

The characteristic of self-direction is an important concept in understanding student readiness for online education. The purpose of this study was to analyze the difference in self-direction, as measured by the Oddi Continuing Learning Inventory (OCLI), between students who persist and those who don't persist in an undergraduate online asynchronous program. The data were gathered from undergraduate students at a four-year baccalaureate degree-granting college that has both an online campus and on-ground campuses across the United States.

Although self-directed learning as measured by the total score on the OCLI was not statistically significant, the foundation was laid in this study for important future research. GPA and how the student connects to the internet from home were statistically significant. Further research is needed to ascertain (1) whether self-direction is in fact related to persistence in online programs and (2) what other variables are related to student persistence. Institutions may be able to implement some mechanisms within the online course with the intention of increasing student persistence and therefore retention in asynchronous online programs.

DEDICATION

   To my aunt Marianne King and my mentor Dr. Janet Jalloul--you both taught me the importance of being a great teacher and a lifelong learner. I wouldn't be where I am today without your influence and inspiration.

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CHAPTER 1
INTRODUCTION

Since its inception, distance education, which began as the correspondence course conducted via the mail after the development of the postal service in the 19th century, has become a major facet of higher education (Burbules & Callister, 2000; Phipps & Merisotis, 1999). In fact, today technologically-mediated distance education has become a popular and flourishing mode of delivering instruction (Wilkins, 2004). One type of this technologically-mediated distance education, online internet-based education, has proliferated so extensively that it is now represented at most institutions of higher learning in the United States (National Center for Education Statistics, 2008) .

The convenience afforded through online course offerings is not the only reason for their proliferation. According to Paulsen and Smart (2001), an economic benefit exists to colleges' online programs---more students and different types of students can be reached and typically at a lower cost.

The retention literature concerning online education suggests a dropout crisis among most institutions offering online courses and programs. One researcher in the field, Kemp (2002), observed that student attrition is an ongoing issue facing online education. In fact, several other researchers (Bauman, 2002; Burbules & Callister, 2000; Carr, 2000; Lorenzetti, 2002; Muse, 2003; Phelps, Wells, Ashworth, & Hahn, 1991; Phipps & Merisotis, 1999) asserted that students are dropping out of online classes at a much faster pace than the traditional brick and mortar or on-ground classes.

Additionally, the upfront cost of setting up the online infrastructure and the ongoing cost of maintaining and improving this infrastructure cannot be made up if students are dropping at a high rate from online programs. It would therefore benefit these institutions to understand why students are not finishing their courses and programs in an attempt to improve retention in online education. Furthermore, if institutions want to increase retention in online education, it is important to determine what factors are related to persistence so that at-risk students can be identified and offered support services.

Online Education

　　Distance education is not a new idea. Since its inception in the 1700s, educators have been reaching out to students over a distance when there are students who cannot or will not come to a higher education campus (Burbules & Callister, 2000). The Internet has made it even easier for institutions of higher education to become even more flexible with the way they deliver content so as to reach as many students as possible. One of the appeals of asynchronous online courses is that learners can access materials, participate in discussions, complete assignments, review content and lectures, and take tests according to their own schedule (Burbules & Callister, 2000). They also concluded that "what is lost to them in terms of spontaneity and face-to-face interaction may be, for them, more than compensated for the convenience (and perhaps lower cost) of such course offerings" (p. 275).

Statistics Concerning Online Education

　　Online education is one of the many types and the most popular type of technology-mediated distance education. In fact, there are four types of distance education used most by higher education institutions: two-way interactive video, one-way prerecorded video, two-way audio/one-way video and computer-mediated learning, which is also used synonymously with online asynchronous learning (Phipps & Merisotis, 1999).

　　Comprehensive nationwide statistics on degree-granting institutions that offer online education were released by the National Center for Education Statistics (2008) . According to this report, 66% of all 2-year and 4-year Title IV eligible, degree granting postsecondary institutions offered for credit, college level distance education courses in the 2006-07 academic year (National Center for Education Statistics, 2008). The institutions offering distance education reported an estimated 12.2 million enrollments in distance education courses. Of these enrollments, 77% were in online courses; asynchronous Internet-based technologies were cited as the most widely used technology for the instructional delivery of these courses (National Center for Education Statistics, 2008). Approximately 80% of the online college student population are studying at the undergraduate level (Allen & Seaman, 2008). Because the majority of online classes are offered at the undergraduate level and the majority of those are in asynchronous classes, these are important areas for study.

　　Another recent comprehensive report with nationwide statistics concerning student enrollment in online education, *Staying the Course: Online Education in the United States, 2008*,

placed enrollment numbers at 3.9 million students in the fall of 2007, which was an increase of 12.9% over the previous year (Allen & Seaman, 2008) (See Table 1.1). In fact, the authors (Allen & Seaman, 2006; Allen & Seaman, 2008) insisted that, "For the past several years, online enrollments have been growing substantially faster than the overall higher education student body" (p. 1). The growth of online students from the fall of 2002 to the fall of 2007 represents a 19.7% compound annual growth rate whereas the overall higher education student body grew at an annual rate of 1.6% during the same time period (Allen & Seaman, 2004). Clearly, the rate of online education used in institutions of higher education is growing and represents an increasing percent of enrollments on college campuses. Based on Burbules and Callister's (2000) assertion about the added convenience of online courses as well as the consistent increases in numbers of institutions offering online courses and students enrolling in online courses, it can be ascertained that there is a place, and probably a permanent one, for online learning in higher education.

Table 1.1 Numbers of Online Students in the U.S. from 2002 to 2007[a]

Year	Number of Online Students	Growth Rate from Previous Year	Online Enrollment as a Percent of Total Enrollment
2002	1.6 million	NA	9.6%
2003	1.9 million	23.0%	11.7%
2004	2.3 million	18.2%	13.5%
2005	3.2 million	36.5%	18.2%
2006	3.5 million	9.7%	19.6%
2007	3.9 million	12.9%	21.9%

[a] Based on Allen & Seaman (2008).

Online Retention

According to Frankola (2005), there are no national statistics concerning attrition rates of online learners. Moore, Bartkovich, Fetzner and Ison (2008) asserted that "few empirical studies exist in the available literature" (p. 107). This is most likely due to the fact that colleges measure attrition and retention rate in different ways. However, Carr (2000) asserted, "Anecdotal evidence and studies by individual institutions suggest that course-completion and program-

retention rates are generally lower in distance-education courses than in their face-to-face counterparts" (p.1). Furthermore, Carr (2000) reported a variation in course completion rates of between 80% to less than 50%, depending on the institution. She also reported from her interviews with many college administrators that retention in on-ground courses tends to be 10-20% higher than in online courses.

This leads one to question why some students are persisting while others are dropping out. While there are many definitions of persistence, Rovai's (2002a) has the most relevance to this study; persistence is "the behavior of continuing action despite the presence of obstacles" (Rovai, 2002a, p.1). More specifically for the purposes of the study, persistence is equivalent to continuing one's studies in an online program term after term. There have been some case studies (Carr, 2000; Fjortoft, 1995; Kember, 1989; Parker, 1999) on the factors leading to persistence and lack of persistence in online courses. These studies assert that there are several characteristics that may be related to a student's persistence in an online course. Morris, Wu, and Finnegan (2005) in their literature review on persistence highlighted several studies related to learner characteristics. These characteristics include age (Carr, 2000), gender and educational background (Nesler, 1999), academic and social integration (Kember, 1989), locus of control and source of financial assistance (Parker, 1999), and intrinsic motivation (Fjortoft, 1995). The studies do not agree on the most important factors or even one set of factors, nor could I identify any studies that focus in on one particularly important factor.

Other Related Studies

Several studies (Aragon & Johnson, 2008; DeTure, 2004; Dupin-Bryant, 2004; Fjortoft, 1995; Kemp, 2002; Lim, 2001; Moore et al., 2008; Morris, Finnegan, & Wu, 2005; Morris, Wu et al., 2005; Muse, 2003; Nesler, 1999; Osborn, 2001; Pachnowski & Jurczyk, 2000; Parker, 1999; Powell, Conway, & Ross, 1990; Richards & Ridley, 1997; Rovai, 2002b; Tu & McIssac, 2002) (See Table 1.2) have found that combinations of personal characteristics and demographics like prior educational experience and prior computer training or grade point average, study environment, time since last college class, background preparation and computer self-efficacy are related to or help predict success in terms of grades or completion. One important study by Morris, Wu and Finnegan (2005) on predicting retention in online general education courses looked specifically at locus of control and financial aid as major predictors for

Table 1.2 Studies on Online Student Program Retention and Course Completion

Year	Author	Factors related to success in online courses or programs	Success Measured by
1990	Powell, Conway & Ross	Marital status, need for success and support, higher literacy scores, financial stability, study habits, gender, and previous educational preparation	Passing a course/course completion
1995	Fjortoft	Intrinsic motivation, age & level of student	Program persistence
1997	Richards & Ridley	Computer proficiency	Program persistence
1999	Nesler	Gender, holding prior degrees, active military status, race	Program persistence
1999	Parker	Locus of control and source of financial assistance	Course completion
2000	Pachnowski & Jurczyk	Instructors' rating of students' attitudes and study habits	Course grade
2001	Lim	Computer self-efficacy	Persistence (measured by likelihood of enrolling in future terms)
2001	Osborn	Study environment, motivation, and computer confidence	Course completion
2002	Kemp	Work commitments and resiliency	Course completion
2002	Rovai	Sense of community	Perceived greater cognitive learning and therefore greater satisfaction and persistence
2002	Tu & McIssac	Social context, online communication, interactivity	Stronger sense of community
2003	Muse	Grade point average, study environment, time since last college, background preparation	Course completion
2004	DeTure	No significant factors found in those tested	GPA
2004	Dupin-Bryant	GOA, class rank, number of previous classes online, Internet search and applications training	Course completion
2005	Morris, Finnegan & Wu	Frequency and direction of participation	Course completion
2005	Morris, Wu & Finnegan	High school GPA, Math SAT score	Course completion
2008	Aragon & Johnson	Gender, academic readiness, and enrolled in more classes	Course completion
2008	Moore, Bartkovich, Fetzner & Ison	Full-time status and fewer credits completed online	Course Completion

completion or non-completion of online courses but found that high school grade point average and math SAT scores were better predictors. Others (Richardson & Newby, 2006; Rovai, 2003b; Tu & McIssac, 2002) have focused on course design in areas like need for collaboration and interaction, cognitive engagement and group dynamics or sense of community. And while all of these may be factors related to attrition, there is one important factor, self-direction, which has not been researched as a primary variable responsible for explaining persistence in an online course. Instead, many studies focus on satisfaction, readiness and/or multiple demographic and personal characteristics rather than self-directed learning, which seems as if it would be a necessary attribute for a student learning at a distance.

There are several other studies related to higher education (not necessarily online education) and self-directed learning that all call for the need for more research on the topics; however, they do not specifically mention persistence. Carol Johnson Jones (1989) looked at the relationship between a student's score on the Self Directed Learning Readiness Scale (SDLRS) with four variables: dropout status, age, reading level, and sex. She determined that there was a statistically significant difference between the self-directed learning readiness scale scores of students who stayed in the program and those who left. In a doctoral dissertation, Pauline Garstka (1984) offered the following hypothesis for further research: Students will be more successful in class and less prone to drop if they receive prior training in self-directed learning. Ruth Moore (1987) studied predictors of success in nursing courses that required a degree of self-direction but she was unable to find significant results. Finally, in a dissertation comparing completion and non-completion in equivalent face-to-face and online classes, Elaine Johnson (2003) determined that self-directed learning readiness was not among the student characteristics that proved to have a statistically significant difference between online and face-to-face completers and non-completers. Instead, number of hours enrolled, GPA, and sex were statistically significant in her study. In addition, completion rates did vary significantly in her study; face-to face classes had a 19% higher completion rate than in the online classes (Johnson, 2003).

Conceptual Framework

The literature of self-directed learning and persistence provide a strong foundation for this study. Beginning with the work of Cyril Houle (1961) and later by his student Allen Tough

(1967, 1971) as well as Malcolm Knowles (1975, 1980), the concept of self-directed learning has been greatly discussed in the adult learning literature.

Self-directed learning is conceptualized in three major ways in the literature: as a process, as a characteristic, and as a combination of the two. The process models center on the learner taking responsibility for planning, implementing, and evaluating their learning experience (Brockett & Hiemstra, 1991) and often refer to the concept as self-directed learning. The learner characteristic models consider self-directed learning an attribute or personal characteristic of the learner. Brockett and Hiemstra (1991) in fact call this "learner self-direction" or a personal characteristic which "centers on a learner's desire or preference for assuming responsibility for learning" (p. 24). Several models also combine the two, creating more of an umbrella concept that integrates instructional method process (self-directed learning) and the personality characteristic of the individual learner (learner self-direction).

The final relevant concept that helps provide the framework for this study is that of persistence. Persistence, which is defined by Rovai (2003a) as "the behavior of continuing action despite the presence of obstacles" (p. 1), is an important measure of effectiveness for institutions of higher education. There are two important models related to the context of this study because they include factors that are related to self-direction. The first is Tinto's (1975, 1987, 1993) student integration model which says that there are two categories of determinants for successful persistence: factors from experiences prior to college and individual student characteristics and factors that are drawn from experiences at college. The second is Bean and Metzner's (1985) student attrition model which focuses in the nontraditional college student is important because Rovai (2003a) observed that distance education students are likely to be nontraditional students. Based on the logic of these models, self-direction is indeed an important characteristic for online learners.

Statement of the Problem

Given the proliferation of online asynchronous courses, the yearly increases in institutions offering online courses, and the increasing numbers of students participating in online education as well as the current attrition problems facing schools with online offerings, it is important to these institutions to determine why students are not persisting to complete their online courses and programs. Current research neither adequately explains the reasons for high

dropout rates in online courses and programs nor do the studies agree on a major cause or factor as can be seen in Table 1.2.

