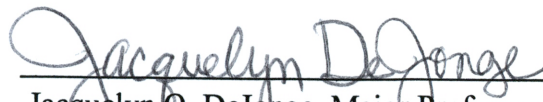
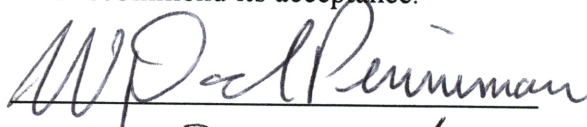


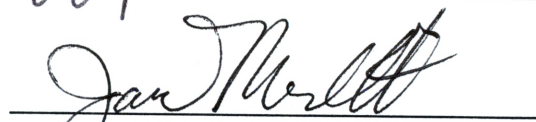
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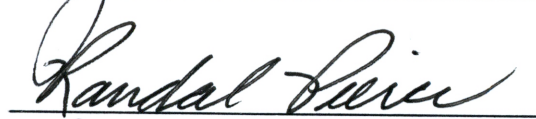
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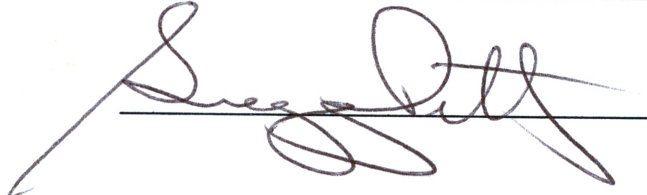

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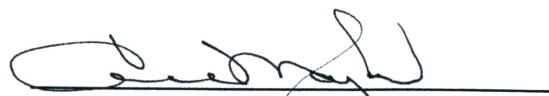








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Graduate Studies

THE RELATIONSHIP AMONG SELF-EFFICACY, INSTRUCTOR FEEDBACK,
AND TECHNICAL SUPPORT OF
LEARNERS IN AN ONLINE LEARNING ENVIRONMENT

A Dissertation Presented for the
Doctor of Philosophy Degree
The University of Tennessee

Lynn M. Hill Willis

May 2002

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2002b
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Dedicated to my grandparents,
Roosevelt and Laura Dickerson
and
Colonel and Bessie Hill,
for the legacy they left behind...
to be carried forward...

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I am grateful to many people for being a part of this educational experience. The Department of Human Resource Development and many others have been instrumental in making this moment possible and I thank you.

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ABSTRACT

The purpose of this study was to examine the relationship among self-efficacy, and two barriers, instructor feedback, and technical support of learners in an online learning environment. An existing instrument was used to measure self-efficacy and two instruments were developed to measure instructor feedback and technical support. From the literature, items were constructed to assess instructor feedback and technical support and were examined by two expert reviewers for relevancy and appropriateness. The 55-item instrument was available online and measured the perception of the online learners with respect to self-efficacy, instructor feedback, and technical support.

The instrument was available for all 163 students in the Department of Human Resource Development at a major university taking a course online. A total of 72 students completed the survey, which yielded a response rate of 44%. The data revealed that no significant differences were found in self-efficacy among learners according to experience, gender, or classification, no interactions were found between gender and classification, between gender and experience, or between experience and classification, and no relationship existed between self-efficacy and instructor feedback or between self-efficacy and technical support. The only significant difference was the positive relationship between instructor feedback and student satisfaction among the learners, $r = .62, p < .01$.

As a result of this study, an expansion of Bandura's triadic reciprocal causation model was proposed for learners in the online environment. Further development of this model would examine the effect of these barriers on the success of learners in the online environment. In addition, autonomous support should be provided for the online learner.

Higher self-efficacy does not suggest that one will not have to handle obstacles, but that one should be able to persist and overcome them when they do occur. Self-selecting strategies should be available online to afford learners greater independence to discover solutions for their concerns and, at the same time, lessen the dependence on instructors to provide immediate solutions.

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CHAPTER I

INTRODUCTION

Distance education is becoming increasingly global, creating a myriad of new alliances. Traditional educational institutions are joining with businesses, foreign governments, and international organizations to offer and use distance learning (Potashnik and Capper, 1998).

The opportunity to learn from a distance is not new. Distance education through correspondence courses dates back to the middle of the nineteenth century (Neal, 1999). Then, around the 1950s, advancements in society enabled education to extend to a broader audience. Closed-circuit television and print and radio were now used to continue to offer education and training to people who lived in remote areas (Robertson and Stanforth, 1999). As in the previous phase, further advancements in society (toward the end of the twentieth century), began the latest method for educating at a distance -- using computer technologies "such as the Internet, WWW, and CD-ROMs" (Robertson and Stanforth, p. 61) to deliver instruction -- online learning.

This new generation of distance education, online learning, has a broad range of purposes, from employer- and employee- on-the-job training and professional development courses to expanding course offerings in higher education (Potashnik and Capper, 1998). As the role of the university has changed, online learning programs have become "catalysts for change and are helping to shape the transformation of higher education from a facilities/faculties-centered environment to a learner-centered one" (Dubois, 1996, p. 19). Education online has become an opportunity for learning

anywhere, anytime (Bruce, 1999). The success of the online programs will rely greatly on the support for the computer technologies used to deliver the education or training.

In American higher education, the development of information technology has become a reality and is forcing traditional higher education to become inclusive, less restrictive, and more accommodating in order to provide post-secondary education to a previously inaccessible population. "The distinctions between elite, mass, and universal access to higher education point to different forms of teaching and learning, to differences in their contexts and uses" (Trow, 1997, p. 294). Information technology has begun to address these issues of access and educational opportunity more comprehensively within the traditional university setting and through universities that only offer distance learning (Potashnik and Capper, 1998). LeJeune (1998) states that web-based instruction is [becoming] an increasingly popular method of delivering college courses.

Adult learners comprise the traditional market for distance education, and while empirical evidence shows that distance students learn as much as conventional students (Potashnik and Capper, 1998), certain learner attributes (e.g., motivation, locus of control, learning styles, metacognitive and executive skills) are predictors of success or failure (LeJeune, 1998).

The success of any program is often attributed to the satisfaction of the customer, as is the case for the distance education environment (Phillips and Peters, 1999). Success in distance learning has been realized. In a study conducted by Phillips and Peters, 1999, 95 students enrolled in a 'principles of marketing' distance learning course completed a survey that measured several areas. One of the hypotheses tested

was the satisfaction level with the course among the students, who were taking the course using compressed video and had been divided into rural and urban/suburban categories. The items measured for satisfaction were the overall satisfaction of the students, whether they would take the course again, and their feelings about the adequacy and the pace of the instruction. The level of satisfaction did not differ between the groups; therefore, the researchers concluded that this method of distance learning met the need of the target category, the rural group.

Other researchers have identified success factors that have been more inherent to the learner – successful or non-successful previous experiences that are brought to a learning situation [(e.g., “cognitive style, personality characteristics, and self-expectations [which] can be predictors of success in distance education programs” (McIsaac and Gunawardena, 1996)]. While it is important to maintain or enhance the successful experiences of learners, it is also important, and perhaps the most challenging, to replace previous non-successful experiences of learners with successful ones. Ineffective learner support and the absence of monitoring success or satisfaction of a course could prove to be consequential to a distance education program.

