

**Success Factors Among Community College Students in an
Online Learning Environment**

by
Paula B. Doherty

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Success Factors
Among Community College Students
In an Online Learning Environment

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Paula B. Doherty

A dissertation submitted in partial fulfillment of the requirements for the
degree of Doctor of Philosophy

School of Computer and Information Sciences
Nova Southeastern University

April 15, 2000

We hereby certify that this dissertation, submitted by Paula B. Doherty, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

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Nova Southeastern University

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An Abstract of a Dissertation Submitted to Nova Southeastern University
In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Little is known about student success in online learning environments, especially how the predisposing characteristics that the learner brings to the learning environment may differentially affect student outcomes. This study explored the question of whether a student's "readiness" to be a self-directed learner is a predictor of student success in an online community college curriculum. The specific goal of this investigation was to determine whether there was a significant relationship between self-directed learning readiness—as measured by Guglielmino's (1977) *Self-Directed Learning Readiness Scale* (SDLRS)—and student success—as measured by course completion, grade point average (GPA) and student satisfaction, the latter assessed by student responses to an opinion poll.

The subjects of this study were community college students in the state of Washington, enrolled in one or more transfer-level online courses delivered via WashingtonONLINE (WAOL) during fall quarter 1999. Students who voluntarily chose to respond to two elective surveys comprised the study sample.

A correlational research design was used to test the explanatory power of self-directed learning readiness and to describe the relationships between variables. Since this study was designed to test hypothesized relationships, the resulting correlation coefficients were interpreted in terms of their statistical significance. The expected outcome of this study was to confirm or disconfirm a statistically significant relationship between self-directed learning readiness and student success in an online community college curriculum. The findings of this study failed to achieve this outcome due to (1) the lack of statistical reliability of the SDLRS among the subject population; (2) the resulting lack of validity of the SDLRS among the study sample; (3) a nonresponse effect; and (4) a self-selection effect.

The unanticipated outcome of this study was evidence that student perception of student/instructor interactions is a single variable predictor of student success among community college students in an online learning environment.

Recommendations for further study include Web-specific research methodologies that address the potentially deleterious effects of nonresponse and self-selection in cyber-research environments and continued exploration of the multiple facets of student success in asynchronous learning domains.

Acknowledgements

John Donne's now famous statement that no *person* is an island, entire of itself (1624) is never more true than during the course of a research project that touches the lives of countless people. The implementation of this doctoral study could not have occurred without the earnest participation of 258 students enrolled in Washington ONLINE (WAOL) during fall quarter 1999. Those who voluntarily responded to two separate surveys did so, in great part, to contribute to the ongoing improvement of teaching and learning in an environment in which we are all still learners.

Equally essential to the implementation of this study was the support and assistance of a number of valued colleagues, and much of it occurred at a distance, asynchronously. I want to especially acknowledge Connie Broughton, executive director of Washington ONLINE, whose gracious support was critical to the dissemination of e-mail communications to students and faculty as well as to the retrieval of WAOL-specific data; Loretta Seppanen and David Prince, at the Washington State Board for Community and Technical Colleges, who facilitated access to student data statewide; Apa Sunriver, administrative assistant at Peninsula College, who constructed and managed multiple Web pages that provided a venue for both the administration of survey instruments and the subsequent distribution of the resulting data; and all of my very remarkable colleagues at the Peninsula College Library/Media Center, who enrich my professional life daily.

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Finally, I wish to dedicate the effort that this study represents to my husband, Mike Doherty, an archetypical self-directed learner whose own learning continues to add value to mine, and to three learners whose futures will be shaped by a world in which learning is lifelong, anywhere and anytime: Eóin Connemara O. Doherty, Conn Pádraic O. Doherty and Killian Bryan O. Doherty.

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Chapter I

Introduction

Background

Paradigm “shifts” signal fundamental changes that occur when existing frameworks fail to meet current needs (Zomorrodian, 1998). A paradigm shift is occurring in higher education (Roberts, 1997). The demands of a knowledge economy require learning to be a life-long endeavor, mandating convenience and accessibility. As a result, some scholars predict that telelearning will become the norm (Strauss, 1998). According to Judith S. Eaton, current president of the Council for Higher Education Accreditation, this paradigm shift represents “a change of magnitude comparable to the establishment of the land grant institutions, the GI bill and community colleges” (Eaton, 1998).

Acknowledging this paradigm shift, James J. Duderstadt (1997), president emeritus of the University of Michigan, argues that higher education must evolve rapidly to engender a new learning culture.