While a number of researchers (Aragon & Johnson, 2008; DeTure, 2004; Dupin-Bryant, 2004; Fjortoft, 1995; Kemp, 2002; Lim, 2001; Morris, Finnegan et al., 2005; Morris, Wu et al., 2005; Muse, 2003; Nesler, 1999; Osborn, 2001; Pachnowski & Jurczyk, 2000; Parker, 1999; Powell et al., 1990; Richards & Ridley, 1997; Rovai, 2002b; Tu & McIssac, 2002) have included individual learner characteristics as factors related to success and/or persistence in online learning, a gap in the literature exists when it comes to ascertaining the specific relevance of self-directed learning with persistence in completing online courses and programs. Based on my experience as an online educator and college administrator, self-directed learning is a necessary attribute for a student who makes the decision to take one or all of his or her classes online, particularly in an asynchronous mode where the learner is responsible for accessing and learning the course material on his or her own. While some studies explored methods to increase self-direction within students in online classes (Kasworm, 1992; Lee, 2001; Lee & Gibson, 2003; McMahon & Oliver, 2001), I found only one case study by Pachnowski and Jurczyk (2000) that included self-directed learning as the primary factor in a study using online courses. Instead of course completion or program persistence, they studied the predictive relationship between course grade and self-direction; unfortunately, the study had a sample size of 31 participants. Aragon and Johnson (2008) included self-directed learning among the many variables they analyzed to determine completion and noncompletion in community college online courses. Therefore, the purpose of this study is to augment these studies by evaluating the concept of self-directed learning and its relationship with persistence in online programs.

Based on these issues as well as the conceptual framework provided above, the main research question is:

To what degree is self-direction related to persistence in online programs?

Significance of the Study

The numbers of students entering online courses and programs is predicted to continue to grow if recent trends continue. However, the reality is that students are dropping from online courses and programs at a higher rate than on campus classes and programs.

This study is aimed at assessing to what degree self-directed learning is related to persistence in online programs. If it is found that the learner characteristic of self-direction is indeed related to persistence in online programs, colleges could then begin to assess students for this characteristic and perhaps put into place some mechanisms within the online course for increasing self-direction with the intention of increasing student persistence and therefore retention. The results of this research, consequently, would contribute to the knowledge base on retention in online education and can aid academic institutions in understanding an important factor related to online student retention. Specifically, colleges could begin to assess their students for the characteristic of self-direction and use the results of these assessments to develop proactive programs to support and encourage completion in online courses.

Definition of Key Terms

Terms that are unique to this research, technical in nature, or subject to interpretation are defined below:

Andragogy – "the art and science of helping adults learn" (Knowles, 1980, p. 43). Because this study encompasses higher education, andragogy has particular relevance as most higher education students are adults. Knowles, considered the "Father of Andragogy" and Reischmann (2000) author of andragogy.net, agree that self-directed learning is an important area of research within the scholarly approach of andragogy.

Asynchronous online courses – computer-mediated online courses in which the "students and teachers do not have person-to-person direct interaction at the same time or place" (Phipps & Merisotis, 1999)

Attrition – "the diminution in numbers of students resulting from lower student retention" (Hagedorn, 2005).

Computer-mediated learning – "learning process [that] involves activities where the learners are at a distance from the originator of the teaching material" and the computer is the form of media used to transmit the activities (Phipps & Merisotis, 1999, p. 11).

Course completion – the smallest unit of analysis of institutional retention of students (Hagedorn, 2005); refers to the participation in a college course until its end. There are two types of course completion: successful completion is earning a passing grade in a course and unsuccessful completion is earning a failing grade in a course.

Distance education – meets the following three criteria: the majority of educational communication between teacher and student(s) occurs non-contiguously, involves two-way communication between teacher and student(s) for the purpose of facilitating and supporting the educational process, and uses technology to mediate the necessary two-way communication (Garrison, 1990, p. 222).

Learner self-direction – from the learner characteristic conceptualization of self-directed learning, this is the personal characteristic that allows learners to take more responsibility and control in the learning process (Caffarella, 1993). Brockett and Hiemstra (1991) describe it as "a learner's desire or preference for assuming responsibility for learning" (p. 24).

Nontraditional student – defined by Graham and Gisi (2000) as an older student who divides their time between classes, work, roles in community, and work and who often have little time for campus involvement outside of the classroom.

Persistence – "the behavior of continuing action despite the presence of obstacles" (Rovai, 2002b, p. 1). In this study, the "action" to which Rovai is referring is continuing past one's coursework in an online program. It can be an important measure of the effectiveness of an online program (Rovai, 2002b); however, Hagedorn (2005) considers it a student measure rather than an institutional one: in other words, institutions retain and students persist.

Retention – it is the antonym of attrition. With respect to higher education, it is the act of keeping all currently enrolled students progressing in his/her education until completion of a degree (Hagedorn, 2005). Hagedorn (2005) considers it an institutional characteristic measure rather than a student one: in other words, institutions retain and students persist.

Self-directed learning – from the process conceptualization of self-directed learning, this is a "process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). It has also been characterized by Oddi (1986) as "initiative and persistence in learning over time through a variety of learning modes" (p. 98).

CHAPTER 2
REVIEW OF LITERATURE

The purpose of this study is to evaluate the factor of self-directed learning and its relationship with the completion or non-completion of an online course by answering the research question:

To what degree is self-direction related to persistence in online programs?

In addition, background literature on distance education, online learning, persistence, self-directed learning, and other related studies will be presented in this chapter. Specifically, the chapter begins with an overview of the literature that sets the context in which online learning now occurs, including a brief history of online education, a review of online course statistics, followed by discussion on the reasons for the continued increase of the online student population and problems with online retention. The second major section of the chapter reviews models of persistence and the third discusses the literature on self-directed learning, first as a process and then as a learner characteristic. This is followed by a discussion about the two most used self-assessment instruments for self-directed learning: the Self-Directed Learning Readiness Scale (SDLRS) and the Oddi Continuing Learning Inventory (OCLI). Finally, the chapter ends with a synthesis of studies related to both online learning and self-directed learning.

Context

Distance education is by no means a new phenomenon. Therefore, the problems that occur when teacher and learner are not face-to-face are not new problems. The following section contains important information related to the context of this study: the history of distance education, recent online course statistics, and reasons for choosing online courses and programs, as well as information concerning online retention.

History of Distance Education

Garrison (1990) defined distance education as mediated two-way communication. After its birth in 1728, correspondence study, the first of many types of distance education, would not gain momentum until the late 1800s (Holmberg, 1986). Distance education would later proliferate to the majority of higher education institutions in the United States (Phipps & Merisotis, 1999). Gibson (2000) explained the reason for its growth by stating, "Once again, the

dominant issue was access---providing access to education and training that would otherwise be denied" (p. 423).

With the development of the printing press in 1857 (Gibson, 2000) as well as the postal service in the 1800s, commercial correspondence colleges provided distance education to students across the country. John Vincent established a home reading circle in 1878 (Swanson, 1988). In his literature review, Garrison (1990) pointed out that others such as William Rainey Harper who is known as the father of correspondence education in North America, joined the movement, later to be called the Chautauqua movement. This became known as the first significant distance education effort in North America and resulted in the creation of the Chautauqua University where the liberal arts program that was mainly taught via correspondence courses. Harper would later bring his ideas of distance education to the University of Chicago where he was president. At the same time, correspondence schools were also being formed by commercial institutions offering vocational education (Knowles, 1977).

Correspondence courses, while created as a means of access to education for those who for whatever reason could not attend traditional classroom instruction, faced dropout rates that ranged from 40-90 percent (Baath, 1984; Persons & Catchpole, 1987). While print was an inexpensive medium for communication, it was slow. With the inventions of radio and television as well as other media that made learning at a distance even more possible because of quicker and regular feedback (Garrison, 1990), the trend of distance education continued (Phipps & Merisotis, 1999). "Audio-teleconferencing represented the first and most profound departure from correspondence study" (Garrison, 1990, p. 224) and was followed by video and computer teleconferencing.

Another major wave of invention again changed distance education. During the 1990s, the growth of public access networks, most importantly the Internet, gave rise to a form of distance learning in which the World Wide Web was used as an application to provide online courses to students (Muse, 2003). Students could access information and courses 24 hours a day, seven days a week.

From correspondence courses, then to video teleconferencing and eventually two-way interactive video in the 1990s, today's colleges and universities have moved towards online education as their primary means of distance education (National Center for Education Statistics, 2003). As defined by Allen and Seaman (2004), online courses, which are the focus of this

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study, are those where at least 80% of the content is delivered online and which typically have no face-to-face meetings at all. At the complete opposite extreme, a traditional course (which may also be called a face-to-face course or an on-ground course) is a course with no online technology being used and in which content is delivered in writing or orally (Allen & Seaman, 2004). Finally, the combination of on-ground and online courses is the web-facilitated course in which web-based technology is used to facilitate a face-to-face course. These are also called blended or hybrid courses which includes anywhere from 30 to 79% of the content being delivered online (Allen & Seaman, 2004). The type of technology of focus in this study is asynchronous online courses in which the majority to 100% of all of the content in the course is delivered using the Internet.

Review of Online Course Statistics

One comprehensive nationwide report containing statistics on online education were released by the National Center for Education Statistics (2003). According to this report, "56% of all 2-years and 4-year Title IV eligible, degree granting institutions offered distance education courses in 2000-2001, representing an estimated 2,320 institutions (p. 3). Of the 56% of institutions offering distance education, 82% of the enrollments were in undergraduate courses and 90% of the institutions "reported that they offered Internet courses using asynchronous computer-based instruction as a primary mode of instructional delivery" (National Center for Education Statistics, 2003, p. 11).

Another premier report published concerning online education, Making the Grade: Online Education in the United States 2006, placed enrollment numbers at 3.2 million students in the fall 2005 term, which was a substantial increase over the 2.3 million reported in 2004 (Allen & Seaman, 2006). In fact, the authors (Allen & Seaman, 2006) insist that, "For the past several years, online enrollments have been growing substantially faster that the overall higher education student body" (p. 1). In addition, their statistics agree with those from the National Center for Education Statistics (1999, 2002, 2003, 2008); online students in 2005 were overwhelmingly undergraduates. By the time the 2008 report was published, over 3.9 million students were taking at least one online course which accounted for a 12.9% annual growth rate over the previous year (Allen & Seaman, 2008).

Reasons for Choosing Online Courses and Programs

The reasons why a learner chooses distance education have not changed since its inception (Gibson, 2000). Distance education removes some of the barriers that keep students from attending higher education which include work, family obligations, lack of time, and lack of self-confidence (Qureshi, Morton, & Antosz, 2002). When the "distance factor" in attending higher education is removed from the equation, more people are able to access higher education and receive their degrees. As more and more "nontraditional" students enter the higher education arena, many more students face the very barriers mentioned above. The National Center for Education Statistics (2008) cited two factors affecting distance education decisions: (a) meeting the need for flexible schedules and (b) providing access to college for students who would otherwise not have access were among the top two.

An online course or an online program gives the student the flexibility to access the course when they want, complete their work when they can during the week, and therefore achieve the flexibility that is necessary in order for them to be successful at their other endeavors and go to college at the same time. Therefore, the convenience of the online course can alleviate some of the concerns of a student going to college by giving the added flexibility to allow the student to try and fit education into their daily or weekly schedule.

Because access and flexibility tend to drive more and more students to online learning, it is also important to ensure that these students stay in their online courses and programs. The following section will discuss some of the challenges of online retention.

Online Retention

The number of institutions offering online courses and the numbers of online courses offered within these institutions continues to grow. More and more educational institutions, both 2-year and 4-year, are moving towards offering online courses every year. With the manpower, resources, and technology that have to be in place for an institution to be able to offer asynchronous online courses, a significant amount of money has to be in place to ensure these courses have adequate resources. Wilkins (2004) asserted, "With the rapid increase in the number of online courses being offered by higher education institutions, increasing the retention of learners using this medium is a critical issue for higher education in the 21st century" (p. 33). The continued enrollment and persistence of these online students becomes a paramount and relevant concern as anecdotal information from various case studies across the country points to

significant issues with online retention rates (Carr, 2000; Link & Scholtz, 2000; Lorenzetti, 2002; McCrimon, 2005; Morris, Wu et al., 2005; O'Brien & Renner, 2002; Phelps et al., 1991; Wilkins, 2004). In her report in *The Chronicle of Higher Education*, Carr (2000) found 20 to 50 percent dropout rates for distance learners. She furthermore reported dropout rates often 10 to 20 percentage points higher in distance learning in contrast to same institution's face-to-face offerings. Bauman (2002) stated that "dropout rates of 50% or more are common [in online programs]" (p. 8). Unfortunately, national statistics are not collected on retention rates in online courses and programs (Frankola, 2005). In addition, general college retention literature points to the freshman year as the most likely time when a student may drop out (American College Testing Program, 2003). Tinto (1987) claimed that three-quarters of all dropouts leave at some time during their first year.

It is important to determine why students are dropping out of online courses at such a high rate so that at risk students can be identified and interventions can be put into place that may in turn increase these students' persistence. This in turn can lead to positive revenue growth for the higher education institutions in which these courses are taught. As Yorke (2004) says:

> Retention is a supply-side concept, for understandable supply-side reasons. It is a concept that is important for institutional managers (not least because of the implications for income streams) and for government and its agencies (which are concerned with matters relating to the return on the investment of public monies in higher education) (p. 19).

Not only is online retention vital to institutional viability and the credibility and success of online learning, it is important to students' academic success.

Conceptual Framework

Persistence

Persistence is defined in many ways in the literature; no matter what the definition, it is an important measure of effectiveness for institution of higher education. Rovai (2003a) defined it as "the behavior of continuing action despite the presence of obstacles" (p. 1), Quigley (1997) asserted that persistence when applied to adult education can be defined as "the length of time an adult attends classes" (p. 2). For the purpose of this study, persistence is defined as the act of continuing in one's studies rather than a length of time.

Models of persistence. According to the literature reviews by both Rovai (2003a) and Yorke (2004), there are several theoretical models relating to college student persistence and

retention. The earliest models attempting to explain persistence seem to have had their basis in psychology. They all mention the concept of volition, which can be defined as the thoughts and behaviors that despite distractions maintain one's intention to attain a specific goal (Corno & Kanfer, 1993). An example is Fishbein and Ajzen's (1975) theory of planned behavior. It has been used to predict volitional behavior in a variety of settings (Wanberg, Glomb, Song, & Sorenson, 2005) and maintains that persistence is mostly based on previous behavior, attitudes and norms.

Two other models also based in psychology used the concept of volition to help describe persistence. Heckhausen and Kuhl's (1985) model related the importance of the psychological state of volition to persistence when motivation is insufficient to sustain a student's persistence. Furthermore, Corno and Kanfer's (1993) theory, also grounded in the concept of volition, asserted that it is the force the intercedes between students' intention to learn and their actual learning behaviors.