In addition to the success factors, non-success factors have been identified, some of which are inherent and/or controlled by the learner (e.g., motivation) and others that are perceived as obstacles or barriers to the learner (e.g., ineffective learner support). Phillips and Peters (1999) discussed that a decrease in interaction and accessibility would most likely decrease the satisfaction level among the distance learners. The isolation of learners and the greater need for self-discipline heightens further the necessity to provide support for, the distance learner (Potashnik and Capper, 1998).

Online learning programs are the latest wave of distance education; however, research is limited concerning what makes online courses and online learners successful (Goldsmith, 2000; Potashnik and Capper, 1998). This study will explore self-efficacy and specific barriers to online learning.

Rationale

Previous research supports empirically the connection between self-efficacy and academic performance (Pajares, 1996). Studies conducted in areas such as mathematics and science and engineering courses reported the predictive power of self-efficacy – high self-efficacy toward math was more predictive toward the selection of math as a major than were other factors, such as previous math experiences or grades (Pajares, 1996). The author states further that high self-efficacy of students enrolled in science and engineering courses allowed the students to persist through the academic struggles. The measurement of self-efficacy in the college setting has contributed to a greater knowledge of the indicators to target for the potential success of learners; however this previous research was conducted in the traditional learning environment. What is needed presently is knowledge of the indicators that target the potential success of learners in the online environment.

McIsaac and Gunawardena (1996) stated that because of the growth of distance education programs, researchers should begin to address issues of achievement, motivation, attrition, and control and identify and develop appropriate conceptual frameworks from related disciplines, such as Bandura's Social Learning Theory. Technology had begun to have an impact on distance education as a more assistive tool

(e.g., computer-assisted learning), and the researchers then identified the need to understand the new technologies and their impact on teaching and learning. This study complements the suggestion of these researchers by investigating the self-efficacy of learners in an online learning environment.

Theoretical Framework

According to several researchers, self-efficacy has a strong influence on success or positive outcomes in three general settings: (a) research training environments (Brown, Lent, Ryan and McPartland, 1996; Compeau, Higgins and Huff, 1999), (b) academic settings (Pajares, 1996), and (c) organizational environments (Schaubroeck and Merritt, 1997; Sethi, Meinert, King and Sethi, 1998; Staples, Hulland and Higgins, 1998). Albert Bandura's Social Learning Theory provides the theoretical underpinning for this study and is the foundation on which self-efficacy is built.

The basic assumption of Bandura's Social Learning Theory is that learning is a three-way interaction among environment, personal factors, and behavior that also involves the learner's cognitive processes (Bell-Gredler, 1986). As shown in Figure 1, this three-way interaction, known as "reciprocal determinism", has a bi-directional influence; however, it is not to be assumed that the three determinants are of equal strength (Bandura, 1997). In this context, reciprocal means "mutual action between causal factors" (Bandura, 1986, p. 23) and determinism is defined as being the predominant aspect among the three factors which produced the result, and not the "doctrinal sense" that actions are completely determined from previous events which operated "independently from the individual" (Bandura, 1986, p. 24).

As a result of Bandura's Social Learning Theory, events that are presumed to be simple and easy to learn may actually be complex and entail factors that can directly influence what was thought to be a simple process (Bell-Gredler, 1986). Learning was previously believed to be a simple task; however, Bell-Gredler (1986) states that there are other factors to consider when identifying complex events:

In the classroom, the level of the developmental learner; the nature of the task; the models observed by the learner; ... and the learner's perceptions of his or her work in terms of success or failure are all important influences (p. 5).

Performance accomplishments provide the most dependable source of efficacy expectations because they are based on one's own personal experiences (Bandura, 1977). In order to acquire complex skills, one of the components necessary for accomplished performance is the learner's sense of self-efficacy (Bell-Gredler, 1986). An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes (Bandura, 1977). Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles. "The stronger the efficacy or mastery expectations, the more active the efforts" (Bandura, 1977, p. 79). When activities "are subjectively threatening, but objectively safe, [a higher self-efficacy] can eventually eliminate fears and defensive behavior" (Bandura, 1977, p. 80).

Similarly, learning in an academic environment is influenced by additional factors that are primarily based upon the previous experiences of the learner. [Learners] who have a low sense of efficacy toward academic rigors are more likely to succumb to stressful emotions, such as achievement anxiety, based on their previous experiences

with successes or failures (Bandura, 1977). If, for example, repeated failures are perceived to be the result of personal incapacities, the learner will remain in a state of stress. Conversely, the learner will be “unruffled by failures if they are construed as due to situational factors” (Bandura, 1977). Therefore, the general sense of efficacy of a learner can vary also when dealing with stressful situations.

The factors in Figure 1 are extremely germane to learners who are enrolled in online courses. As stated previously, the three determinants (personal factors, behavior, and environment) have a reciprocal influence on one another, but are not equally weighted. For this study, self-efficacy is the personal characteristic (P) of this model. The factors that affect success in online learning are the environmental characteristics (E). The overall success of the learner is the behavior (B). This study examines the relationship of these factors to the self-efficacy of learners in an online learning environment.

Statement of the Problem

The success of learners is important to the success of a distance education program. The advent of online learning as the latest progression for distance education has created the opportunity to not only continue research efforts which support learners and programs, but also to re-examine support of the distance learner in the online environment.

Success of learners in this setting can be affected directly when non-success factors are present during the learning experience. One measure that will be examined as an indicator to help counteract the effects from non-success factors is self-efficacy.

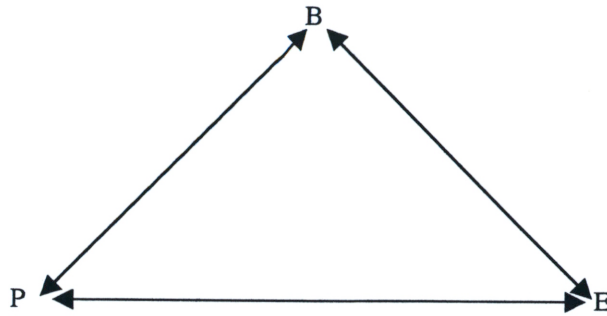


Figure 1. Schematization of the relations between the three classes of determinants in triadic reciprocal causation. B represents behavior; P cognitive and other personal factors, and E environmental influences (Bandura, 1986, p. 23-24).

The results from this study could support the need to understand the impact that factors of non-success can have on learners in an online learning environment, as well as show the need to commit to a continuous improvement process in the development, design, and delivery of online instruction. Learners with higher self-efficacy scores should be more likely to overcome the challenges from non-success factors than learners who have lower self-efficacy scores.

Research Questions

The following research questions are posed by this study:

1. What are the differences in self-efficacy among learners according to experience, gender, and classification?
2. Does a relationship exist between self-efficacy and instructor feedback among learners who are enrolled in a totally online course, as measured by the Instructor Feedback Assessment (IFA)?
3. Does a relationship exist between Item 2 (the instructor provided helpful feedback) and Item 3 (the student was satisfied with the feedback) of the IFA among learners who are enrolled in a totally online course, as measured by the IFA?
4. Does a relationship exist between self-efficacy and technical support among learners who are enrolled in a totally online course, as measured by the Technical Support Assessment (TSA)?

Research Hypotheses

The following research hypotheses have been developed to address research question one. Null hypotheses are included in Chapter IV.

Research Question One

What are the differences in self-efficacy among learners according to experience, gender, and classification?