[E]ven an enterprise dominated by asynchronous learning--anytime, anyplace, for anyone--may be only a transitional stage to a more radical future for higher education. Perhaps a more appropriate future for higher education--indeed, all of education—is that of a ubiquitous, pervasive learning environment--everytime, everyplace, for everybody. Indeed, in a world driven by an ever-expanding knowledge base, continuous learning like continuous improvement has become a necessity of life. (Duderstadt, 1997, p.10).

Educators and analysts alike predict that the popularity of cyber-learning will explode in the coming years (Kokmen, 1998; Strauss, 1998; White, 1999). In its second survey of distance education programs, the U.S. Department of Education reports that 1.6 million students were enrolled in 54,000 online courses in 1998 (Carnevale, 2000). It is expected that by the year 2007, nearly half of all adult learners enrolled in postsecondary education will take some of their courses via distance learning (White).

Although much of the early design and development of online curricula occurred among baccalaureate institutions, community colleges are also riding the wave of cyber-education. A prominent example is Colorado Community College Online, offering fully accredited associate degrees and certificates in various disciplines (<http://ccconline.org/>). In the state of Washington, thirty-two community and technical colleges rolled out an online associate in arts degree in the fall of 1998 through WashingtonONLINE (<http://www.washingtononline.org/>). Yet, unlike most four-year colleges and

universities, community colleges are open-door institutions, serving a heterogeneous body of students with a diverse palette of skills, needs and academic preparedness.

The demand for online courses appears to be highest among those who may be the most vulnerable learners—entry-level students (S. LeBreton, e-mail posting to multiple recipients of list VOCNET, December 1, 1998). Community college students may be the highest at-risk population of cyberlearners due to the varied and open-door mission of a community college. Many are from disadvantaged socio-economic groups (Washington). Yet, there is some evidence that distance education is a particularly appealing way for students from disadvantaged socio-economic groups to enter higher education (Thompson, 1998). Eastmond (1995) reports that all of the students in his study of a computer conferencing distance education program at a college for adult students represented the first generation in their families to obtain a higher education degree (as cited in Thompson).

The “culture of learning” varies by socioeconomic class, by ethnic community, by region and even by gender—it is not a single undifferentiated phenomenon (Jarvis, 1987; as cited in Candy, 1991). One of the most influential factors affecting self-directed learning is the way in which individuals have been socialized to think about learning and about themselves as learners (Candy). While the life circumstances of community college students may constrain their ability to be successful self-directed learners, these same circumstances may propel them into learning choices that require self-direction in learning.

Thus, some would argue that it is especially incumbent upon community college educators to be cognizant of student success factors in an anywhere, anytime learning environment. Yet, distance education programs for adult learners have been largely neglected by developers of diagnostic instruments to identify students' level of academic preparedness (Melburg, Lettus & Bonesteel, 1993). The educational literature has not produced validated instruments for assessing success factors among online learners. Maggie McVay, a member of the faculty at Franklin University and author of the book *How to be a Successful Distance Student: Learning on the Internet*, remarked that "the entire area of distance learning assessment is wide open for doctoral work. It is something every school is clamoring to evaluate, but few have the time or opportunity to spend extensive research on" (M. McVay, personal communication, October 31, 1998).

As institutions understand the characteristics, circumstances and skill sets of successful learners in asynchronous, remote learning environments, they will be positioned to provide learner-centered guidance to prospective cyber-learners. Although some may lament the cacophony of learning choices on the Web, educators must strive to mitigate the dissonance that can result from a learning experience that is incompatible with a student's unique set of learning attributes.

The ability of educational institutions to fulfill their responsibility of appropriately serving a diverse population of distance learners will depend both on the knowledge gained from further student-centered research and on the flexible programming and learner support systems made possible by current and emerging distance education technologies. (Thompson, 1998, p.20).

The evidence already suggests that if community colleges “build it, they will come” (Eastmond, 1995; as cited in Thompson, 1998; Gladieux & Swail, 1999). The evidence also suggests that situational factors, such as place or time constraints, frequently determine the type of instructional method a learner will seek, whether or not it is compatible with his or her learning preferences or aptitudes (MacBrayne, 1995b; Thompson, 1998). In a study of deterrents to participation in adult education, Darkenwald and Valentine (1985) discovered that respondents assigned a greater importance to time constraints than to any other barrier. Ninety-five percent of community college telecourse students, who were surveyed regarding perceived barriers to on-campus attendance, identified time constraints as either ‘very important’ or ‘somewhat important’ (Hezel & Dirr, 1991; as cited in Thompson). MacBrayne found that the majority of the 672 rural adult students enrolled in associate degree courses with the Community College of Maine’s distance education program in the fall of 1989 would not have pursued their educational goals, despite the strength of their aspirations, had college courses not been conveniently available. Liviertos and Franks (1996) report that 82% of students surveyed identified lack of time for on-campus attendance as a very important motivation for enrolling in a telecourse (as cited in Thompson). Distance learning has become a mode of necessity for many people whose life/work styles, rather than geography, dictate how they can access education and training (Warner & Christie, 1999). Telelearning is less about choice and remoteness today, and more about the pressures of work and life (Warner & Christie).