There are several other models of persistence in the literature that focus not on psychology but instead at the variables and themes related to student-institution fit (Rovai, 2003a). An example is Tinto's (1975, 1987, 1993) student integration model which is very frequently cited in college student persistence literature (Kember, 1989; Morris, Finnegan et al., 2005; Rovai, 2002b, 2003a; Wlodkowski, Mauldin, & Gahn, 2001; Yorke, 2004). The basis of his model is that there are two categories of determinants for successful persistence: factors that are drawn from experiences prior to college and individual student characteristics and factors the are drawn from experiences at college (Tinto, 1975, 1987, 1993). As Rovai (2003a) stated, "Tinto's student integration model explains the student integration process as mostly a function of academic and social experiences in college" (p. 4). According to Tinto, without the powerful interactions with peers and faculty, a student would likely not integrate himself or herself into the college experience and would therefore be more likely to drop out. It is also important to note that Tinto's model was built to analyze traditional college students (See Figure 2.1).

Another model mentioned in the literature is Bean and Metzner's (1985) student attrition model, which focuses in the nontraditional college student (See Figure 2.2). It perhaps has the most relevance to this study because of the likelihood that an online college student is often a "nontraditional student" (Rovai, 2003a) which they define as:
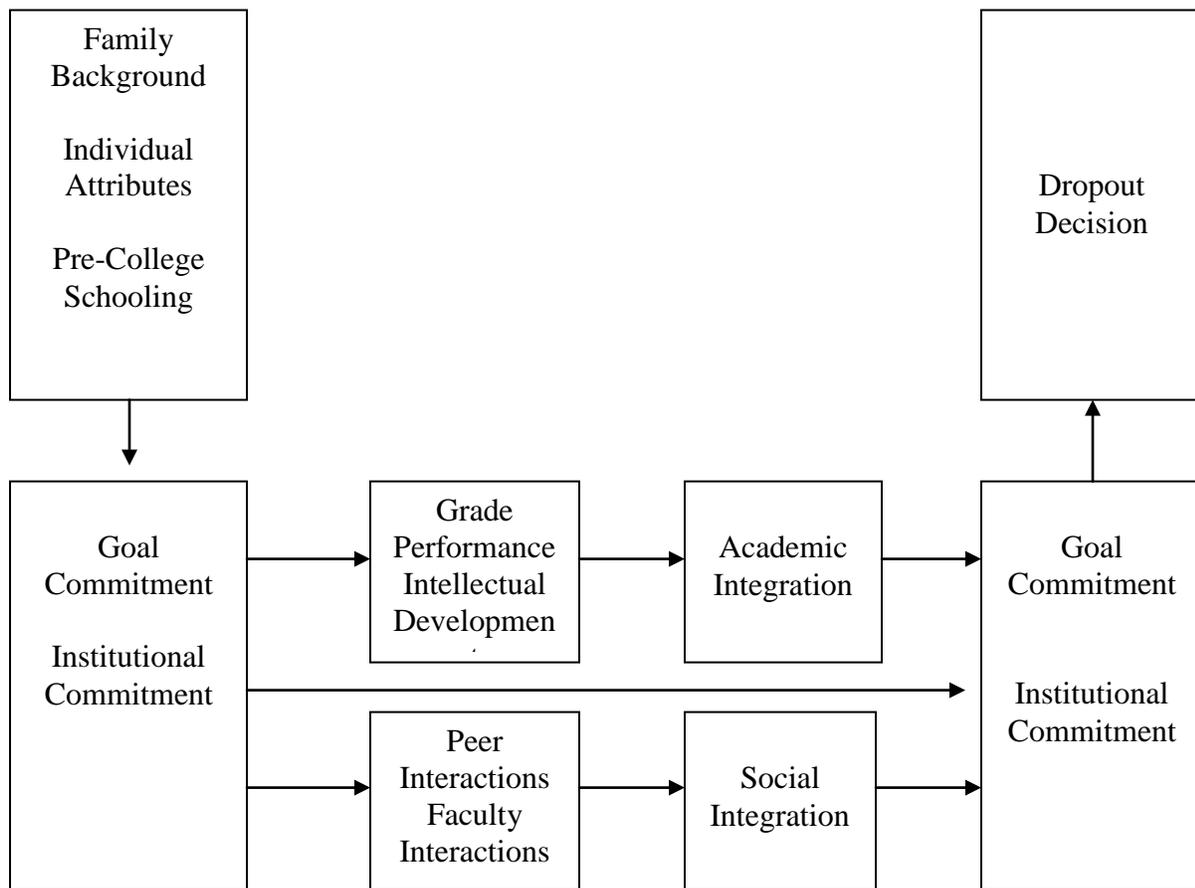
Figure 2.1. Rovai's (2003, p. 4) conceptualization of Tinto's student integration model[1]

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[1] From "In Search of higher persistence rates in distance education online programs" by A.P. Rovai, 2003, *Internet and Higher Education, 6*, p. 4. Copyright Elsevier Science Inc. Reprinted with permission from the author.

Academic Variables

Study Habits
Advising
Absenteeism
Course Availability
Program Fit

Academic
Outcome

Current GPA

Background &
Defining Variables

Age
Residence Status
Educational Goals
Ethnicity
Prior GPA

Intent
to
Persist

Psychological
Outcomes

Utility
Stress
Satisfaction
Goal Commitment
Institutional Commitment

Environmental
Variables

Finances
Hours of Employment
Family Responsibilities
Outside Encouragement
Opportunity to Transfer

Figure 2.2. Rovai's (2003, p.4) conceptualization of Bean and Metzner's student attrition model[2]

[2] From "In Search of higher persistence rates in distance education online programs" by A.P. Rovai, 2003, *Internet and Higher Education, 6*, p. 6. Copyright Elsevier Science Inc. Reprinted with permission from the author.

…older than 24, does not live in a campus residence (i.e., is a commuter) or is a part-time student, or some combination of these three factors; is not greatly influenced by the social environment of the institution, and is chiefly concerned with the institution's academic offerings (especially courses, certification and degrees (p. 489).

Bean and Metzner's model (1985) was grounded in Tinto's model (1975) as well as the earlier psychological models mentioned, and includes four factors that they believe affect persistence: 1) academic variables such as study habits and course availability; 2) background and defining variables such as age, educational goals, ethnicity, and prior GPA; 3) environmental variables such as finances, hours of employment, family responsibilities, and outside encouragement; and 4) academic and psychological outcomes while at college.

Rovai (2003a), who wrote a very comprehensive article on persistence in distance education, made an attempt to synthesize all of the models of persistence into one single composite model to use with students in distance education. The model is divided into two sections: student characteristics and skills prior to admission and external and internal factors affecting students after admission. Based on his synthesis of the literature, Rovai (2003a) decided that the following student characteristics prior to admission were important: age, ethnicity, gender, intellectual development, academic performance and preparation, computer literacy, information literacy, time management, reading/writing ability, and computer-based interaction. The following internal factors after admission were also incorporated into the model: academic integration, social integration, goal and institutional commitment, clarity of programs, self-esteem, study habits, current GPA, satisfaction, and learning/teaching styles (Rovai, 2003a). External factors after admission included finances, hours of employment, family responsibilities, outside encouragement, opportunity to transfer, and life crises (Rovai, 2003a). Albeit untested to this point perhaps because of its complexity, he asserted that it is the combination of all of these factors that help explain persistence in online programs.

Self-Directed Learning

In the 1960s, much time was spent thinking about why and how adults learn. Born out of this time period was the concept of self-directed learning. Actually, the concept dates back to 1961 when Cyril Houle (1961) developed his typology of goal, activity and learning orientations among adult learning. In his book *The Inquiring Mind*, Houle (1961) outlined the learning motives and activities of many adult learners who had chosen to pursue their particular learning

without institutional support of affiliation. At that time, he noted that this was an important topic that warranted "further investigation" (p. x).

In 1980, Malcolm Knowles (1980, p. 43) recounted his conceptualization of self-directed learning when he proposed a concept called "andragogy" which he defined as "the art and science of helping adults learn." This concept was in contrast to all existing learning theories at that time which were based in pedagogy or "the art and science of helping children learn" and is based on five assumptions about the adult learner:

1.   An adult's self-concept moves from that of a dependent personality toward one of a self-directing human being as he or she matures.

2.   Adults accumulate experience which is a rich resource for learning.

3.   The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.

4.   An adult is more problem centered than subject centered in learning.

Internal factors motivate adults rather than external ones (Knowles, 1984). According to the first assumption, Knowles (1984) observed that an adult's self-concept moves from that of a dependent personality toward one of a self-directing human being as he or she matures. While all his assumptions about adult learners are relevant to the area of college education, the first assumption concerning self-directed learning is the focus of this study.

Despite Houle and Knowles being regarded as leaders in the research about self-directed learning, the concept of self-directed learning is conceptualized in several ways in the literature. This ambiguity has also led to a number of different terms that seem to be used interchangeably with self-directed learning: autonomous learning (Houle, 1962; Miller, 1964); self-teaching (Tough, 1967); self-planned learning (Tough, 1971); self-directed inquiry (Long & Ashford, 1976); self-initiated learning (Penland, 1979); and self-directed continuing learning (Oddi, 1984). In addition, the self-directed learner has been called the proactive learner (Knowles, 1975), autodidact (Tough, 1967), autonomous learner (Houle, 1961), continuing self-learner (Penland, 1979), and self-directed inquirer (Knowles, 1980; Long & Ashford, 1976). What is evident is that self-directed learning and all of its interchangeable concepts have become integral parts of the literature concerning adult learning theory (Brockett & Hiemstra, 1991).

In this body of literature, self-directed learning is conceptualized in two major ways in the literature: as a process of learning and as a learner characteristic or personality trait. The

most recent models of self-directed learning combine these conceptualizations into comprehensive models.

   Self-direction as a process. Griffin (1978) wrote about "streams" or views of self-directed learning related to process; two are more frequently seen in the literature than the others. The first was a stream which he attributed to Knowles and his research on andragogy mentioned above.

   The second was Allen Tough's learning project stream, a frequently cited theory about how adults learn. Tough (1967, 1971) credited Cyril Houle for sparking his interest during an assignment in one of Houle's graduate classes. He used the concept of learning projects, projects in which an adult participates based on his or her on choice, to describe the process in which adults learn in a linear and stepwise way and he called this process "self-planned learning" (Tough, 1971). He believed that learning process includes four major steps: purposing, planning, executing, and judging. Most importantly, Tough highlighted that learning is not an accident and takes a high degree of self-direction by the learner. Cavaliere (1992), a follower of the learning projects stream, identified five particular stages of the Wright Brothers learning project as they built the airplane: 1) inquiring, 2) modeling, 3) experimenting and practicing, 4) theorizing and perfecting, and 5) actualizing. Others (Candy, 1991; Spear & Mocker, 1984) also insist that self-directed learning is a process but that it is not as linear as Tough believed.

   Brockett and Hiemstra (1991) insist that "most efforts to understand self-direction in learning to date have centered on the notion of an instructional process in which the learner assumes a primary role in planning, implementing, and evaluating the experience" (p. 22). In addition, according to Oddi (1984) research related to this stream led researchers to identify skills and abilities needed by the individual to engage in the process; Knowles (1975) and Guglielmino (1977) are the most frequently cited researchers in this realm.

   Self-direction as a learner characteristic. In contrast to the conceptualization of self-directed learning as a process, others equate it more as a personality characteristic. For example, Chene (1983) equates self-directed learning with the concept of autonomy as a central component of self-directed learners. Fellenz (1985) claimed that self-direction can be viewed either as a role adopted during the learning process or as a psychological state achieved during personal development. Oddi (1984) based her instrument that measures self-directed learning on her strong belief that self-directed learning is a personality characteristic. She called the

characteristic "self-directed continuous learning" in order to distinguish it from the process conceptualization of self-directed learning. In her research on the theoretical formulations for self-directed continuing learning, Oddi (1984) found that the self-directed continuous learner exhibited characteristics of autonomy and self-actualization which she called the "proactive versus reactive drive", adaptability, flexibility, receptivity to change, and willingness to take risks which she called "cognitive openness versus defensiveness" and an active pursuit of learning which she called "commitment to learning versus apathy or aversion to learning." These make up the three dimensions on which she built her instrument.

Models describing self-direction as a process and a learner characteristic. Long (1989) proposed a theoretical framework which illustrated the differing degrees of the psychological and pedagogical influence in self direction in adult learning. (See Figure 2.3) He believed that the relationship and interaction between two conceptual dimensions determine whether the learner will exhibit self-direction and that these dimensions combine to form four quadrates. The first dimension is the degree of pedagogical control carried out by the learner, i.e., does the learner have the freedom to set his or her own learning goals, can the learner determine the effort and time to be put toward learning, can the learner decide what type of evaluation that will take place (Long, 1989). The second dimension involves the "degree to which the learner, or the self, maintains active control of the learning process" (Long, 1989, p. 3). He calls this the psychological dimension.

His position is that self-direction in learning is likely to be highest when a learner displays high psychological control of the learning process but has low pedagogical control. He also believed that a learner with high pedagogical control and low psychological control would display the lowest amount of self-direction.

The most comprehensive model of self-direction and the one most relevant to this study was developed by Brockett and Hiemstra (1991) and is called the PRO model, or the Personal Responsibility Orientation model. In this model, process and learner characteristic are combined by looking at the two as dimensions.

> The first of the dimensions is "a process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process….This is the notion of self-directed learning as is has generally been used in the professional literature. The second dimension, which [they] refer to as learner self-direction, centers on a learner's desire or preference for assuming responsibility for learning….Thus self-direction in learning refers to both the external characteristics of an instructional process

and the internal characteristics of the learner, where the individual assumes primary
responsibility for a learning experience (Brockett & Hiemstra, 1991, p. 24).

Essentially, Brockett and Hiemstra's PRO model (1991) recognizes the connection between internal (learner self-direction) and external forces (self-directed learning) through the concept of personal responsibility. All of these together lead to something that they call "self-direction in learning" (Brockett & Hiemstra, 1991) (See Figure 2.4).

Measurements of Self-Directed Learning

According to Straka (1996) and Harvey, Rothman, and Frecker (2003, 2006) and Pachnowski and Jurczyk (2000), there are two leading instruments that measure the ability and readiness for self-directed learning: The Self-Directed Learning Readiness Scale (Guglielmino, 1977) and the Oddi Continuing Learning Inventory (Oddi, 1984).

The Self-Directed Learning Readiness Scale. One of the most frequently used assessments is Guglielmino's Self-Directed Learning Readiness Scale, also known as the SDLRS (Brockett & Hiemstra, 1991; Guglielmino & Guglielmino, 2008). It is a 58-item Likert scale that produces one final score of self-directed readiness and has a reliability coefficient of .87 (Guglielmino, 1977). A factor analysis of the instrument by Guglielmino (1977) yielded the following eight factors: love of learning; self-concept as an effective, independent learner; tolerance of risk, ambiguity, and complexity in learning; creativity; view of learning as a lifelong, beneficial process; initiative in learning; self-understanding; and acceptance of responsibility for one's own learning.