The choices people make are influenced by their belief that the task can be accomplished (Bandura, 1997, p. 160). In higher education, learners, likewise, make their choice about a major based on their personal belief that they will be successful. Research conducted between self-efficacy and academic performance has shown that higher self-efficacy toward a subject, such as math, was more predictive toward career selection than grades or math experiences (Pajares, 1996). Those with a higher self-efficacy often prefer difficult tasks and are usually committed and persistent to have them completed (Bandura, 1997). To explore this research question further, four null hypotheses are formulated.

Research Hypothesis 1: There are no significant differences among the learners according to experience.

Research Hypothesis 2: There are no significant differences among the learners according to experience.

Research Hypothesis 3: There are no significant differences among the learners according to experience.

Research Hypothesis 4: There are no interactions between gender and classification, between gender and experience, or between experience and classification.

Limitations

1. The study is limited to two factors that can affect success as identified in the literature: instructor feedback and technical support.
2. The study is limited to students taking online courses during one semester from one department in a southeastern university.
3. The study is limited by the data collection method of administering the survey online, where the data could have been lost or the system could have become corrupted (e.g., from a virus).

Definition of Terms

Barrier – A non-success factor that inhibits or detracts from learning

Distance learning – A broad term that encompasses learning through diverse communication technologies, such as video, teleconferences, e-mail, and the World Wide Web (WWW) (Bruce, 1999)

Instructor feedback – Communication from the instructor to the online learner using computer technologies

Non-success factor – A barrier that inhibits or detracts from learning

Online learning – One method of distance learning that includes using computer technologies “such as the Internet and WWW (Robertson and Stanforth, 1999, p. 61) to deliver instruction

Self-efficacy – The ability to persist when faced with barriers

Social Learning Theory – “Encompasses a large set of factors that operate as regulators and motivators of established cognitive, social and behavioral skills”

(Bandura, 1997, p. 35)

Technical support – The assistance necessary to provide hardware and software support to the online learner

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature includes information that is related to online learners in higher education. Influences of change in higher education are discussed first, then self-efficacy and its applicability are presented. Next, characteristics of the online learner are provided, followed by a description of the online learning environment and the effect of environmental constraints on the online learner.

Influences of Change in Higher Education

The primary purpose of traditional, undergraduate education has been to teach students how to think critically (Neal, 1999). Educators should develop students' critical thinking skills for their career success and as a responsibility to democracy (Neal, 1999).

Higher education has been concerned with more than academic enrichment; the process has also enabled students to develop, beyond just the academic boundaries, into whole persons. The Institute for Higher Education Policy (1999) lists the following outcomes for students who complete a college degree: psychosocial changes (identity of self-concept, self-esteem relating to others in the external world), advancement of critical thinking skills, development of attitudes and values, moral development, and career choice and development.

Higher education today is composed of teaching, service, and research; however, concern exists among academicians regarding "the preparation of workers for a competitive, volatile economy" (Van Dusen, 1997). Globalization of the American

economy has caused virtually all societal traditions and norms to shift, or even die, and as higher education continues to prepare workers, it, too, is facing these demands and challenges to its own traditions and norms.

Historically, distance education technologies have offered access to classroom instruction to rural or isolated areas (Hopey and Ginsburg, 1996); however, many universities are making investments in new technologies for teaching (The Institute for Higher Education Policy, 1999). The prevalence of computer technologies has provided higher education with a means to extend education to a population that was once geographically inaccessible.

In the 1950s, federal funding helped support the development of educational television, and the 1960s and 1970s produced the models and concepts of educational technology (Van Dusen, 1997). The use of distance education has expanded over time from correspondence courses to closed-circuit television to the use of computer technology (Robertson and Stanforth, 1999). Webster and Hackley (1997) define the newest method of distance learning as technology-mediated distance learning: learning involving the implementation of information, computing, and communicating technology applications in more than one location.

Federal funding continues to support educational development. One of the provisions of The Higher Education Act of 1965 was the authorization of federal assistance for college and technical school attendance. Included in this legislation were grants for lower income students, known as Pell Grants, guaranteed low-interest student loans for the middle class, and work-study programs (Hulsey, 1992). Since the passing

of this initial law, which is reviewed every five years, amendments have been made to assess the effectiveness of these programs.

The Higher Education Amendments of 1976, 1992, and 1998 primarily revised the federal aid regulations, Title IV of the Higher Education Act of 1965. As a result, students and prospective students were required to receive information about the academic program, accreditation, and standards that must be met, receive detailed information about financial aid, and have exit counseling with respect to student loans incurred. The last amendment prohibited a student from receiving federal aid for a specified period of time with a conviction of a federal or state offense involving the possession or sale of a controlled substance. Beginning in academic year 2000-01, the Department of Education is collecting information from each school regarding costs incurred by the university in providing education, the cost of attendance, the amount of financial assistance received, and the number of students receiving the same. Information collected will be made available to parents and students (The Catholic University of America, 1998).

The Higher Education Act of 1992 included what is known as “the 50-per-cent rule.” Based on a report that revealed government requirements had been violated by correspondence schools, the rule “prohibited institutions that offered more than 50 per cent of their courses through distance education from receiving funds under Title IV of the law, which governs federal student-aid programs. It also barred students at institutions at which more than 50 per cent of the students were enrolled in distance education programs from getting aid (Selingo, 1998; Haworth, 1998). The concern now

was that virtual universities would also be penalized during the growth of the distance learning movement (Haworth, 1998).

The Telecommunications Act of 1996 was created to allow for “a more competitive market for local telephone companies, long-distance carriers, cable-television operators, and electric utilities”, with affordable rates for low- and high-income customers (Association of Governing Boards of Universities and Colleges, 1996). Title V of the Telecommunications Act banned pornography and will penalize those who “distribute “indecent” sexual material to minors”. “Elementary and secondary schools, libraries, and rural health-care facilities” were to receive preferential rates; however it was uncertain if this incentive would be applied to higher education (Association of Governing Boards of Universities and Colleges, 1996).

More recently, to provide greater access to high quality distance education programs, H. R. 342, the Greater Access to Distance Education Act of 2000, was passed. It amends the Higher Education Act of 1965 to require distance education demonstration programs to provide greater access to high quality distance education programs and orientation to distance education for adults, students, and underserved persons who traditionally have had little or no computer knowledge or training. The passing of this legislation further supports distance education and minimizes the barriers of “the 50-per-cent rule”. Federal legislation has had to be re-examined or enacted to support the outcomes from the expansion of technology.

Workforce changes are greatly impacting higher education. As employers have reengineered their business processes in order to survive and remain competitive, the training and education of workers has become more critical. Jobs are changing rapidly

and people are switching jobs more frequently (Neal, 1999). Employees, who were once limited to participating in on-site or local workshops, are now able to receive their training through distance education (Driscoll as cited in Anderson, 1999).

O'Malley and McCraw (1999) notes further additional impacts on higher education. Increased competition for students has universities forming consortiums to offer more flexibility in course offerings. Demographic changes in the student population, coupled with the urgent need for technological skills to be taught and learned, has forced higher education to respond rapidly to these issues. With the growing necessity to have a skilled labor pool, students with experience taking online courses will be more marketable and prepared for this demand (Neal, 1999). Will higher education be poised to embrace these challenges? According to Farrington (1999), "Traditional institutions can be leaders or spectators. The smart ones will choose the former" (p.47).