Spear and Mocker (1984) labeled this phenomenon the *organizing circumstance*. They

found that self-directed learners tend to make their learning decisions based upon limited alternatives, which happen to occur as a result of their individual circumstances and which tend to structure their learning agenda. However, it is probable that other-directed learners make their learning decisions in a similar way, influenced by circumstance.

When the organizing circumstance, whether it be convenience or accessibility, dictates an online alternative to site-based education, the “readiness” of the learner to succeed in an asynchronous and remote environment becomes a central issue. The organizing circumstance may preempt learner preferences for learning context, subsuming a learner’s “readiness” for self-directed learning to the more practical issues of convenience and access.

Learning in a remote, asynchronous and mediated environment, albeit within the context of an institutionally sanctioned curriculum, requires skills that transcend learning aptitude and academic content (Melburg, Lettus & Bonesteel, 1993)—it requires some learner independence and “self-directedness” (Long, 1998). Not all learners are equally predisposed to engage in self-direction in an open learning environment—asynchronous remote learning isn’t for everyone (Ehrman, 1990; Kokmen, 1998). Michael Zastrocky, research director for academic strategies for the Gartner Group, acknowledges that “there are some students who really do not do well outside a traditional classroom... [while] there are some who do very well” (Kokmen, p.1E). Researchers appear to agree that not all adults are self-directed learners (Candy, 1991; Lowry, 1989). Problems of student persistence and completion, which encumber many distance education programs, suggest that some learners may not be prepared to be self-directed learners (Gibson, 1996; Olgren, 1998). For whom, then, is online education likely to be an appropriate choice?

Much of the research on adults in distance education programs indicate that a successful student is one who is highly motivated and possesses good self-management skills (Melburg et. al). Yet, motivation derived from personal need or circumstances may be a confounding variable (Hidi,1990). Distance education is no longer ordained for just the motivated, autonomous learner. Distance education in the 21st century will mean education anytime, anywhere, for anyone (Dillon & Blanchard, 1991). If the ubiquitous technology of the World Wide Web has hastened the shift from an “education for some” paradigm to an “education for all” paradigm, a better understanding of student success factors in online learning environments may well accomplish Pat Cross’s (1976) vision of “education for each” (as cited in Dillon & Blanchard).

Anytime, anywhere education intensifies the quest for predictors of student success in distance learning contexts, and among community college students, in particular (Melburg, Lettus & Bonesteel, 1993; Williams & Hellman, 1998). Studies that have examined students’ orientation toward self-directed learning and self-management have produced mixed results (Thompson, 1998). Some suggest a positive relationship between self-directedness and student performance (Long & Morris, 1996), while others report either no relationship or an inverse relationship (Billings, 1993; as cited in Thompson). Williams and Hellman discovered, in a study of self-regulated learning among first generation community college students, that students who direct their own learning tend to be effective as independent learners. Their findings indicate that students who perceive themselves to be more capable of using self-regulated learning strategies are also more likely to have an associated higher grade point average (Williams & Hellman). Melburg and colleagues assert that student success in nontraditional

instructional programs may be predicted by an assessment of student characteristics essential to self-directed, self-paced, independent study.

There is also a continuing quest for research that reflects the changing nature of self-directed learning (Candy, 1991) within the changing contexts for learning (Long, 1991). Long calls for experimental studies to evaluate self-directedness in different learning environments. Online learning environments are uncharted waters (Roger Hiemstra, personal communication, November 30, 1998). Hiemstra, a prominent author in the field of self-directed learning, confirms that there is little evidence of substantial research in this area. Indeed, Long (1999) concluded his remarks at the *13th International Self-Directed Learning Symposium* with the following assertion: “the opportunities for theory development and empirical research are great” (n.p.).

The opportunity to learn via the Web is growing exponentially (Oberg, 1999), yet there is a paucity of information about how cyber-learning differentially affects learner outcomes, especially as mediated by the characteristics that the learner brings to the learning event (Moore, Corbitt, Wolkstein, & Bausch, 1999). Cyber-education provides both convenience and access—anywhere, anytime and for anyone—yet some students, particularly community college students, may not be “ready” to learn in this new medium. The purpose of this study was to reveal the significance or nonsignificance of self-directed learning readiness in the potentially fragile equation of student success in an online learning.