Although the SDLRS has been found to be both valid and reliable by several researchers (Brockett, 1985; Brookfield, 1984; Finestone, 1984; Long & Agyekum, 1983, 1984), the SDLRS is not without its criticism. Most of the criticism seems to revolve around the validity of the instrument. Field (1989, 1990), the most ardent critic of the instrument, claimed that the Delphi technique used to create the scale was not appropriate for determining potential items for an instrument. He emphasized that the Delphi technique should not be used to generate items. Field noted, "Given the conceptual confusion surrounding 'self-directed learning' Guglielmino's use of the Delphi technique to generate items may do no more than merely transfer this confusion into a set of items" (p. 129). In addition, he asserted that the construct measured by the SDLRS seems to be "only peripherally related to self-directedness" (Field, 1989, p. 135) and has problems with the eight factors because he claimed that the instrument instead measures one

PERSONAL RESPONSIBILITY

Characteristics
of the
Teaching-Learning

Characteristics
of the Learner

SELF-DIRECTED LEARNING

LEARNER SELF-DIRECTION

SELF-DIRECTION IN LEARNING

FACTORS WITHIN THE SOCIAL CONTEXT
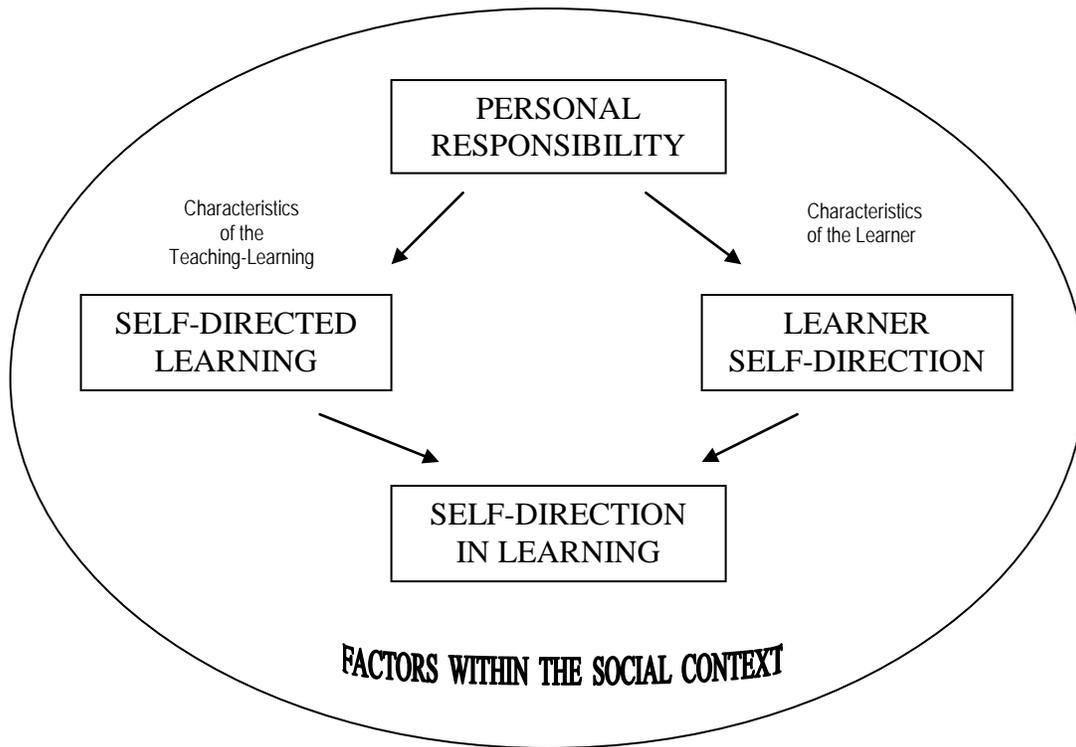
Figure 2.3. Brockett & Hiemstra's "Personal Responsibility Orientation" (PRO) model[3]

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[3] From *Self-Direction in Adult Learning: Perspectives on theory, research, and practice* by R.G. Brockett and R. Hiemstra, 1991, p. 25. Copyright 1991 by R.G. Brockett and R. Hiemstra. Reprinted with permission of the author.

"homogenous construct" which is a love and/or enthusiasm for learning (Field, 1989). Bonham (1991) noted a similar critique of the content validity of the instrument when she questioned whether the SDLRS did in fact measure readiness for self-directed learning.

The Oddi Continuing Learning Inventory. Another frequently used instrument to measure self-directed learning is the Oddi Continuing Learning Inventory (OCLI) that was borne out of Lorys Oddi's criticism of Guglielmino's theory base for the SDLRS (Oddi, 1984). Oddi (1984, 1986) believed that self-directed learning should be conceptualized as a personality characteristic, rather than a process or the combination of the two.

She used three related dimensions to group personality traits that she believed related to self-directed learning: (a) proactive drive versus reactive drive, (b) cognitive openness versus defensiveness, and (c) commitment to learning versus apathy or aversion to learning (Oddi, 1984, 1986).   Items were developed with these dimensions in mind. The instrument, consisting of 24 seven-point Likert-type items, measures what Oddi calls self-directed continuing learning. Although used less frequently than the SDLRS, several studies have demonstrated its reliability and validity (Harvey et al., 2003, 2006; Landers, 1989; Oddi, 1984, 1986; Oddi, Ellis, & Altman Roberson, 1990; Six, 1989a, 1989b; Straka, 1996). Because it is the instrument that will be used in the study, a more complete analysis of this instrument can be found in Chapter 3.

Related Studies

There have been several studies in which learner characteristics have been studied in relation to persistence and/or success in online courses (Aragon & Johnson, 2008; DeTure, 2004; Dupin-Bryant, 2004; Fjortoft, 1995; Kemp, 2002; Lim, 2001; Moore et al., 2008; Morris, Finnegan et al., 2005; Morris, Wu et al., 2005; Muse, 2003; Nesler, 1999; Osborn, 2001; Pachnowski & Jurczyk, 2000; Parker, 1999; Powell et al., 1990; Richards & Ridley, 1997; Rovai, 2002b; Tu & McIssac, 2002). (See Table 1.2)

In their study, Powell, Conway and Ross (1990) looked at predisposing learner characteristics that impact passing or failing from their first online class. They found several characteristics that helped predict passing: (a) being married, (b) self-report of need for success and support, (c) higher literacy scores, (d) financial stable, (e) good time management and study habits, (f) being female, and (g) higher ratings of previous educational preparation.

In 1995, Nancy Fjortoft studied the predictability of persistence in distance learning programs. She found that three variables helped predict online persistence: age, level of student ease with individual learning, and intrinsic benefits related to enhanced performance and satisfaction on the job. These three variables, however, only explained 23% of the variance (Fjortoft, 1995).

Computer proficiency and comfort as well as satisfaction with current and prior online courses were the learner characteristics deemed significant by Richards and Ridley (1997) in their study. Nesler (1999) sought to find factors related to retention of students in a liberal arts program at virtual college in New York. He found that having prior degrees, race (white), male students, active military status, as well as larger numbers of transfer credits were all related to retention of this population.

Of the variables she included in her study, Parker (1999) found that internal locus of control as well as a student's source of financial assistance were able to accurately predict dropout rates 84% of the time.

To date, I have only been able to identify one predictive study (Pachnowski & Jurczyk, 2000) that tied self-direction as the primary variable with online success. Success in this study was defined by course grade. Pachnowski and Jurczyk (2000) found that the instructors' rating of students' attitudes and habits was the best indicator of success (Pachnowski & Jurczyk, 2000). Although the results of the study found that self-directedness was not a good indicator of student success (defined by researchers in this study as grades), they did add that their sample of students was low (Pachnowski & Jurczyk, 2000). A study with an emphasis on the important question of attrition in online education with a focus on self-direction is needed.

Lim (2001) attempted to develop a predictive model of satisfaction of adult learners in web-based courses as measured by intent to persist to future courses. She found that of the ten characteristics she examined, computer self-efficacy was the only statistically significant predictor.

In her study aimed at selecting a set of variables related to a student's ability to complete distance learning courses, Osborn (2001) found that students with less stable study environments, lower motivation, and less computer confidence were significant. These factors were the strongest in differentiating completing students from noncompleting students.

26

Tu and McIssac (2002) used sense of community as their definition of success in an online class because they believed that a stronger sense of community would then lead to positive retention results. Their qualitative study found that three dimensions of social presence were significant in terms of establishing a sense of community among the online learners: social context in terms of task orientation and privacy, online communication skills, and interactivity (Tu & McIssac, 2002).

Kemp's (2002) study investigated the relationship between persistence, life events, external commitments, and resiliency in undergraduate distance education students. Of the six external commitments that were included in the study, only work commitments significantly correlated with persistence. Surprisingly, there was no significant correlation for life events. Finally, four of the resiliency attitude scores were significantly correlated with persistence. In contrast, Muse (2003) found that grade point average, study environment, age, time since last college class, and background preparation were discriminating factors between those who persisted and those who didn't.

Rovai has done many studies related to online learning (Rovai, 2002a, 2002b, 2003a, 2003b). One in particular concerned online learners' sense of community and their perceived learning and satisfaction. He found that there was a significant relationship between classroom community and students' perceived learning. While not tested in this study, he hypothesized that this in turn makes the students feel less isolated, leading to greater satisfaction and fewer dropouts.

Dupin-Bryant (2004) studied pre-entry variables related to course completion in university online courses. She found that six re-entry variables were the best predictors of completion or non-completion: grade point average, class rank, number of previous courses completed online, Internet search training, and Internet application training. These variables, however, only accounted for 9% of the variability in course completion. In contrast, DeTure (2004) in her predictive study of online students identified success in terms of grade point average. She postulated that cognitive style scores and online technology self-efficacy would be predictors of student success; she found, however, that they were not (DeTure, 2004).

In a predictive study, Morris, Wu, and Finnegan (2005) found that the most important predictors of completion in online general education courses were high school grade point average and SAT mathematics scores. These researchers did note their lack of a large enough

sample size and urged caution in interpreting the results. In another of their studies (Morris, Finnegan et al., 2005), they examined the relationship of student engagement and participation with completion or non-completion of the online course. They found that completers had a significantly higher frequency and duration of participation than non-completers.

It should be noted that the majority of these studies did not specifically examined or even mention the relationship between online course persistence and self-direction. In his book chapter, Long (2003) insists that online learners should be assessed for their readiness; however, he did not provide a supporting study.

Aragon and Johnson (2008) investigated the differences between several demographic, enrollment, academic, and self-directed learning characteristics with completers and noncompleters in online courses. They found statistically significant differences with the following variable: gender, academic readiness, and enrollment in more online courses. Academically prepared females that were enrolled in more online classes were more likely to be completers. Self-directed learning characteristics as measured by the Bartlett-Kotrlik Inventory of Self-Learning (BISL) were not found to be statistically significant in this study.

Lastly, Moore, Bartkovich et al. (2008) studied the demographic factors related to retention rates in online courses. They found that students who were enrolled full-time were less likely to be successful in terms of course completion. In addition, the fewer credits previously completed by these full-time students, the less likely their successful completion of online courses.

Summary

Distance education or education at a distance is not a new phenomenon; in fact, it dates back to 19th century when the correspondence course became a viable form of education. Since that time, the development of other media such as the television, radio, and computer has lead educators to be able to access students at a distance. The rise of the Internet has made access to education even easier as many institutions across the country and the world have begun to offer online courses and programs to college students.

Several pieces of research concerning the proliferation of online education in the United States (Allen & Seaman, 2004, 2006; National Center for Education Statistics, 1999, 2002, 2003, 2008) demonstrate that the number of institutions offering online education courses continue to

grow each year. Furthermore, the numbers of students who take these courses also continue to increase each year. This is probably due in part to the flexibility and convenience that online education offers to the nontraditional student who is older, working, and has a family.

Despite the convenience that online courses offers their students, research also shows that students drop out of online education at a higher rate, often a much higher rate, than students in traditional, face-to-face courses and programs. In fact, Carr (2000) found that dropout rates were 20 to 50% higher in online education than in on-ground. With the money and resources that institutions invest in the infrastructures that support these online programs, it is paramount that these institutions ascertain why students drop out of online courses.

Research on persistence includes several models that may be helpful to institutions that are suffering from retention problems. The two most frequently cited are Tinto's (1975, 1987, 1993) student integration model and Bean and Metzner's (1985) student attrition model. Tinto believed that factors drawn from experiences prior to college which include individual student characteristics as well as factors that are drawn from experiences at college are the determinants for successful persistence (Tinto, 1975, 1987, 1993). Bean and Metzner (1985), whose model has been applied more frequently to nontraditional college students, claimed that the combination of academic variables, background variables, environmental variables, and academic outcomes affect student persistence. Note that both of these models emphasize student characteristics as at least a part of the explanation for persistence.

The body of literature on self-directed learning includes the conceptualization of the construct in three different ways: as a process, as a learner characteristic, and as the combination of the two. Brockett and Hiemstra's (1991) PRO model recognizes the connection between external forces and internal forces through personal responsibility with all combined to form something that they termed "self-direction in learning."

Finally, there have been several studies (See Table 1.2) that look at the concepts of persistence and success in education. Success is defined in several different ways in these studies: grades, grade point average, student satisfaction, sense of community, retention, completion, and persistence. Pachnowski and Jurczyk (2000) were the first to combine the ideas of self-direction and online success together; however, their idea of success was course grade. It is important to further their research by combining the ideas of self-direction and online persistence.

CHAPTER 3
METHOD

This chapter provides a review of the research methods used for this study. The two main constructs to be explored in the study are self direction and persistence. Survey research and quantitative analyses will be used to explore the research question:

To what degree is self-direction related to persistence in online programs?

The chapter also includes a discussion about the institutional context and setting as well as specific demographic and educational information that will be gathered from each of the participants, information about the instrument that was used to conduct the study, and an elaboration on the data collection procedures that were used as well as a discussion about how these data were analyzed.

Institutional Context and Setting

The population of interest for this study was undergraduate students enrolled in online courses in the United States. Although the population was easily described, it was not easily accessible. Therefore, a single institution with multiple campuses, a large student body enrolled in online classes, and a greater retention problem in online classes than in traditional classes was selected as the setting for this study. The officials from the college used for data collection preferred to have the institution remain unnamed. I will therefore refer it as College X from this point forward.

College X is a private, for-profit baccalaureate degree granting college with campuses in six states across the country and approximately 18,000 students. Included in this number is a separate online division that services approximately 6,000 students. The college holds five academic terms a year; the terms are each nine to ten weeks long. This allows students to be able to graduate with a Bachelor's degree in three years.