Distance education is impacting higher education and is being recognized by some institutions "as the next logical step in educational delivery systems" (O'Malley and McCraw, 1999). In order to remain competitive and beneficial, distance education courses are being offered to "increase students' access, increase enrollments and the institution's access to new audiences, and improve the quality of course offerings" (NCES: The Condition of Education 2000).

According to a 1998 report published by the U. S. Department of Education, "Projection of Education Statistics", the annual growth rate for college enrollment is projected to be .8 percent for the years 1996 through 2002 and 1.1 percent for the years 2002 through 2008, an increase of .3 percent over the projection periods. College

enrollment was projected to be 14.3 million in 1996 and approximately 16.05 million by 2008. For public institutions, college enrollment was estimated at 11.2 million in 1996 and 12.5 million by 2008. Both of these college enrollment projections have an increase of 12 percent. Enrollment in 4-year institutions was reported at 8.8 million in 1996 and projected to be 10 million by the year 2008, an increase of 14 percent.

Distance education courses in public 4-year institutions is also increasing. In 1995, 62 percent were offering distance learning courses, and 79 percent were offering these courses in 1997-98, a growth increase of 17 percent. Of the institutions that were not already offering distance education courses, 23 percent were planning to offer these courses in 1995 and an increase of 12 percent to 35 percent was projected for the years 1997-98. For 1995, total enrollment in distance education courses was 754,000 and projected to increase by almost 50 percent to 1.6 million by 1997-98. Increases in the projections for enrollment in college and distance education courses are indicative that change is occurring in higher education and in the method by which instruction is delivered.

Self-Efficacy

“Self-efficacy is not concerned with the skills one has, but with the judgment of what one can do with the skills one possesses” (Sethi et al., 1998, p.6), or more specifically, “the conviction that one can successfully execute the behavior required to produce the outcomes.” (Bandura, 1977, p. 79). The degree to which a person believes that obstacles can be overcome is directly related to the degree to which one will persist when the obstacles occur. Self-efficacy has been studied widely in education; however,

other arenas have begun to examine its impact or influence on the behavior and attitudes of those in organizations.

One study conducted by Staples et al. (1998) examined self-efficacy “for the management of remote workers in virtual organizations.” The researchers wanted to learn more about virtual organizations and how to make the work of remote employees more meaningful. The researchers concluded that self-efficacy would improve the work performance of remote employees and increase productivity.

In another study conducted by Sethi et al, (1998), the self-efficacy of employees in the information systems (IS) industry was investigated. One of the areas studied was the relationship of self-efficacy to specific variables that were identified as important to employee tenure and success. It was suggested that since the enhancement of self-efficacy could be a deterrent to employee turnover, purposeful steps should be taken to realize “greater productivity of IS personnel” (p.1). Current research is confirming the argument that increasing the self-efficacy of a person can have positive effects.

Self-efficacy is a complex theory that has had implications in varied domains, but with some restriction. “Adaptive functioning requires discriminative generalization of perceived efficacy”, where one of at least five processes “can produce some generality in personal efficacy” from mastery experiences (Bandura, 1997). Five of the processes pertain to the areas of: (a) similar subskill (occurs when different classes of activities are governed by similarities), (b) co-development (skills in dissimilar domains are acquired together), (c) generalizable coping skills (allows people to exhibit control over threats), (d) structuring commonalities cognitively (providing people with more than one activity in order to conquer or overcome negative situations), and (e)

transformational restructuring of efficacy beliefs (occurs when personal triumphs serve as transforming experiences) (Bandura, 1997). Applicability of at least one of these processes is likely to extend to or broaden the self-efficacy of a person.

Wise (1999) developed techniques that recreation instructors could “use to increase strength training efficacy and generalize efficacy from the weight room to activities of daily living in people with spinal cord injuries who use manual wheelchairs” (p. 42). An exercise was designed using each of the five processes in order to improve the lives of the participants and afford them greater independence. Increasing the strength training efficacy of those in wheelchairs could prove to be a rewarding experience for both the training instructor and the trainee.

It has been stated previously that Social Learning Theory identifies learning as a three-way interaction among the environment, personal factors and behavior. This exchange, known as reciprocal determinism, establishes the foundation that each of the factors have equal influences on the other, with “equal” being defined as the chance of one or two factors influencing the other and not being defined as effecting or causing one-half of the interaction. Depending on the nature of the activity, any one of the factors could have a greater impact on the outcome.

As stated previously, people make choices, such as the selection of a career or major, with the belief that the task will be accomplished successfully. Bandura surmises that “gender-related efficacy impediments arise less from the discrete skills themselves than from their linkage to stereotypically male occupations” (Bandura, 1997, p. 423). Men and women may differ in their perceived capabilities for various types of occupations, but not “for arriving at decisions about which occupations to pursue” (p.

427). Men may believe they are able to pursue a variety of occupations, but can be less certain about which occupation to pursue, whereas, women are less likely to consider male-dominated occupations as a possible career choice and are equally likely to have difficulty making a selection from the many other career options.

Bandura (1977) declares that “proficient action” “requires subskills that are guided by higher self-regulation skills.” Self-regulation is the amount of control people exhibit over their own behavior. Bell-Gredler (1986) adds that it “includes standards for one’s behavior and capabilities for self-observation, self-judgment, and self-response”, all of which make self-direction possible (p. 251).

A desired goal in teaching is to change behavior. Complex behaviors or skills “are formed through integration of many constituent activities of different origins” (Bandura, 1977, p. 17). Bandura (1977) discusses further that learning can be acquired by three response consequences: to (a) impart information, (b) serve as motivators through their incentive value, and (c) strengthen responses automatically. Learning can occur also through modeling, which has four principal processes: (a) attention, (b) retention, (c) motor production, and (d) motivational. Bell-Gredler (1986) asserts that acquiring complex skills requires more than just modeling behavior. Efficacy beliefs affect thought patterns which can promote or inhibit learning (Bandura, 1997, p. 116). Bell-Gredler (1986) cites Bandura’s (1982) claim that two components are required in order for accomplished performance to be realized. These motivational and behavioral factors are tools that support the learner during the learning process.

Pajares (1996) reveals that the examination of self-efficacy should be task- and domain-specific, as individuals make use of judgments in reference to some type of

goal. One of the problems with the educational research of self-efficacy is that a generalization of attitudes is often compared when a criterial task was never identified for the assessment (p.4). If an act is not defined, and, as a result, is not completed, negative judgments cannot be declared (Bandura, 1997). An act must be defined by the criteria that state what it is” (Bandura, 1997, p. 391-392).

Task identification is important because of its relationship to the belief and outcome concepts. The belief that one can successfully produce the desired outcome (e.g., self-efficacy) has been confused with the belief that a particular behavior will lead to a desired outcome (e.g., outcome expectancy) (Bandura, 1997). “An outcome is the consequence of an act, not the act itself (Bandura, 1997, p. 391). Efficacy beliefs are invoked prior to the completion of an act or behavior, whereas outcome expectancies result from the successful completion of a task. Self-efficacy can lead to positive, desirable results, provided that the guidelines for measurement are applied appropriately.

The Online Learner

Presently, the current wave of distance learning, online learning, is in its infant stage (Downes, 1998). As the opportunities to offer higher education continue to evolve, the importance of understanding the uniqueness of the learners is still critical. Traditional education has been concerned with the success of the learner and research has shown that distance education has had success. As educational opportunities continue to expand, the commitment to provide quality instruction for the success of the learner should remain a priority.