Statement of the Problem

The problem investigated was whether a student's "readiness" to be a self-directed learner is a predictor of student success in an online community college curriculum. The specific goal of this investigation was to determine whether there is a significant relationship between self-directed learning readiness—as measured by Guglielmino's (1977) *Self-Directed Learning Readiness Scale* (SDLRS)—and student success—as measured by course completion, academic performance and student satisfaction—among community college students enrolled in WashingtonONLINE classes. Washington ONLINE (WAOL) provides an associate in arts curriculum asynchronously.

Research Questions

1. Is course completion in an online learning domain positively associated with a student's self-directed learning readiness?
2. Is academic performance in an online learning domain positively associated with a student's self-directed learning readiness?
3. Is student satisfaction in an online learning domain positively associated with a student's self-directed learning readiness?
4. Is student satisfaction in an online learning domain positively associated with student academic performance, as measured by GPA?
5. Is student satisfaction in an online learning domain positively associated with student perceptions of student/instructor interaction?

6. Is student satisfaction in an online learning domain positively associated with student perceptions of student/student interaction?

Limitations

The limitations of this study were the following:

1. Survey respondents constituted a sample of “convenience,” since only those students who voluntarily chose to respond to two elective surveys comprised the study sample.
2. Since response to the *Self-Directed Learning Readiness Scale (SDLRS)* was voluntary, those oriented toward self-directedness may have been more inclined to respond than those who were not.
3. Since the *Self-Directed Learning Readiness Scale (SDLRS)* had not formerly been administered via the Web, its established reliability and validity were potentially subject to nonequivalence across modes.
4. Since response to both the *Self-Directed Learning Readiness Scale (SDLRS)* and to the *Student Opinion Poll* was voluntary, a nonresponse effect was likely to occur.
5. Since the *Self-Directed Learning Readiness Scale (SDLRS)* and the *Student Satisfaction Survey* were self-report instruments that measure perceptions, they were potentially subject to response bias.
6. Since there appeared to be no accepted standard in the literature for calculating the concept of student success, success was measured according to frequent practice.

7. Since this study spanned multiple courses, multiple content areas and multiple instructors, it did not differentiate the contribution of differing course characteristics to student success.
8. Since a computer-mediated learning environment is substantially framed by the contextual software in which it is situated (e.g. FirstClass, Embanet, WebCT, etc.), student satisfaction reflected in this study cannot be generalized to other online learning environments.

Delimitations

The delimitations of this study were the following:

1. The *Student Opinion Poll*, developed by the researcher, was not normed with any other population of students, in any other context.
2. Although course grades can be variable across different content areas and among different instructors, no attempt was made to equalize course grades.
3. Although course completion was regarded as a measure of student success, reasons for non-completion were not assessed.
4. Incompletes were counted as a “non-completion,” although some may eventually be converted to a passing grade.

Assumptions

This investigation was based on the following assumptions:

First Assumption. It was assumed that self-directed learning readiness is an indicator of student success in an online learning environment.

Second Assumption. It was assumed that the *Self-Directed Learning Readiness Scale* (SDLRS) would be a reliable and valid measure of self-directed learning readiness.

Third Assumption. It was assumed that a student opinion poll would be a reliable and valid measure of student opinion.

Fourth Assumption. It was assumed that course completion, academic performance and student satisfaction are valid measures of student success.

Fifth Assumption. It was assumed that the study sample would be representative of the population of interest.

Definitions of Terms

For the purposes of this study, the following definitions are used:

Achievement: measured by final course grade.

Attitude: a learned predisposition to respond positively or negatively to certain objects, situations, concepts, or persons (Aiken, 1996, p.226).

Attrition Rate: the number of withdrawals from a course after the 10th instructional day.

Autonomy: the ability to learn independently, exercising control over the content and methods of learning (Moore & Thompson, 1997).

Community College: an institution that is regionally accredited to award the associate degree as the highest degree conferred (American Association of Community Colleges; as cited in Smith, 1995).

Completion: measured by a terminal grade of A, B, C, or D (4.0 to 0.7).

Computer conferencing: (1) a type of networked software that facilitates structured asynchronous communications, and/or (2) a process of communicating, learning or decision-making mediated by a computer network application (Eastmond, 1995).

Computer-mediated communications (CMC): any form of organized interaction between people utilizing computer networks as the medium of communication (Romiszowski, 1997).

Construct: a concept or abstraction in the theoretical domain (Bagozzi, 1979; as cited in Grover, n.d.), the characteristics of which may be measured by one or more items in a survey instrument (Newsted, Huff, & Munro, 1998).