College X suffers from similar retention problems as many other higher education institutions; students withdraw at a higher rate from online classes in general and more specifically in their first three terms of attendance. Specifically, College X's online campus had an overall attrition rate of 7.4% in 2009 whereas on ground campus attrition was 4.6% of the student population in 2009.

Participants

Two groups of students were queried from College X's online division databases. The first list included students who had withdrawn from the college within the past year after completing two terms or less. These students were called the "non-persisters." The second list contained currently enrolled students who completed three terms or more. This group was called "persisters." A questionnaire was administered electronically to those students from both groups who respond to an e-mail that contained a link to the questionnaire. Demographic variables were used to describe the two responding samples in Chapter 4.

Measures

The participants in this study completed a questionnaire that included two sections. The first section is a published measure of self-directed learning. The second section was used to collect the following demographic information: gender, age, marital status, work status, major, number of terms online, cumulative grade point average, time since high school graduation, numbers of terms/credits/courses completed, first generation of college, number of children, race, in addition to some questions related to computer access and usage. Both sections are described below.

The Oddi Continuing Learning Inventory

The Oddi Continuing Learning Inventory (OCLI) was born out of Lorys Oddi's (1984) criticism of Guglielmino's theory base for the Self-Directed Learning Readiness Scale (SDLRS). Instead of the then premier conceptualization of self-directed learning as a pedagogical process, Oddi (1984) instead conceptualized it as a personality characteristic. She used three related dimensions to group personality traits that she believed related to self-directed learning: proactive drive versus reactive drive, cognitive openness versus defensiveness, and commitment to learning versus apathy or aversion to learning (Oddi, 1984, 1986). The decision not to use the SDLRS was discussed in Chapter 2.

Oddi created 100 seven point Likert-type items through her review of literature on self-directed learning. These items were related to the three dimensions mentioned above. The items were reviewed by a panel of nine students who were similar to those who were to be used in her study. They placed the items into the dimensions they believed that the item represented. Sixty-five items were selected from this process because at least seven of the nine student panelists

correctly identified the item as being related to Oddi's intended dimension. These 65 items were then reviewed by a panel of three experts as determined by their experience with psychology and/or self-directed learning. Experts were given an explanation of each dimension and were asked to determine whether each item accurately reflected the proposed dimension and whether all aspects of the dimension had been covered based on the items provided (Oddi, 1984).

The experts recommended several revisions related to grammar and word choice and one expert suggested a missing aspect of one dimension that was corrected by changing one word. All of these recommendations were incorporated into the items. The refined group of items was put together into a pre-pilot instrument that was then administered to a group of 30 volunteers. These subjects reviewed the items and directions for clarity and these scores were subjected to an item analysis. Initial coefficient alpha for the total scale was .83. Thirty-four items were deleted because they lowered the reliability. A second reliability analysis resulted in a .85 coefficient alpha for the scale. The final 31 items were assembled into another instrument that would then be used in the pilot study (Oddi, 1984).

Responses were then collected from 292 subjects who were all graduate law, education or nursing students. Five respondents were eliminated because of unmarked or double marked answers; responses from 287 completed instruments were then analyzed. Because the construct that Oddi was measuring "self-directed continuing learning" was "based on the assumption that the dimensions of the construct were interrelated, an oblique approach (oblim method of rotation) was selected for rotation of the principal components extracted for the plot sample data" (Oddi, 1984, p. 99).

The result of this factor analysis was that nine principal components (selected because they had eigenvalues of 1 or more) accounted for 54.7% of the total variance. The coefficient alpha for the 31 item scale was .72. Rotation of these factors was unsuccessful. Five items were then deleted in order to improve the reliability of the scale and this resulted in a coefficient alpha of .75 for the total scale. This was followed by a second factor analysis that yielded eight principal components that accounted for 57% of the variance. The final development of the scale, after the revisions to refine the instrument, facilitate ease in responding, and random rearrangement of the items, was followed by its dissemination to another sample. The following demographic information was also collected from the participants because of Oddi's (1984) assertion that previous studies said they were influential on self-directed learning: age, sex, level

of education, level of family income, level of mother's education, level of father's education. None of the 271 students in the final sample were participants in the pilot study.

The range of scores on the OCLI in Oddi's final study was 44-161; there is a maximum possible score of 168 and a minimum possible of 24. The initial alpha coefficient for reliability was .83 but two items correlated negatively with the total score so they were eliminated. The standardized coefficient alpha for the 24-item OCLI was .88. Thirty four participants were re-tested; the test/retest analysis was .89 (Oddi, 1984).

Data from the OCLI were factor analyzed. The five principal components accounted for 55.3% of the variance. Using oblique rotation, the five factors were not interpretable because of insufficient loadings of items on two of the factors. Using an extraction criterion of three factors, three principal components were found to have accounted for 45.7% of the variance (Oddi, 1984).

The first factor, which accounted for 30.9% of the total variance and was made up of 15 items, was described by Oddi as a "general factor relating to several other elements of self-directed continuing learning, such as ability to work independently and learning through involvement with others" (Oddi, 1984, p. 134). The second factor, which accounted for 8.0% of the variance and was comprised of three items, was thought to represent the ability of an individual to be self-regulating. Factor three, which accounted for 6.8% of the total variance and was made up of four items, was described as reading avidity. These three factors differed from her initial three domains.

Finally, four valid and reliable instruments that measured variables that were thought to be related to self-directed continuing learning were selected to provide external validity estimates (Oddi, 1984, 1986). Overall scores on the OCLI correlated positively with several of the subscales from three of the instruments, which suggests convergent validity of the OCLI (Oddi, 1986). "A measure of discriminant validity was provided when scores on the OCLI failed to correlate with scores on the Shipley, a measure of adult intelligence" (Oddi, 1984, p. 170). Oddi (1984) believed that this is consistent with research by Chickering and others that self-directed learning is not dependent on intelligence. Oddi (1984) ended her dissertation by stating that the scale could have implications for practice after further validation studies had been conducted but that "the OCLI is an instrument of satisfactory reliability and stability" (Oddi, 1986, p. 104).

Several follow-up studies using the OCLI have been done (Harvey et al., 2003, 2006; Landers, 1989; Oddi et al., 1990; Six, 1989a, 1989b; Straka, 1996). Six (1989b) studied the generality of the underling dimensions of the OCLI using Oddi's original data set of 271 responses, data from 98 students from Landers' (1989) study, as well as 328 responses that he collected himself. His factor analysis found that the three factors derived from his data set matched the same three factors reported by Oddi and his explained 44% of the variance. Six (1989b) added that:

> The high correlation between the two sets of factor scores suggests that the factors derived by Oddi do not break up to form new factors under different study conditions. To this degree the factors remained stable across studies, demonstrating their generality. Furthermore, the results strongly suggest that the factors identified by Oddi are not unique to her sample. (p. 50)

Six (1989a, 1989b) did, however, find that there were smaller interfactor correlations than what Oddi (1984, 1986) reported and he suggested further factor solutions should be pursued.

Straka (1996) also tested the stability of the factor structure by using the same procedure as Oddi (1984) and Six (1989a) but with a sample from a German college. Straka's study yielded a Cronbach's alpha of .74 for the total set of items. In addition to the eigenvalues being smaller and only two thirds of the items being assigned to the same factors, his factor analysis indicated a similar solution to Six's and Oddi's. The percent of variance explained, however, was 32%, which was lower than in Six's or Oddi's studies. He believed that this may have been the case because Oddi and Six accepted loadings that were $\geq$ .5 whereas Straka included loadings >.5. Furthermore, Straka (1996) noted that there may be cultural differences in the understanding of self-directed learning in addition to unidentified translation effects when the OCLI was translated into German.

In another study with 250 responses (Harvey et al., 2006), coefficient alpha for the OCLI was .66. The researchers also found a similar factor structure to Oddi, Six, and Straka when they used a three-factor obliquely rotated factor analysis; their eigenvalues, however, were similar to Straka's so lower than the ones described by Oddi and Six. In addition, the portion of variance explained was 34% (Harvey et al., 2006). They also explored solutions with more than three factors and they found that a four-factor solution from obliquely rotated analysis was "the simplest, most interpretable solution for this set of student responses" (Harvey et al., 2006, p. 195). The four factors proposed were Learning with Others, Learner Motivation/Self Efficacy/Autonomy, Ability to be Self-Regulating, and Reading Avidity (Harvey et al., 2006).

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For the purposes of this research, a royalty-free copyright license for the use of the OCLI was granted by Lorys F. Oddi.

Demographic and Educational Variables

The second part of the questionnaire collected the following information from the participants of this study:

Computer Usage Variables

- Primary computer usage
- Internet connection

Demographic Variables:

- Gender – male or female [coded 0,1]
- Age in years
- Marital Status – single, married, or divorced
- Work status – not working, part-time job, full-time job
- Number of children
- Race
- First generation in college
- English primary language in the home

Educational Variables:

- Degree and major
- Total college credits completed
- Number of terms and courses online
- Cumulative grade point average
- Reasons for taking online courses
- Problems with taking online courses
- Time since high school graduation

Procedures

This researcher provided the Chief Academic Officer from College X with a memorandum containing information about the research study, a consent form approved by the Virginia Tech Institutional Review Board (IRB), and the questionnaire. Following the Chief Academic Officers' approval and after I was provided with e-mail lists of students from each

group, I sent an e-mail to each group of students with a link to the questionnaire. Persisters received one link and non-persisters received another. The e-mail contained a cover letter in which the participants were asked to complete the survey questionnaire within two weeks of receiving the e-mail. The data from the questionnaire was then analyzed following the data analysis methods described below.

Data Analysis

The data from the questionnaire was downloaded to Excel and transferred to SPSS 11.0. Preliminary analysis of the data included descriptive analyses of the demographic, educational, and computer usage variables. In addition, because of the research concerning the OCLI and the lack of agreement on a three-factor or four-factor structure, a factor analysis was performed. This tested both the three-factor and four-factor structures. Reliabilities were determined for the best resulting scales and subscale scores were computed.

"Multivariate analysis of variance (MANOVA) is used to assess the statistical significance of the effect of one or more independent variables on a set of two or more dependent variables" (Weinfurt, 1995, p. 245). MANOVA was used to determine the relationship between the demographic and educational variables as well as the self-directed learning scores from the three subscales of the OCLI. Comparisons were made between the two groups. The weighted coefficients achieved through the analyses indicated the relative ability of each of the variables to discriminate between persisting and nonpersisting students. The MANOVA was then followed by separate independent sample t-tests, bivariate correlations for the OCLI subscores and a few other variables, and distributions for the OCLI subscores were analyzed. Finally, the education and computer usage variables were analyzed.

CHAPTER 4
RESEARCH FINDINGS

The purpose of this study was to investigate the difference in self-direction, as measured by the Oddi Continuing Learning Inventory (OCLI), between students who persist and those who don't persist in undergraduate online asynchronous programs. This chapter presents a description of the sample, results of these preliminary analyses, and an answer to the research question posed in Chapter 1.

Participants

Differential Response Rates

In 2009, College X had approximately 6,000 online students and 18,000 on-ground students. The overall attrition rate for the online campus was 7.4% for 2009 and went as high as 9.8% during one month. In contrast, the on-ground campus attrition rate was 4.6% for 2009 with the highest attrition month sitting at 6.8%.

The participants in this study are or were students in College X's online campus. There were two groups represented: the persister group included those actively enrolled students who had completed at least three terms when the contact list was pulled by the registrar at College X's online campus. The nonpersister group included those students who had dropped from the online campus during the previous year after completing two terms or less. These parameters were decided on because higher education retention research (e.g. American College Testing Program, 2003) suggests that if a student persists past their third term/semester, he or she will most likely persist to graduation. The contact lists provided by College X included 2419 persisters and 2287 nonpersisters with e-mail addresses. E-mails were sent to both groups with a link to their questionnaire. Two hundred twenty two persisters responded within one week and the final sample of persisters was 241. However, only fifteen nonpersisters responded after one week. I received several e-mails from nonpersisters stating that they did not wish to be contacted by anyone from affiliated with College X and requesting that they be taken off of College X's mailing list. I sent follow-up reminder e-mails after one week, two weeks, and one month to the nonpersister group only. The resulting sample was 49 students. Please see Appendix B for copies of all e-mails.

It should also be noted that of the 49 nonpersisters who responded, only 39 (80%) completed the entire survey. Of the 241 persisters who responded, 226 (94%) completed the entire survey.

Participant Profile

Of the 241 persisters who responded to the question, 51% were female while only 41% of the nonpersisters who responded were female. Roughly the same percentage of participants represented the first generation to go to college in each group (55% for persisters and 53% for nonpersisters). Forty five percent of the persisters were married and an additional 10% were divorced; 33% of the nonpersisters were married and an additional 10% were divorced. The persister group had a larger proportion of participants working full-time (49% versus 45% for the nonpersister group); however the persister group also had a larger number of participants who were not working at all (30% versus 26% of the nonpersisters). The majority responding to the question in each group spoke English as the primary language in their household (86.3% for persisters and 73.5% for nonpersisters). In addition, 71% of persisters reported being White compared to 49% of nonpersisters while 8% of persisters reported being Black or African American compared to 14% of the nonpersisters. The mean ages of the groups were similar (35 for persisters and 33 for nonpersisters) and the average number of children was also similar (1.01 for persisters and 1.40 for nonpersisters). As can be seen in Table 4.1, none of these differences were statistically significant at the .05 level.

Many education demographic questions were also asked of the respondents. Seventy nine percent of the persisters were in Bachelor's programs in contrast to 61% of the nonpersisters. The most commonly reported Associate's degree major for the persisters was Graphic Design (56%) and for the nonpersisters was Graphic Design (33%) and Paralegal (33%). Of the Bachelor's level respondents, the most prevalent major for the persisters was Game Art and Design (15%) followed by Web Design (12%) and Information Systems Security (11%). For the nonpersisters, the most prevalent Bachelor's major was Criminal Justice (16.8%) followed by Marketing (13%) and Computer Network Management (13%). Academically, the reported cumulative grade point average (GPA) for persisters was 3.46 in contrast to 2.94 for the nonpersisters. Both groups reported an average of almost 15 years since they had been in high school (See Table 4.2 and Table 4.3).