Distance learners are typically adults and share some common characteristics (Sherry, 1996). Learning at a distance has altered from the original pedagogical classroom style to one that is more adult-centered or andragogical. Knowles (1973) describes four key characteristics of adult learners: 1) Changes in self-concept define an adult, psychologically, not chronologically, as a learner for whom self-direction is essential. The failure of an instructor to acknowledge the need for self-direction can stifle the learning experience; 2) the role of experience is important because experience for an adult “is who he is” (p. 46). Knowles states further that individual differences are especially important when dealing with adults because of the variations in these differences that occur with age; 3) readiness to learn becomes more about social roles than biological development as an individual progresses from childhood to adulthood. The desire to learn becomes more important as the adult becomes “worker, spouse, parent, organizational member and leader, leisure time user, and the like” (p. 47); and 4) adults prefer to learn through problem-centered approaches. It is the belief of Knowles that the adult is eager to apply acquired knowledge quickly to lessen the feeling of inadequacy, which is often the purpose of their engagement in a learning activity. These four characteristics are important to the success of adult learners, and instructional approaches that do not aim to respond to these characteristics could foster a negative learning experience. These adult learner characteristics, while researched for the traditional adult learner, are applicable to the online learner, as well.

Learners also have individual characteristics. In addition to possessing different personal characteristics, learners used different approaches and strategies to complete a learning activity. One aspect that describes this uniqueness is “the concept of learning

style” (Merriam and Caffarella, 1991). This term is often interpreted as being synonymous with cognitive style; however, the latter refers to the ways people process, store, and analyze information, while the former is more focused on the individual characteristics of the learner (Merriam and Caffarella, 1991; Smith and Ragan, 1993).

Parallel to this interpretation is the view of Liu and Ginther (1999), who acknowledge that the terminologies of “learning style” and “cognitive style” are used interchangeably, but narrow this distinction to define cognitive styles as relating more to theoretical or academic research and learning styles as relating more to practical application. While both styles focus on learner differences, the ability to identify the learning style of students has helped “educators understand how people perceive and process information in different ways” (Shih, Ingebritsen, Pleasants, Flickinger and Brown, 1998, p. 359).

Limited studies have been conducted that examine the effect of individual differences in the online environment. Goldsmith (2000) states that distance learning studies since 1990 have examined the use of technology and learning, but studies focused on the internet and learning are lacking, as well as the “research into what makes successful online courses and successful online learners.” As online learning moves out of the infant stage, the research opportunities should exist to gain new knowledge for support of the learner in the online environment. Personal characteristics, such as “gender, age, and race” for the online learner, do not stifle the learning environment and allow for greater creativity from group efforts than from face-to-face groups (Mohamad and Ismail, 2000).

Galbraith (1991) defines technology “as the integration of both hardware and knowledge” (p. 136). The merging of technology and education has expanded open-ended learning environments, OELEs, and allowed the learner to extend learning beyond the walls of a classroom. Hill and Hannafin (1997) conducted a study “to identify the strategies” adults use when using the web. As a result of this study, the researchers discovered strong indications that learner control is a factor influencing success for the online learner and can support the individual growth of the learner. The environment was also an effective conduit for students to communicate their ideas as individuals and not only as students whose thoughts were enmeshed into a collective, group effort.

Another study examined “learning strategies and other factors influencing achievement” in web courses (Shih et al., 1998, p. 359). Using an online questionnaire three weeks before the end of the semester, 78 students completed a learning style test. The researchers concluded that the personal characteristics of the learners [(e.g., whether or not they were university students, gender, previous experience in the same subject area, study and work hours per week” (p. 361)] did not have an effect on their learning achievement. The higher a student scored on the use of learning strategies, the higher their achievement in the class. “Different types of students using different learning strategies and patterns of learning with different learning styles can learn equally well in Web-based courses” (p. 363). The researchers suggested that educators use a variety of teaching methods “to assure students’ understanding, integration, and retention of course concepts” (p. 363). While traditional and online learners do not have

identical characteristics, the success of the learner in both settings has a dependence on programs that support learner differences.

Driscoll (1997) also understands the importance of addressing the needs of different kinds of learners. Whether in a traditional classroom or a training environment, Driscoll suggests that the trainer [or instructor] analyze the audience thoroughly before conducting the program. Questions relating to learning styles, prior knowledge, feelings about Web-based training, openness to using Web-based training, and characteristics of the group should be asked first in order to have a successful training session.

Having adults unlearn pedagogical thinking patterns is a difficult task (Neal, p. 3); however, a successful online learning experience requires greater andragogical characteristics from the learner. It should not be assumed that all learners have the same foundation for study skills, and learners need support, particularly when moving from a traditional environment to one that is self-directed (Sherry, 1996). Educators often continue to use a “one-size-fits-all approach” when academic research and practical experience have proven otherwise (Martinez, 1999). All techniques do not work for all learners and it is important to not compromise quality instruction at the expense of favoring technology (Sherry, 1996).

Environmental Constraints

People make choices, and as individuals progress from adolescence into adulthood, the number of decisions and the ability to have sole control over the outcome of one’s decisions increases. The opportunities that exist and the way people manage constraints make a difference in the outcomes (Bandura, 1997). Likewise, adults who

choose to attend a program in higher education can exercise control to overcome obstacles in order to have a successful learning experience. With online learning, the environment is a critical factor for ensuring the success of the learner.

The effect of barriers in learning can be negative and have damaging consequences for both traditional and distance education programs. This is one similarity between traditional and distance education. Rubenson (1986) discussed the roles of existing barriers at the Dutch Open University. Disappointments with technology and unrealistic expectations were given as reasons for the declining participation in adult education.

Rubenson (1986) organized perceived barriers into three categories. The first, situational barriers, occurs from a "person's most immediate situation", such as those issues relating to home and work (p. 41). Tomei (1999) reported that adults who were using technology for learning faced challenges that were described as "too expensive" or "too little time to spare" (p. 72). In a study designed to examine the "barriers to professional education of NSW correctional officers", "time constraints and time management, family commitments and access to support mechanisms" were listed as constraints to participating in the educational program (O'Toole, 1999, p. 295).

The second barrier, institutional, pertains to obstacles in the university and its programs. "Too few opportunities for online access" (Tomei, 1999, p. 72), "poor teaching or poor preparation" (Wade, 1999, p. 98), and the need for "regular, prompt feedback, more interaction with the instructor ... special advisory services" (Gold, 1997) were reasons for discontent among online learners. Rubenson (1986) states that

these barriers arise “from inadequate information about the options which do exist” (p. 43).

Dispositional barriers are described next by the author. Rubenson (1986) explains that these obstacles are seldom categorized because they result from psychological self-assessment. Instruments designed to categorize barrier constraints have “a built-in bias for situational barriers” (Rubenson, 1986).

Bandura also examined the importance of the environment for learning and states that the degree to which one exercises control is dependent upon “the nature and modifiability of the environment” (Bandura, 1997, p. 163). “Operative environments” are categorized as imposed, selected, or created. Imposed environments are the result of the physical and sociocultural setting that people have no control over. Selected environments have rewarding or punishing aspects and occur as a result of the decision or behavior a person exhibits. Once a decision is made, the environment which complements that decision has also been selected (e.g., positive support complements a rewarding environment and unhelpful support complements one that is punishing). The created environment occurs when people seek or create social systems in order to have greater control over their lives. Learners in the traditional and online settings can both select and create the desired environment; however, it would seem that online learners might be more vulnerable to obstacles arising from imposed environments where they have limited control.

The online learning environment is independent of place and time (Downes, 1998). The author explains that time independence allows the learner to organize activities and set priorities (i.e., obligations among home, work, school, civic,

community, etc.), so that deadlines for various activities are completed on time. Place independence allows the instruction to be obtained from more than one location, unlike the traditional method where instruction is presented and received from one location. The ability for a learner to determine or set an instructional schedule according to their situational factors supports the characteristics of an adult learner.

O'Malley and McCraw (1999) describe the time and place independence further. Asynchronous communication (e.g., correspondence courses), is a contingent process: The learners are not able to receive the instruction until the course material is made available by the instructor. Synchronous communication (e.g., online learning), is when the delivery and receipt of course materials occur at the same time. The place of instruction can be categorized as either "same" or "different", depending on whether the location and receipt of the instruction occur in the same place, or whether the instruction is delivered independently of where it is received.

Distance learners who use educational technologies have different characteristics from the traditional, face-to-face learners, primarily with respect to the place independence between the instructor and the learner (Liu and Ginther, 1999). Online learning has allowed education to be accessible to a previously inaccessible population. It has been suggested that this population has a high level of adult learner characteristics.

Another distinguishing characteristic is the commitment of the learner to accept the responsibility for individual choice. "People expend effort and persevere despite difficulties to gain things they value" (Bandura, 1986, p.430). The tenacity of the

learner can be strengthened when the environment is conducive for overcoming challenges.

Barley (1999) identifies distance learning barriers in the areas of technological infrastructure, financial management, and technical support staff. Overloaded servers and long waits to access a server at a university have been cited as additional frustrations for learners (Trow, 1997). Technological strains within the online learning environment, e.g., fiscal constraints and inadequate support, can be burdensome for an online learner. A supportive environment is one that can help minimize frustrations and allow the learner to flourish.

Liu and Ginther (1999) identified two facets for constructing a supportive distance learning environment: First, various learning styles should be supported through the design of the instruction. Online contact is necessary and electronic sources, such as email and chatrooms, for feedback to and from the instructor make communication possible. Second, the absence of face-to-face contact increases the importance of having communication and technical support readily accessible in the online environment.

One similarity between traditional and online learning is the impact of the environment on the learner. Although Dominguez and Ridley (1999) state that the difference between distance education learners and traditional learners has not been significant, the selection of a ubiquitous environment has not been trivial for the distance education learner. Conflicts can, and do, occur within this operative environment, and online learning is no exception.

Cleeton (1991) studied learning barriers “to classify perceptions” and determine if the perceptions stemmed from “the reality of achievement”. Robertson and Stanforth (1999), in researching “College students’ computer attitudes and interest in Web based distance education” found that among their sample, the students were comfortable using technology, but had anxiety about using it (p. 63). When cognitive styles were examined by Liu and Ginther (1999), ineffective learning strategies were cited as a possible reason for the lack of achievement in distance learners. The analyses of barriers in the online learning environment also identified the effect of non-success factors in the online environment and should be of particular interest to researchers and practitioners of online education.

The classification of barriers in distance education has been beneficial, particularly for learners who have a high need “to overcome situational and institutional barriers” (Rubenson, 1986, p. 45). It appears still, however, that more research is needed to identify accurately dispositional barriers within the online learning environment. Haehl (1996) suggested that “removing both external and internal barriers for adult students can increase the likelihood of greater enrollments, higher student satisfaction, and increased student retention and persistence”. Higher self-efficacy and a supportive environment (e.g., communication with the instructor and assistance from technical staff), should minimize barriers and promote success for the online learner.

Summary

The review of literature has been presented to provide insight into specific factors regarding the online learning environment. From a broad perspective, the advancements of technology have resulted in changes for higher education. New and amended legislation, as well as the current and projected growth of higher education are indications that recent developments in distance education should be embraced.

Online learning, the most recent phase of distance education, allows greater opportunities for access to higher education and has implications for learner success. Online learners have adult learner characteristics and also have individual differences in learning styles and learning strategies. As with traditional learning, the environment is a primary factor in the instructional process and environmental factors that inhibit success can affect learner outcomes. Online learners rely upon technology to complete the tasks for course assignments, and a supportive environment is one that minimizes barriers, such as inaccessible communication capability and inefficient technical support. Barriers in online learning should be minimized in order to support and promote learner success.

CHAPTER III

METHODOLOGY

This study was designed to determine the existence of a relationship, based on the self-perception of on-line learners, in the areas of self-efficacy, instructor feedback, and technical support. Barriers to learning in a traditional classroom environment have been researched and tested; however, barriers to learning in the new environment of online education continue to be researched. A reliable instrument had been selected to measure self-efficacy, but an appropriate instrument has not been identified to measure instructor feedback and technical support.

From the literature, the researcher constructed questions in two categories: instructor feedback and technical support. Two expert reviewers examined the research questions for relevancy and appropriateness for this population. After this process was completed, the 55-item instrument was organized to measure the perception of the learners with respect to self-efficacy, instructor feedback, and technical support. A Demographic section was placed at the end of the survey.

A website was developed and the survey was made available for all the online learners to complete. A pilot study was conducted to test the administration process for the new instrument. The data was analyzed using descriptive and quantitative statistics.

The Population

The population for this study consisted of all the University of Tennessee, Knoxville students enrolled in six of the seven online courses in the Department of Human Resource Development (HRD) for the Spring 2000 semester. These courses

were only available online. Of the six courses, four were undergraduate core courses and two were graduate courses. The undergraduate courses, known as the Diversified Instructional Modalities System (DIMS) project, were made available from a grant by the National Joint Apprenticeship Training Committee (NJATC) (Petty, 1999). These courses were developed to be sequential, with the first course being the required course for the course series. The completion of each course was a prerequisite for the next DIMS course. During the semester that this study was conducted, these courses were in the process of being transitioned into the HRD curricula as the existing courses were being phased out; therefore, the respondents in this study had not all begun the series with the initial, foundational course. A gateway was established for electronic support for the HRD online courses, i.e., the DIMS courses and the two graduate courses), which included topics such as “information about online learning in HRD, ... software and hardware information, communication (chat and discussion), technical support ... workshops and mentoring” (Petty, 1999, p.29).

This population was chosen based on the inherent characteristics present for the research design of this study, as well as the feasibility and accessibility of the population in order to measure the three variables, self-efficacy, instructor feedback, and technical support, in a totally online course.

The Instruments

Self-efficacy. The General Self-Efficacy Scale (GSES) is a ten-item questionnaire on a four-point scale, i.e., 1 = not at all true; 2 = barely true; 3 = moderately true; 4 = exactly true, that has been used to measure self-efficacy (see

Appendix A). Other self-efficacy instruments were identified; however, the GSES was the most comprehensive to measure the variables that have been identified in this study. The GSES is internally consistent ($\alpha = .75$ and $.90$) and has been shown to be valid in terms of convergent and discriminant validity (Schwarzer and Jerusalem, 1993). In addition, a reliable instrument that is valid and not laborious to complete has been thought to yield a greater response rate.