Table 4.1 Participant Demographic Profile

	Persisters N=241		Non-persisters N=49			
	n_1	%	n_2	%	χ^2	p-value
Sex					3.376	.066
Male	93	38.6%	23	46.9%		
Female	123	51.0%	16	41.0%		
Missing	25	10.4%	10	20.4%		
First Generation in College					.523	.470
Yes	86	35.7%	13	26.5%		
No	132	54.8%	26	53.1%		
Missing	23	9.5%	10	20.4%		
Marital Status					1.311	.727
Single	83	34.4%	18	36.7%		
Married	108	44.8%	16	32.7%		
Divorced	24	10.0%	5	10.2%		
Widow(ed)	1	.4%	0	0%		
Missing	25	10.4%	10	20.4%		
Work Status					.072	.965
Not working	73	30.3%	13	26.5%		
Part-time	25	10.4%	4	8.2%		
Full-time	118	49.0%	22	44.9%		
Missing	25	10.4%	10	20.4%		
English primary language					.930	.335
Yes	208	86.3%	36	73.5%		
No	9	3.7%	3	6.1%		
Missing	25	10.0%	10	20.4%		
Hispanic Origin					1.281	.258
Yes	16	6.6%	5	10.2%		
No	200	83.0%	34	69.4%		
Missing	25	10.4%	10	20.4%		
Race					4.666	.323
Black or African American	20	8.3%	7	14.3%		
White	171	71.0%	24	49.0%		
Other	9	3.7%	1	2.0%		
Missing	41	17.0%	17	34.7%		
	mean	sd	mean	sd	T	P
Age (n_1= 217 and n_2 = 39)	35.36	10.98	33.21	10.07	1.144	.311
Children (n_1=206 and n_2=38)	1.01	1.44	1.21	1.40	-.796	.611

Table 4.2 Participant Majors

	Persisters N=241		Non-persisters N=49	
	n_1	%	n_2	%
Bachelor's students	191	79.3%	30	61.3%
Associate's students	32	13.2%	6	12.2%
Missing	18	7.5%	13	26.5%
Associate's Major				
Computer Network Eng.	6	18.7%	1	16.7%
Graphic Design	18	56.3%	2	33.3%
Paralegal	6	18.7%	2	33.3%
Software Engineering	2	6.3%	1	16.7%
Bachelor's Major				
Animation	12	6.3%	0	0.0%
Business Mgmt – Acct.	17	8.9%	1	3.3%
Business Mgmt – Mktg.	19	9.9%	4	13.3%
Computer Network Mgmt.	11	5.8%	4	13.3%
Criminal Justice	13	6.8%	5	16.8%
E-Business Mgmt.	1	0.5%	0	0.0%
Fashion Merchandising	9	4.7%	0	0.0%
Game Art and Design	29	15.2%	3	10.0%
Game Software Dev.	16	8.4%	3	10.0%
Health Care Mgmt.	7	3.7%	1	3.3%
Interior Design	5	2.6%	2	6.7%
Information Systems Sec.	21	11.0%	3	10.0%
Technical Mgmt.	0	0.0%	0	0.0%
Visual Communications	8	4.2%	1	3.3%
Web Design	23	12.0%	3	10.0%

Table 4.3 Participant Academic Profile

	Persisters n₁=241			Non-persisters n₂=49				
	N_1	mean	sd	n_2	mean	Sd	t	P
GPA	180	3.46	.50	21	2.94	.75	4.388	<.001
Terms completed	198	8.33	4.57	35	1.33	1.02	9.005	<.001
Courses completed	174	21.33	12.96	32	2.94	3.30	7.969	<.001
Credits completed	156	95.66	66.79	31	11.03	18.74	6.987	<.001
Time since HS in years	220	14.90	10.84	35	14.53	9.91	.191	.463

n_1 = persisters and n_2 = nonpersisters

Table 4.4 Computer Usage

	Persisters N=241		Non-persisters N=49			
	n_1	%	n_2	%	χ^2	p-value
Location of Computer Used for Coursework					.453	.797
Home	212	88.0%	35	71.4%		
Work	8	3.3%	1	2.0%		
Public Library	3	1.2%	1	2.0%		
Missing	18	7.5%	12	24.5%		
How connect to Internet from home					13.449	.020
Don't	0	0.0%	2	4.1%		
Dial-up	4	1.7%	1	2.0%		
DSL	89	36.9%	11	22.4%		
Broadband	119	49.4%	22	44.9%		
Fios	6	2.5%	2	4.1%		
Don't know	5	2.1%	1	2.0%		
Missing	18	7.5%	10	20.4%		

n_1 = persisters and n_2 = nonpersisters

The respondents were also asked some computer usage questions. Similar percents of persisters and nonpersisters used a computer at home to complete their coursework (88% versus 71%) and the majority in each group connected to the internet via DSL (37% versus 22%) or Broadband (49% versus 45%) (See Table 4.4).

Participant Experience with Online Courses

The responses to the questions concerning the reasons for why the student took an online course at College X are interesting. Two of the three top reasons were identical for persisters and nonpersisters: (a) convenience and (b) flexibility. The two groups differed on their third top reason: persisters rated "not having to commit to a specific class time" higher whereas the nonpersisters rated "work schedule" in their top three reasons. Although work status did not result in statistical significance when comparing the groups, it is an area to be explored in future research. This will be discussed further in the Recommendations section of Chapter 5. The top two ratings also agree with the literature reviewed in Chapter 2 surrounding convenience and access being important reasons for the growth in online courses and programs (Burbules and Callister, 2000; Gibson, 2000; National Center for Education Statistics, 2008). Thematic analysis of the open-ended question concerning reasons for taking online classes highlighted interesting differences. Persisters most frequently wrote in items related to family obligations including children. In addition, several persisters mentioned inability to take classes on ground due to medical conditions and disabilities. Nonpersisters, on the other hand, mentioned items like "bettering myself" and "seeing if I was up to the challenge." This begs the question about whether the nonpersisting group entered College X with a college degree in mind.

The analysis of another set of questions surrounding problems with online learning also brought about some interesting results. Respondents were asked to respond to items related to problems they had encountered when taking online classes. Interestingly, persisters and nonpersisters agreed on their top three problems and even rated them in the same order: (a) work obligations, (b) family obligations, and (c) not easy to access the internet/connection speed. It is noteworthy that respondents choose online programs for their convenience and flexibility, yet, the daily life events that adult learners face can also create problems that may in fact cause them to leave school. This is an important consideration for future research in this area.

Another set of questions concerned the respondents' satisfaction with their online experience in general. In all three of these satisfaction-related questions, there was a statistically

significant difference in the satisfaction for persisters and nonpersisters. Persisters had higher satisfaction in all of these areas including (a) their learning experience online meeting their expectations, (b) overall satisfaction with their experience online, and (c) the likelihood of taking online classes again. Each analysis demonstrated a .000 significance level when comparing the two groups. Interestingly, there were several nonpersisters who answered "likely" or "highly likely" to the likelihood of taking online classes again and to a question pertaining to their plans for registering for online classes at College X again. It can be assumed from these results that the nonpersisters had reasons other than satisfaction with online and satisfaction with College X that caused them to withdraw from the college.

Preliminary Analysis

Based on the discussion in the literature surrounding the factor structure of the Oddi Continuing Learning Inventory (OCLI) that was discussed in Chapter 3, I performed both a three and four factor analysis using a principal components extraction with varimax rotation and Kaiser normalization. Using a criterion of excluding variables with loadings less than .4, the three factor model appeared to work the best with these data and explained 46% of the variance. In analyzing the four factor model, the fourth factor was trivial. Items 1, 2, 4, 5, 6, 7, 8, 14, 15, 16, 18, and 22 loaded to Factor 1 which corresponds with Oddi's "General Factor" and had a Cronbach's alpha of .90. Item 3 loaded with both Factor 1 and Factor 2 so it was excluded. Oddi (1984), Six (1989b) and Harvey, Rothman and Frecker (2006) included Item 3 in Factor 1 in their respective studies; Item 3 loaded to Factor 3 in Straka's (1996) study. Items 12, 17, and 20 loaded to Factor 2 which corresponds to Oddi's "Self Regulation" factor and had a Cronbach's alpha of .67. Item 21 was excluded from Factor 2 because of its low loading (.41). Item 24 which was included in Factor 2 in the four other studies despite its relatively low loadings of .39 to .48) did not load to any factors in this study so it was excluded. Items 9, 10, 11, 13, 19 loaded to Factor 3 which corresponds with Oddi's "Reading Avidity" factor and had a Cronbach's alpha of .81. Item 11 loaded to Factor 3 in this study, in Harvey, Rothman, and Frecker's study (2006) and in Six's study (1989b) but it loaded to Factor 1 in Oddi's (1984) and Straka's (1996) studies.

Table 4.5 OCLI Subscores and Total Score

	Persisters N₁=241			Non-persisters N₂=49				
	n_1	mean	sd	n_2	mean	sd	t	P
OCLI1 General	241	5.82	1.06	49	5.75	.94	.475	.740
OCLI2 Self-Regulation	233	4.12	1.45	43	4.40	1.39	-1.172	.242
OCLI3 Reading Avidity	233	4.00	1.36	43	4.47	1.27	-2.081	.038
OCLI Total	241	5.15	.90	49	5.26	.83	-.816	.144

n_1 = persisters and n_2 = nonpersisters
Hotelling's Trace value = .022; p = .11

Relationship of Self-Directed Learning and Persistence

A multivariate analysis of variance (MANOVA) showed no significant difference between the two groups on the set of three OCLI subscores (Hotellings Trace = .022, p = .11). Separate independent sample t-tests indicated that only Reading Avidity was statistically significantly different between the groups (t = -2.081, p = .028). As shown in Table 4.5, persisters had a slightly lower reading avidity score than nonpersisters. The average nonpersister score was exactly midway between the endpoints of the one to seven Likert response scale, while that for the persisters was only slightly lower. It should also be noted, however, that this comparison was between a fairly large group of persisters (233) and a relatively small group of nonpersisters (43).

From the box and whisker plots of the subscores (See Figure 4.1), it can be seen that there are a large number of outliers in the General Factor plot for the persisters. These results are interesting because they demonstrate that numerous persisters did in fact score lower on the 12 general questions making up the General Factor despite the means being statistically insignificant when comparing the persisters and nonpersisters. This is a puzzling and contrary to what one would expect to find based on the theory presented in Chapter 2. Further research is necessary (1) when an adequate sample of nonpersisters can be gathered to consider the full meaning of these outliers and (2) to determine variables other than self-directed learning that cold be coming into play for this group of persisting students.

In terms of the Self-Regulation factor distributions, persisters scored slightly lower than nonpersisters. The mean was almost exactly between the endpoints of the one to seven Likert

a. OCLI1 – General Factor
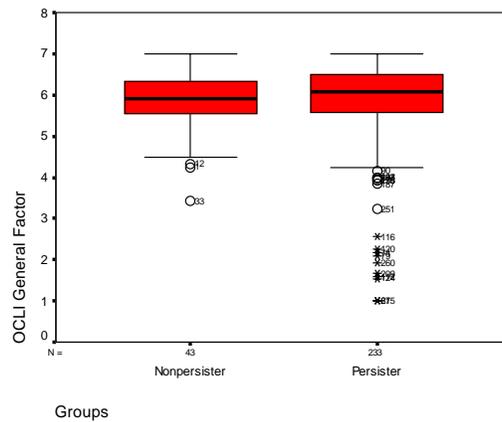
**b. OCLI2 – Self Regulation**
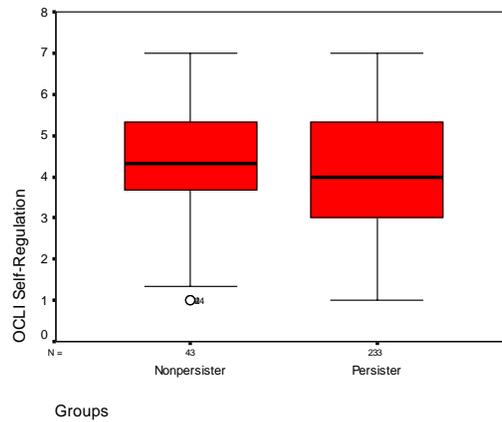
c. OCLI3 – Reading Avidity
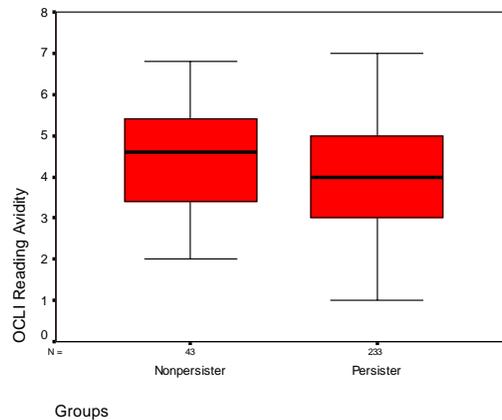
Figure 4.1. Box-and-whisker plots of OCLI subscale scores for nonpersister (n = 49) and persister (n = 241) groups.

Table 4.6 Correlations

	Groups[a]	OCLI1	OCLI2	OCLI3
Groups				
OCLI1	-.028			
OCLI2	-.071	.087		
OCLI3	-.125*	.333**	-.022	
GPA	.297**	-.078	.186**	-.006

[a] Groups coded 0 = nonpersister and 1 = persister.
*   Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Values in the diagonal are Cronbach alpha reliabilities.

response scale while that for nonpersisters was only slightly higher. For the only statistically significant factor from the OCLI, Reading Avidity, persisters again scored lower than nonpersisters. The mean for persisters was very close to the midpoint between the endpoints of the one to seven Likert response scale while the nonpersisters had a slightly higher mean score.

Relationships among Variables

Table 4.6 shows the bivariate correlations for the three OCLI subscores, GPA, and group, which was coded 0/1. GPA had a statistically significant positive moderate to weak correlation (.297) to the grouping variable. This means that the persister group had the higher GPA which agrees with the mean GPAs shown on Table 4.3 (3.46 for persisters and 2.94 for nonpersisters). The OCLI subscore for Reading Avidity had a weak to moderate positive correlation at the .01 level to the OCLI General Factor score which means that those who scored higher on

Those who scored high on Reading Avidity also tended to score higher on the General Factor. Interestingly, Reading Avidity had a statistically significant but weak negative correlation with the grouping variables (-.125 at the .05 level). It can be surmised that the nonpersisters tended to score higher on Reading Avidity than the persisters which agrees with the results from the MANOVA in addition to the means from Table 4.5.

Although self-directed learning as measured by the total score on the OCLI was not statistically significant, the foundation was laid in this study for important future research. The implications of these findings will be provided in Chapter 5 along with the recommendations for this important future research.