Dr. Ralf Schwarzer developed the GSES as a 20-item instrument in 1981. It was originally written in German; however, it has since been translated into 12 other languages: English, Dutch, Spanish, Russian, Greek, Arabian, Hungarian, Polish, Chinese, Indonesian, Japanese, and Korean. "The ten items of the instrument were adapted to the 13 languages by bilingual native speakers based on the German and English versions of the instrument" (Schwarzer, 1997). Although data for each of the versions has been reported, only results from the English versions will be discussed further.

The GSES has been administered to three different English-speaking groups. Age, sample size, country of origin, and method of administration are reported these data (see Figure 2).

Sample	Age	Sample Size	Country of Origin	Method of Administration
1	60	219 arthritis patients	Great Britain	Traditional – Paper/pencil (inferred)
2	Not assessed	290 university students	Canada	One of other instruments used to obtain student reactions to a faculty strike
3	<15 - 2% 15 – 20 - 24% 21- 25 - 24% 26 – 50 - 40%	1,437 computer users	Worldwide - 78% from North America	The Web (internet)

Figure 2. Summary Data of the English Versions of the GSES

This instrument was selected because of its appropriateness; the items address persons' perceived sense of self-efficacy overall, not just in one specific area.

According to Schwarzer and Jerusalem (1993), the scale “aims at a broad and stable sense of personal competence to deal efficiently with a variety of stressful situations.”

Research using the GSES in the academic environment has not been reported; however, the GSES has been suggested as being useful for identifying people with low coping mechanisms, which can lead to appropriate placement in prevention programs. Similarly, for this study, the GSES was used as an indicator for identifying the self-efficacy of learners in the online environment. Those with lower self-efficacy could benefit from additional support to help ensure their success.

Instructor feedback and technical support. Based upon the literature, 18 questions pertaining to instructor feedback and 17 for technical support were selected

based on their relevance to instructor feedback and technical support. The scale for both sections was the identical, four-point, Likert-type scale that was used for the GSES. The items in each of these sections were first modified as suggested by the expert reviewers, then placed into final format (see Appendix A). The two expert reviewers have been listed in Appendix B.

The Pilot Study

A pilot study was conducted to observe the administration process for an online survey. This was a new procedure within the Department of Human Resource Development (HRD); therefore, no previous experience or benchmarking knowledge existed.

From April 10-12, 2000, students in one HRD totally online course were invited to participate voluntarily in the study (see Appendix C). No reminder notice was sent. The decision to participate in the study led the respondents to the survey (see Appendix A). The decision to not participate in the survey led to an immediate exit from the survey (see Appendix D). Of the 21 students enrolled in the course, nine participated. The results from the sample indicated that the data could be retrieved electronically and received anonymously. No changes were made to the survey.

Collection of Data

To obtain the data, the survey was administered using the web to a population of the 163 students who were enrolled in online courses in HRD. A memorandum from the Department Head was emailed to all the HRD online students (see Appendix E). The survey was accessible from April 23 – May 1, 2000, and a reminder notice was

e-mailed on April 27, 2000 (see Appendix F). At the end of the survey-administration period, the data were analyzed using SPSS software.

Analysis of the Data

The demographic data were analyzed using descriptive statistics (percentages and frequencies) and the three instruments were analyzed using frequencies and means. The research questions were analyzed by first using frequencies; the t-test was then used for the first three null hypotheses to determine if the groups were different. For the last null hypothesis, the data were analyzed using mean scores; a 2 x 2 ANOVA was then computed to determine if interaction existed between or within two groups. If a significant F was obtained, additional statistics were used to analyze the data further. For the second and fourth research questions, the Pearson Chi Square was used. The Pearson r was used to analyze the third research question. A .05 level of significance was used for all tests.

CHAPTER IV

ANALYSIS OF DATA, RESULTS, and DISCUSSION

The purpose of this study was to examine the relationship among self-efficacy and two barriers, instructor feedback and technical support, in an online learning environment. The researcher developed an online survey for students who were taking an online course to determine if a relationship existed among these three variables.

Response Rate

The online survey was available for 163 students in the Department of Human Resource Development to complete. Seventy-six (76) students responded: 72 surveys were completed; four were unusable, which yielded a 44% participation rate.

Alpha Reliability

The internal consistency of the online survey was measured using Cronbach's alpha. Tests that measure personality do not usually report high reliabilities; however, an acceptable reliability could be in the seventies (Gay, 1996). Gay (1996) also states that when a test is new, as in the instructor feedback and technical support sections of the instrument for this study, a lower reliability is usually expected. Table 1 shows the alpha coefficient for three sections of the survey. Each was near or above .80.

Demographic Data

Online Course Experiences

The respondents also completed the Additional Information section of the survey. Items related to online course experience are shown in Table 2.

Table 1
Reliability Analysis

Reliability Coefficient	Number of Items	Number of Cases	Alpha Coefficient
Self-efficacy	10	71	.8001
Instructor Feedback	18	19 ^a	.9219
Technical Support	17	65	.8007

^a Not all respondents answered every item in the Instructor Feedback Section of the questionnaire, yielding only 19 cases for the alpha coefficient analysis.

Table 2
Online Course Experiences^a

Variable	Frequency	Valid Percent
<u>1. Current Course</u>		
HRD 320	14	19.4
HRD 325	10	14.0
HRD 330	8	11.1
HRD 452	6	8.3
HRD 511	14	19.4
HRD 557	20	27.8
Total	72	100.0
<u>2. Totally Online Course Taken Within Last 3 Years</u>		
0	4 ^b	5.6
1	36	50.0
2	19	26.4
3	8	11.1
4 or more	5	6.9
Total	72	100.0 ^c
<u>3. Other Courses Taken That Incorporated Online Experiences</u>		
No	40	55.6
Yes	32	44.4
Total	72	100.0
<u>8. Preference for Traditional Course</u>		
No	48	66.7
Yes	24	33.3
Total	72	100.0

^a The item numbers correspond to the items in the Additional Information section of Appendix A.

^b All respondents were currently enrolled in an online course and may have interpreted this question as the number of courses prior to the one they were enrolled in.

^c Adjusted with cumulative adding

As shown in Table 2, although approximately one-half of the respondents were enrolled in graduate courses, had not had previous experience with totally online courses, and were not taking other courses that incorporated online experiences, nearly two-thirds preferred taking an online course to taking one in the traditional format.

Respondents' Characteristics

The respondents also provided descriptive information in the Additional Information section of the survey. Items related to respondent characteristics are shown in Table 3.

As shown in Table 3, consistent with the specific course enrollments, about one-half were graduate students. Of the total group, 61% were female, and 53% were married. The median age of this sample was between 30 and 34.

None of the respondents were age 55 or over. In addition, 8.3% were divorced, 52.8% were married, and 38.9% were single.

Research Question One

Does the level of self-efficacy differ among learners who are enrolled in a totally online course, as measured by the General Self-Efficacy Scale (GSES)?

Responses to the GSES were analyzed using frequencies and means based on the sum of the scores (see Table 4). Next, to answer research question one, four null hypotheses were formulated:

Ho1: There are no significant differences in self-efficacy among learners according to experience.