CHAPTER 5

DISCUSSION OF STUDY FINDINGS AND RECOMMENDATIONS
FOR FUTURE RESEARCH AND PRACTICE

Chapter 5 presents a discussion of the findings from the study based on the quantitative analysis conducted in this study as presented in Chapter 4. Previous research discussed in Chapter 2, as well as this researcher's experience as an online teacher and college administrator, will be used to speculate about the possible meaning of the results. Limitations and delimitations for this study and implications from these limitations will also be included in this discussion. The chapter concludes with recommendations for future research and for practitioners in the areas on online learning and self-directed learning.

Discussion of Study Findings

As discussed in Chapter 4, a multivariate analysis of variance (MANOVA) showed no statistically significant difference between persisters and nonpersisters on the set of three OCLI subscores. Although they used different instruments, this agrees with the findings of Pachnowski and Jurczyk (2000) and Aragon and Johnson (2008). Separate independent sample t-tests indicated that only Reading Avidity was statistically significantly different between the groups. Surprisingly, nonpersisters had a slightly higher mean Reading Avidity score than persisters but a slightly lower General Factor score although this was not a statistically significant difference. Given what is known about online courses and programs, it was reasonable to expect that persisters would score higher on a measure for self-directed learning. This was not the case with these data, but it should be noted that the lack of responses from the nonpersisters created a sample size discrepancy that certainly made reaching valid conclusions difficult. The lack of statistical significance could have been due to the large difference in size of the two samples (241 persisters versus 49 nonpersisters). Although I did not find a difference between persisters and nonpersisters in the construct of focus in this study, there is more worthwhile work that needs to be done in this area. Because of the proof by contradiction logic of hypothesis testing, finding no difference between the two groups does not prove that there is in fact no difference between the two groups. Perhaps the sample size did not provide enough power to be able to prove the alternative hypothesis. A discussion of this limitation as well as recommendations for this work will be included later in this chapter.

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A curious finding is the extent to which nonpersisters in online courses who began the survey did not complete it. Twenty percent did not persist to finish the entire survey, which means that they did not answer any of the demographic information that could have provided some important and insightful information. Recommendations for handling further research with nonpersisting students will be presented in the next section.

Despite the lack of statistical significance in the analysis used to evaluate the main research question, there were a few findings that should be discussed. The first is the statistically significant difference in GPA between persisters and nonpersisters. Persisters had a mean GPA of 3.46 while nonpersisters had a mean GPA of 2.94. This agrees with the research findings from Muse (2003), Dupin-Bryant (2004), and Nesler (1999). Muse, who was researching course completion in contrast to program persistence that was considered in this study, found that GPA was a statistically significant predictor in the model used to predict course completion. Dupin-Bryant (2004), who was also studying pre-entry variables related to completion and noncompletion of online courses, found that GPA helped to distinguish between individuals who completed online courses and those who did not. Nesler (1999) also found that students with higher GPAs were more likely to be retained and therefore persist to graduation. This suggests that GPA could be a reason for persistence in online courses and programs although causation itself cannot be proven in any of these studies. As a professional teaching online courses and as an administrator working with college students on a daily basis, this makes sense. Students who have higher GPAs are less likely to drop and therefore persist to graduation. This is an important finding because colleges can flag students with lower GPAs or whose GPAs decrease in order to ensure that proactive support services are being offered to them. This will be discussed further in the Recommendations section.

Secondly, it should also be noted that demographically, GPA was the only notable difference between the persisters and nonpersisters. Although there was not a statistically significant difference in the gender distribution between the groups at the .05 level, it was close, with a p-value of .06; the persister group had more females represented. This finding agrees with the findings from Powell et al. (1990), who found that being female was one of several predictors for success in an online course and Aragon and Johnson (2008) who found that females were more likely to successfully complete their online classes.

From a computer usage standpoint, there was a statistically significance difference between how the persisters and nonpersisters connected to the Internet from home; a higher percentage of persisters connected using higher speed choices such as cable, broadband, or FIOS (89% versus 71%). This may not be an accurate assessment due, in part, from the large proportion of missing nonpersisters data. Therefore, it is an important area of follow-up for colleges with online programs because in this study it helps explain the difference between persisting and not persisting students. None of the other studies cited in this dissertation have assessed how students connect to the Internet; however, a few have found that computer-related skills and/or computer confidence to be important in terms of course completion (Dupin-Bryant, 2004; Lim, 2001; Osborn, 2001; Richards & Ridley, 1997).

The box and whisker plots (Figure 4.1) comparing the OCLI subscores of the persisters as compared to the nonpersisters showed a large group of outliers for the persister group in terms of the OCLI General Factor. According to the means as well as the MANOVA, the persisters and nonpersisters were indistinguishable in terms of their OCLI General Factor and OCLI Self-Regulation Scores. This agrees with the box and whisker plots which show that 50% of the respondents in each group fall roughly midway in between the possible Likert responses of one to seven. The outliers, however, suggest that something else is going on with the persisters. This group of outliers is: (1) certainly contrary to what one would expect based on theory behind self-directed learning as presented in Chapter 2, and (2) evidence that there must be much more to the story behind the persistence of online students than self-directed learning. This will be discussed further in the Recommendations section later in this chapter.

Limitations and Delimitations of this Study

This study and its findings were based on the responses of past and present online students from one college. The college may not be representative of all online programs in colleges and universities across the United States and therefore delimits the generalizability of the results.

The small sample size of nonpersisters is an important limitation to note. Because of the small sample size of nonpersisters and lack of responses in general, it would be difficult to conclude that the nonpersisters who responded in this study are a representative sample of nonpersisters in this college and certainly not in other colleges. Furthermore, in order to get to the sample size of 49, it was necessary to send reminder e-mails multiple times; the last e-mail

essentially begged them for cooperation in order to assist me with my dissertation. On a few occasions, I received immediate e-mails back from nonpersisters who were upset to have been e-mailed and who demanded to be taken off my e-mail list. I would categorize several of these responses as hostile and uncooperative. In contrast, all of the persisters responded based on the first e-mail I sent to them. For these reasons, it can be deduced that those who did respond are not a representative sample of nonpersisting online students.

Another limitation of this study was that the nonpersisters showed lack of persistence tendencies with the survey itself. Ten respondents or about 20% began the survey but did not complete any of the demographic information, which was the second half of the survey. In contrast, 15 of the persisters or only 6% of the persisters failed to complete the second part of the questionnaire. This begs the question whether an online questionnaire was the most effective way to gather information from the nonpersisters. I will discuss this further in the Recommendations section.

Recommendations for Future Research and Practice

Despite the limitations, there are some important findings found in this study that should be followed up with in future research. These include the following areas of research and practice: (a) the process for gathering data from nonpersisting students, (b) further investigation into the relationship between GPA and persistence, (c) collecting more data on how students connect to the Internet followed by recommendations for requirements for online students, (d) further research on the group of outlying persisters from this study, (e) further research to determine other potential variables related to online persistence, and (f) further refinement of the OCLI. The hope is that the findings from the recommendations provided below could continue to add to this body of literature and positively impact student persistence and therefore institutional retention in colleges offering online programs.

Gathering Data from Nonpersisting Students

Based on the difficulty in gathering data in this study, it would seem that another alternative should be explored for data gathering from nonpersisting online students. Whenever possible, a face-to-face exit interview should be performed with as many nonpersisting students as possible. Because this may be difficult with distance learners, the next best option is a telephone exit interview immediately following the nonpersister's withdrawal from college. This

will allow for important information to be gathered that may be useful for: (1) re-enrolling that student, or for (2) retaining other students in the future.

Additionally, some open-ended responses gathered during this study help to highlight the importance of ascertaining the student's goal he or she enters the college. If the student's goal is not the attainment of a degree, persistence will rarely be achieved and is therefore not worth studying with this group. Research is certainly needed to determine how many of the non-degree seeking types of students are present in the sample before conclusions can be made.

GPA and Persistence

This study demonstrated that there is in fact a relationship between persistence and GPA. Additional research is needed to determine how strong this relationship is, and in which direction the relationship falls. In other words, do students dropout because they have low GPAs or do they have low GPAs because they drop? Does college GPA truly help predict whether someone will persist or not and what is the cut off GPA that college's should use to determine their at-risk population? These are all questions that could be answered with a follow-up study. Practitioners could then apply this knowledge with early intervention strategies with populations who are at risk based on their current GPA.

A study by Morris, Wu et al. (2005) found that high school GPA was related to course completion. Firstly, high school GPA could be added to the follow-up longitudinal study recommended above in order to gather more data on its relationship with persistence. If this is found to be significant, colleges could take proactive steps immediately upon enrollment with those who may be at risk based on their high school GPAs.

Connection to the Internet

Another finding in this study showed that how a student connects to the Internet was statistically significant. Persisters were more likely to be connecting to the Internet using faster connections. I have not found another study that gathered data on this question, but I certainly believe that it is worth further investigation in future studies. Practitioners should take into account the statistically significant finding in this study and heavily encourage online students to connect using Broadband or more advanced technology. The colleges can use literature in their online orientation sessions that expresses the persistence problems that they may face with the frustration and technical problems that occur when connecting at lower speeds.

Follow-up with Outlying Persister Subgroup

One of the more puzzling results of this study surfaced when looking at the distributions of the OCLI General Factor scores for the group of persisters. While 50% were clustered very close to the midpoint of possible scores, there were an obvious group of outliers who scored very low on the OCLI. A qualitative follow-up study is suggested to explore the reasons for this puzzling finding. This finding also suggests that there is something else besides the score on the OCLI that is different about this group of outliers. Further exploration of what this difference is could be ascertained in a qualitative study.

Variables Potentially Related to Online Persistence

As stated in Chapter 4, no appreciable differences in self-directed learning between the persisters and nonpersisters were found in this study. However, this does not mean that differences do not exist. Based on the theory discussed in Chapter 2, I still believe that further research into this relationship is important. There are a few possibilities for potential follow-up studies. One is a longitudinal study gathering the same type of information as this study. Online students can be given the questionnaire very early in their program and then the students could be tracked as they move through. This would ensure that data are gathered at a time when students are easy to access and would allow for a thorough review of students' records and grades.

The findings of this study suggest that there is much more to the story of online persistence than self-directed learning. What is clear is that online attrition continues to be an issue; therefore, further study into the causes of this problem is needed. This study surfaced three statistically significant variables: (a) reading avidity, (b) GPA, and (c) how the student connects to the Internet. Recommendations for GPA and connection were discussed previously. Reading avidity is another area that deserves attention. Nonpersisters scored higher on reading avidity than persisters in this study, however, the extreme measures that had to be taken to get the nonpersisters to respond to the survey may have only sparked the interest of the nonpersisters who were more avid readers. This could explain the reason for the higher score. It certainly would be interesting to re-test this with a larger sample of nonpersisters. It would also be interesting to see if there is a connection between reading avidity and reading comprehension. Powell, Conway, et al. (1990) did find that reading comprehension helped predict passing an

online course. Online courses are often known to have more reading than on-ground courses and this could be one variable that could account for higher attrition rates.

Although not a statistically significant difference between persisters and nonpersisters in this study, work status is another variable that should be further examined. Evidence from the education questions asked in the survey demonstrated that nonpersisters more frequently choose online education because of their work schedule. In addition, both persisters and nonpersisters rated work obligations as the number one problem they face when taking online classes. This is important for practitioners including online faculty to keep in mind when dealing with online students. It would be a shame for the very thing that brought them to online education would be the same thing that would cause them to drop.

Refinement of the OCLI

Finally, there is the need for further refinement of the OCLI. In this study, it was found that four items were not reliable with this set of data. Further research should go into these items to see if the items should be revised or deleted from the instrument if this is going to continue to be an instrument used to measure self-directed learning.

Conclusion

Despite the lack of statistical significance in the relationship between self-directed learning and persistence in this study, there are several important findings that deserve future research. Researchers need to consider more effective means of collecting data from nonpersisters so that a higher response rate can be achieved. The variables that were found to have statistical significance should be examined further. These include reading avidity, GPA, and how a student connects to the Internet. Another finding also merits follow-up: the importance of work obligations to the persistence of online students.

The crisis involving online attrition has not been solved. Online students continue to attrit at higher rates than their on-ground counterparts. Practitioners in institutions of higher education need assistance in identifying the factors that lead to persistence and nonpersistence so that at-risk students in the online population can be identified and offered resources before it is too late.

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Cover Letter to Persisters

From: Mary Kay Svedberg
Sent: Tuesday, August 18, 2009 9:23 AM
To: @listserv.vt.edu
Subject: IMPORTANT survey for [College X] Online students

Dear Student,

You have been selected to participate in this study because you are a student at [College X]. We know that taking online classes can be rewarding for some and difficult for others; we'd like to better understand what some of those rewards and difficulties are. With your assistance, we hope to learn more about the relationship between how you learn, the benefits, and the concerns related to taking online courses. This is an important topic and your responses are critical in helping us better understand these relationships. While there is no direct benefit to you, your participation may be of benefit to future online students.

[College X] has given approval for conducting this survey research with [College X] Online students. This involves collecting data about online students in their courses and programs.

All you need to do is complete an online questionnaire. This is strictly <u>voluntary</u> and will take no more than 15 to 20 minutes of your time. Your responses are <u>anonymous</u>, which means that you cannot be identified. This data collection effort is for research purposes only and your individual responses will *not* be reported or provided to anyone at [College X]. If you are interested in the results of this study, please contact me in a separate e-mail.

To access the questionnaire, PLEASE CLICK ON THE URL below or copy and paste the URL into your browser. By doing so you are consenting to participate in the study.

https://www.surveymonkey.com/s.aspx?sm=_2ffqlFialpipC45xF7aULag_3d_3d

<u>Your participation is greatly appreciated and is invaluable to this study!</u> I hope you will take the time to complete this questionnaire. If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact any of us at the e-mail addresses below.

Sincerely,

Mary Kay Svedberg
Doctoral Candidate, Virginia Tech
msvedber@vt.edu

Clare Klunk, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
cdklunk@vt.edu

Gabriella Belli, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
gbelli@vt.edu

Learning Inventory

BEHAVIORS

How To Respond

This is a set of statements designed to collect information on how you approach learning. There are no "right or "wrong" answers to these statements. Read each item and choose the response that best indicates how much you agree or disagree that the item describes your behavior. Do not think too long about the statement. Your first reaction will usually be your most accurate response. If you have difficulty responding, select the response that is least objectionable and move on. Please select only **ONE** response to every statement. Please respond to **EVERY** statement.

1. Please select a response from strongly agree to strongly disagree or undecided

	1	2	3	4	5	6	7
	Strongly Agree			Undecided			Strongly Disagree
I successfully complete tasks I undertake.	○	○	○	○	○	○	○
My work is beneficial to society.	○	○	○	○	○	○	○

Based on the licensing agreement between Lorys Oddi and Mary Kay Svedberg for the use of the Oddi Continuing Learning Inventory (OCLI), a copy of the instrument cannot be included with this study.

Above are the directions for completing the instrument as well as two sample questions. The full instrument contains 24 items. Please contact Lorys Oddi for access to the OCLI.

Learning Inventory

ONLINE COURSES

The following questions relate to your experience in online courses at ▮▮▮▮▮▮▮. Please select or type in your response.

4. To what extent does each of the following represent a reason for why you took an online course at ▮▮▮▮▮?

	1 Not at all important	2	3	4 Very Important
Convenience	○	○	○	○
Low cost	○	○	○	○
Only place I could find my major	○	○	○	○
Not having to commit to a specific class meeting time	○	○	○	○
Prefer not to commute	○	○	○	○
Flexibility	○	○	○	○
Pace of the program	○	○	○	○
Reputation of the school	○	○	○	○
Work schedule	○	○	○	○
Recommendation by employer	○	○	○	○
Because there is also an on-ground campus in my area	○	○	○	○

5. Please give any other reason(s) that you are/were taking online classes.

Learning Inventory

ONLINE COURSES - PART II

6. Do you plan to sign up for online classes at ▮▮▮▮▮▮ **next term?**

○ Yes

○ No

7. Have you ever withdrawn from an online class?

○ Yes

○ No

8. If your answer to #7 is YES, please list the reason(s) why you withdrew.

[text box]

Learning Inventory

ONLINE EXPERIENCE

9. To what extent does each of the following represent a problem with taking an online course.

	1 Not at all a Problem	2	3	4 Very Much a Problem
Not easy to access the Internet	○	○	○	○
Slow connection speed to the Internet	○	○	○	○
Family obligations	○	○	○	○
Work obligations	○	○	○	○
Weak computer skills	○	○	○	○

10. Please give any other problems or difficulties with taking online courses.

11. To what extent is each of the following true?

	1 Not at all true	2	3	4 Very true
My learning experience online has met my expectations.	○	○	○	○
Overall, I am satisfied with my experience in online classes.	○	○	○	○
I am likely to take online courses again.	○	○	○	○

Learning Inventory

COMPUTER BACKGROUND

Please select or type in your responses to the following questions concerning your computer usage.

12. Where do/did you primarily use a computer to complete your online courses?

◯ Home

◯ Work

◯ Public Library

◯ On-ground campus computer lab

◯ On-ground campus library

◯ On-ground campus WIFI

Other (please specify)

[   ]

13. Please explain the reason(s) for using that location.

[   ]

Learning Inventory

COMPUTER BACKGROUND - PART II

14. How do you connect to the Internet from home?

- ◯ Don't connect from home
- ◯ Dial-up
- ◯ DSL (high speed dial-up)
- ◯ Broadband (cable)
- ◯ Fios (fiber optic)
- ◯ Don't know

Learning Inventory

EDUCATION

The following demographic questions are needed to describe the basic characteristics of the respondents as a group. Only aggregate data and no individual responses will be reported.

15. How long was it between your graduation from high school (or equivalent) and when you started your program at ▮▮▮▮▮?

Years	
Months	

16. What is the most recent degree you are/were pursuing at ▮▮▮▮▮?

☐ Bachelor's

☐ Associate's

17. What is/was your major?

	Associate's	Bachelor's
Degree		

Learning Inventory

EDUCATION - PART II

18. How many terms have you completed/did you complete at ▮▮▮▮ **College Online?**

Terms   [   ]

19. How many credits have you completed/did you complete at ▮▮▮▮ **College Online?**

Credits   [   ]

20. How many courses have you completed at ▮▮▮▮ **Online?**

Courses   [   ]

21. What is/was your cumulative grade point average (GPA) at ▮▮▮▮ **?**

GPA   [   ]

Learning Inventory

DEMOGRAPHICS

22. Are you the first generation in your family to attend college?

◯ Yes

◯ No

23. What is your gender?

◯ Male

◯ Female

24. What is your marital status?

◯ Single   ◯ Married   ◯ Divorced   ◯ Widow(ed)

25. What was your age on your last birthday?

Age   [_____]

Learning Inventory

DEMOGRAPHICS - PART II

26. What is your work status?

◯ Not employed　　　◯ Working part-time　　　◯ Working full-time

27. How many children do you have living at home?

Children　[　　　　　　　　　　]

28. Is English the primary language spoken in your home?

◯ Yes

◯ No

29. Are you of Hispanic origin?

◯ Yes

◯ No

Learning Inventory

DEMOGRAPHICS - PART III

30. What is your race?

- ○ American Indian or Alaska Native
- ○ Asian
- ○ Black or African American
- ○ Native Hawaiian or Other Pacific Islander
- ○ White

Learning Inventory

Thank You

You are almost finished!

Please press Done

APPENDIX B: E-mails to Nonpersisters

Cover Letter to Nonpersisters

From: Mary Kay Svedberg
Sent: Tuesday, August 18, 2009 9:28 AM
To: @listserv.vt.edu
Subject: IMPORTANT survey for online students

Dear Student,

You have been selected to participate in this study because you were a student at [College X]. We know that taking online classes can be rewarding for some and difficult for others; we'd like to better understand what some of those rewards and difficulties are. With your assistance, we hope to learn more about the relationship between how you learn the benefits, and the concerns related to taking online courses. This is an important topic and your responses are critical in helping us better understand these relationships. While there is no direct benefit to you, your participation may be of benefit to future online students.

[College X] has given approval for conducting this survey research with [College X] students. This involves collecting data about online students in their courses and programs.

All you need to do is complete an online questionnaire. This is strictly <u>voluntary</u> and will take no more than 15 to 20 minutes of your time. Your responses are <u>anonymous</u>, which means that you cannot be identified. This data collection effort is for research purposes only and your individual responses will *not* be reported or provided to anyone at [College X]. If you are interested in the results of this study, please contact me in a separate e-mail.

To access the questionnaire, PLEASE CLICK ON THE URL below or copy and paste the URL into your browser. By doing so you are consenting to participate in the study.

https://www.surveymonkey.com/s.aspx?sm=YtnZwMMbTSwMvMISTBMe_2fg_3d_3d

<u>Your participation is greatly appreciated and is invaluable to this study!</u> I hope you will take the time to complete this questionnaire. If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact any of us at the e-mail addresses below.

Sincerely,

Mary Kay Svedberg
Doctoral Candidate, Virginia Tech
msvedber@vt.edu

Clare Klunk, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
cdklunk@vt.edu

Gabriella Belli, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
gbelli@vt.edu

Follow-up e-mail #1 to Nonpersisters

SmartZone Communications Center Collaboration Suite   ███████████████

IMPORTANT: Survey for FORMER online students

Tuesday, August 25, 2009 12:03:13 PM

From: ███████████████

To: ███████████ @listserv.vt.edu

Recently you should have received an email request to participate in a survey about online courses. While I realize that you are probably no longer an online student, you were in at least one online course in the past. My doctoral research is aimed at learning about difficulties that people have with online courses and your experiences and opinions are very valuable to complete this research. I hope that you will take the time to go to the following URL and respond to the questions about your past experiences with an online course. I've also included the previous e-mail below.

https://www.surveymonkey.com/s.aspx?sm=YtnZwMMbTSwMvMISTBMe_2fg_3d_3d

Thank you for your consideration. Please let me know if you have any questions. If you have already responded to the survey, thank you VERY MUCH!

You have been selected to participate in this study because you WERE a student at ███████ Online. We know that taking online classes can be rewarding for some and difficult for others; we'd like to better understand what some of those rewards and difficulties are. With your assistance, we hope to learn more about the relationship between how you learn, the benefits, and the concerns related to taking online courses. This is an important topic and your responses are critical in helping us better understand these relationships. While there is no direct benefit to you, your participation may be of benefit to future online students.

All you need to do is complete an online questionnaire. This is strictly voluntary and will take no more than 15 to 20 minutes of your time. Your responses are anonymous, which means that you cannot be identified. This data collection effort is for research purposes only and your individual responses will *not* be reported or provided to anyone at ███████████████. If you are interested in the results of this study, please contact me in a separate e-mail.

To access the questionnaire, PLEASE CLICK ON THE URL below or copy and paste the URL into your browser. By doing so you are consenting to participate in the study.

https://www.surveymonkey.com/s.aspx?sm=YtnZwMMbT5wMvMISTBMe_2fg_3d_3d

Your participation is greatly appreciated and is invaluable to this study! I hope you will take the time to complete this questionnaire. If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact any of us at the e-mail addresses below.

Sincerely,

74

Mary Kay Svedberg
Doctoral Candidate, Virginia Tech
msvedber@vt.edu

Clare Klunk, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
cdklunk@vt.edu

Gabriella Belli, PhD
Dissertation Committee Co-Chair and Professor, Virginia Tech
gbelli@vt.edu

Follow-up e-mail #2 to Nonpersisters

SmartZone Communications Center Collaboration Suite ▮▮▮▮▮▮▮▮▮▮▮▮▮▮

Last chance for FEEDBACK   Monday. September 14. 2009 11:09:04 AM

From: ▮▮▮▮▮▮▮▮▮▮▮▮▮

To: ▮▮▮▮▮▮▮▮▮▮@listserv.vt.edu

I desperately need your help in order to gather information for my doctoral dissertation. Below is the link for a short survey about your past experience in online courses. It should only take you 5-10 minutes to complete, it is anonymous and your previous institution will not be given any specific information about your personal responses. Without your responses, I have no study. Please help me to help others learn from your experience.

PLEASE CLICK ON THIS LINK TO TAKE THE SHORT SURVEY
https://www.surveymonkey.com/s.aspx?sm=YtnZwMMbTSwMvMISTBMe_2fg_3d_3d

Thanks in advance for your assistance!

Mary Kay Svedberg
Doctoral Student - Virginia Tech

APPENDIX C: IRB document

VirginiaTech
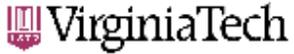
Office of Research Compliance
Carmen T. Green, IRB Administrator
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4358 Fax 540/231-0959
e-mail ctgreen@vt.edu
www.irb.vt.edu
FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: March 25, 2009

MEMORANDUM

TO: Gabriella M. Belli
Mary Svedberg
Clare Klunk

FROM: Carmen Green

SUBJECT: **IRB Exempt Approval:** "The Relationship Between Self-Directed Learning and Persistence in Online Asynchronous Undergraduate Courses", IRB # 09-301

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status. Approval is granted effective as of March 25, 2009.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE UNIVERSITY AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

# APPENDIX D: Permissions to Use Figures and Instrument

LICENSE AGREEMENT

Lorys F. Oddi (Licensor) hereby grants a license under the copyright on the Oddi Continuing Learning Inventory (OCLI) to the undersigned Licensee on the following terms and conditions:

1. The license is granted only for use of the OCLI in research to be undertaken by the Licensee as specified in the research proposal provided herewith by the Licensee.

2. The license is granted on a royalty-free basis provided the OCLI is used only for the specified research. Any use of the OCLI for other purposes is strictly prohibited without the express written authorization of the Licensor.

3. The Licensee shall include the following statement in any written report (published or communicated to others) of the research undertaken with the use of the OCLI: "For the purposes of this research, a royalty-free copyright license for the use of the OCLI was granted by Lorys F. Oddi."

4. The Licensee shall provide the Licensor with a copy of the final version of any written report (published or communicated to others) of the research undertaken with the use of the OCLI.

5. The Licensee shall provide Licensor with item scores and demographic data, which shall be used only for further development of the OCLI.

6. A copy of the OCLI will **NOT** be published or included with study report.

AGREED this ___7th___ day of ___Oct___, 2008.
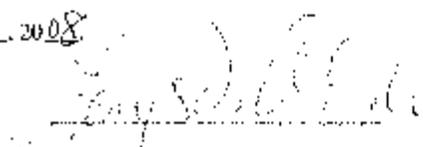
_____
Lorys F. Oddi   (Licensor)
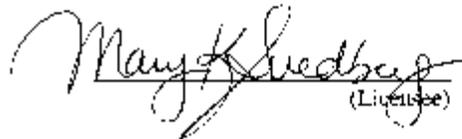
_____
Mary K. Swedberg   (Licensee)

Licensee's research proposal attached.

SmartZone Communications Center Collaboration Suite   ▬▬▬▬▬▬▬▬▬

RE: Permission to use figures from 2003 article   Tuesday, January 26, 2010 1:43:00 PM

From: alfrova@regent.edu

    To: ▬▬▬▬▬▬

Good afternoon,

You may use the figures you identify in your re-mail in your dissertation. However, make sure you cite the source (i.e., the 2003 article from Internet and Higher Education).

Best wishes for your defense.

Alfred P. Rovai, Ph.D.
Associate Vice President, Academic Affairs, Regent University
1000 Regent University Drive, Virginia Beach, VA 23464-9800
757.352.4861

From: Mary%20Kay%20Svedberg [mailto:▬▬▬▬▬▬]
Sent: Tuesday, January 26, 2010 11:45 AM
To: Alfred Rovai
Subject: Permission to use figures from 2003 article

Dr. Rovai,

I am a doctoral student at Virginia Tech. I am currently set to defend my disseration on the relationship between self-directed learning and persistence in online programs this spring. I would like to request permission to use Figure 1 on page 4 and Figure 2 on page 6 of your article entitled "In search of higher persistence rates in distance education online programs" from *Internet and Higher Education* in 2003. I have attempted to get permission through the publisher without success because of difficulties with their website.

I look forward to hearing back from you and thank you for your consideration,

Mary Kay Svedberg

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SmartZone Communications Center Collaboration Suite

RE: Copyright permission for PRO figure   Saturday, October 04, 2008 12:54:23 PM

From: brockett@utk.edu
To: ████████████
Cc: ████████████
Sender: brockett@utk.edu

Dear Mary Kay,

Thanks for your message. Roger and I hold the copyright to the book since it
is now out of print. We
are happy to give permission for you to reprint Figure 2.1; please be sure to
cite the source.

Your study sounds really interesting. Good Luck with it.

Best,

Ralph

------- Original Message From ████████████ (Mary Kay Svedberg) -------
>Drs. Brockett and Hiemstra,
>
>I am a doctoral student at Virginia Tech. I am currently writing my
dissertation on the relationship
between self-directed learning and persistence in online programs. I would
like to request permission
to use Figure 2.1 on page 25 of your book Self-Direction in Adult Learning:
Perspectives on Theory,
Research, and Practice in my dissertation.
>
>I look forward to hearing back from you,
>
>Mary Kay Svedberg

"We should not let our fears hold us back from pursuing our hopes."
                                      - John F. Kennedy

Check out my web site at www.ralphbrockett.com