Table 3
Respondents' Characteristics^a

Variable	Frequency	Valid Percent
4. <u>Degree Status</u>		
Graduate	35	48.6
Non-degree seeking	3	4.2
Undergraduate	34	47.2
Total	72	100.0
5. <u>Gender</u>		
Female	44	61.1
Male	28	38.9
Total	72	100.0
6. <u>Age</u>		
15-19	1	1.4
20-24	19	26.4
25-29	16	22.2
30-34	9	12.5
35-39	9	12.5
40-44	7	9.7
45-49	6	8.3
50-54	5	7.0
55 and older	0	0
Total	72	100.0
7. <u>Marital Status</u>		
Divorced	6	8.3
Married	38	52.8
Single	28	38.9
Total	72	100.0

^a The item numbers correspond to the items in the Additional Information section of Appendix A.

Table 4

Frequencies, Means, and Standard Deviations for the General Self-efficacy Scale

Item	Abbreviated Statement ^a	Scale ^b				Miss- ing ^c	Mean	Standard Deviation
		1	2	3	4			
1	Solve difficult problems	0	1	41	30	--	3.40	.52
2	Get what I want	3	14	50	5	--	2.80	.63
3	Stick to aims	0	6	39	27	--	3.29	.62
4	Deal with unexpected events	0	5	30	37	--	3.44	.63
5	Handle unforeseen situations	1	3	46	22	--	3.24	.59
6	Solve most problems	0	1	29	42	--	3.57	.53
7	Calm when facing difficulties	1	6	37	28	--	3.28	.68
8	Find several solutions	0	7	39	25	1	3.25	.63
9	Think of a solution	0	1	31	40	--	3.54	.53
10	Handle whatever comes	0	3	31	38	--	3.49	.58

^aCondensed wording from survey. See Appendix A for original survey statements.^bScale: 1 = Not at all true; 2 = Barely true; 3 = Moderately true; 4 = Exactly true^cThe value represents the number of respondents who did not select a response

Ho2: There are no significant differences in self-efficacy among learners according to gender.

Ho3: There are no significant differences in self-efficacy among learners according to classification.

Ho4: There are no interactions between gender and classification, between gender and experience, or between experience and classification.

Null Hypothesis One

Ho1: There are no significant differences among learners according to experience.

The data were analyzed using self-efficacy to determine whether the learners were different depending on their previous experiences taking online courses. An independent-samples t-test was run to test this hypothesis. Self-efficacy was the dependent variable. Level of experience, the independent variable, was defined as either inexperienced (e.g., 0-1 courses had been taken previously), or experienced (e.g., 2-4 or more courses had been taken).

Table 5 shows that no significant differences at the .05 level were found, $t(70) = .20$, $p = .84$. No further tests were conducted; therefore, Ho1 was not rejected.

Null Hypothesis Two

Ho2: There are no significant differences in self-efficacy among learners according to gender.

The data were analyzed using self-efficacy to determine whether the learners were different according to gender. An independent samples t-test was run to test this

Table 5
T-test for Self-efficacy by Independent Variables

	N	Mean	Standard Deviation
Experience			
Inexperienced	40	33.33	3.78
Experienced	32	33.16	3.25
Gender			
Female	44	33.45	3.66
Male	28	32.93	3.35
Classification			
Undergraduate	34	32.82	3.55
Graduate	35	33.77	3.38

hypothesis. Self-efficacy was the dependent variable; gender, the independent variable, was defined as either female or male.

Table 5 shows that no significant differences at the .05 level were found, $t(70) = .61$, $p = .54$. No further tests were conducted; therefore, H_{o2} was not rejected.

Null Hypothesis Three

H_{o3} : There are no significant differences in self-efficacy among learners according to classification.

The data were analyzed using self-efficacy to determine whether the learners were different according to their classification. An independent samples t-test was run to test this hypothesis. Self-efficacy was the dependent variable; classification, the independent variable, was defined as either undergraduate or graduate.

Table 5 shows that no significant differences at the .05 level were found, $t(70) = -1.14$, $p = .26$. No further tests were conducted; therefore, H_{o3} was not rejected.

Null Hypothesis Four

H_{o4} : There are no interactions between gender and classification, between gender and experience, or between experience and classification.

The data were analyzed using self-efficacy mean scores to determine whether the learners were different according to gender and classification (see Table 6), gender and experience (see Table 7), or experience and classification (see Table 8). A 2 x 2 Analysis of Variance (ANOVA) was then run to test this hypothesis. Self-efficacy was the dependent variable; gender and classification, gender and experience, and experience and classification were the independent variables.

Table 6
Self-efficacy Mean Scores and Standard Deviations by Gender and Classification

Gender	Classification	N	Mean	Standard Deviation
Female	Undergraduate	24	32.79	3.50
	Graduate	19	34.63	3.47
	Total	43	33.60	3.57
Male	Undergraduate	10	32.90	3.84
	Graduate	16	32.75	3.07
	Total	26	32.80	3.31
Total	Undergraduate	34	32.82	3.55
	Graduate	35	33.77	3.38
	Total	69	33.30	3.47

Table 7
Self-efficacy Mean Scores and Standard Deviations by Experience and Gender

Experience	Gender	N	Mean	Standard Deviation
Inexperienced	Female	26	33.92	4.02
	Male	14	32.21	3.12
	Total	40	33.33	3.78
Experienced	Female	18	32.78	3.06
	Male	14	33.64	3.54
	Total	32	33.16	3.25
Total	Female	44	33.45	3.66
	Male	28	32.93	3.35
	Total	72	33.25	3.53

Table 8
Self-efficacy Mean Scores and Standard Deviations by Classification and Experience

Classification	Experience	N	Mean	Standard Deviation
Undergraduate	Inexperienced	15	33.60	4.14
	Experienced	19	32.21	2.97
	Total	34	32.82	3.55
Graduate	Inexperienced	24	33.25	3.67
	Experienced	11	34.91	2.39
	Total	35	33.77	3.38
Total	Inexperienced	39	33.38	3.81
	Experienced	30	33.20	3.03
	Total	69	33.30	3.47

No significant differences at the .05 level were found when looking at gender and classification, $F(1, 1) = 1.30$, $p = .26$; gender and experience, $F(1, 1) = 2.23$, $p = .14$; and experience and classification, $F(1, 1) = 3.13$, $p = .08$. No further tests were conducted; therefore, H_{04} was not rejected.

Research Question Two

Does a relationship exist between self-efficacy and instructor feedback among learners who are enrolled in a totally online course, as measured by the Instructor Feedback Assessment (IFA)?

Frequencies, means, and standard deviations were computed first to analyze the responses (see Table 9). The Pearson Chi Square was then used to determine whether a relationship existed between self-efficacy and instructor feedback. Self-efficacy was grouped as high (total scores from 30 to 40) or low (total scores below 30). The mean was used to analyze this section, where instructor feedback was grouped as high (mean scores 2.5 and above) or low (mean scores below 2.5) (see Table 10).

No significant differences at the .05 level were found, $\chi^2(1, N = 72) = .93$, $p = .05$. No further tests were conducted; therefore, no relationship existed between self-efficacy and instructor feedback.

Research Question Three

Does a relationship exist between Item 2 (the instructor provided helpful feedback) and Item 3 (the student was satisfied with the feedback) of the IFA among learners who are enrolled in a totally online course?

Table 9
Frequencies, Means, and Standard Deviations for the Instructor Feedback Assessment

Item	Abbreviated Statement ^a	Scale ^b				Miss- ing ^c	NYA ^d / DNA ^e	Mean	Standard Deviation
		1	2	3	4				
	The professor:								
1a	Answers questions	2	5	23	42	--	--	3.46	.75
1b	Encourages interaction	2	5	15	50	--	--	3.57	.75
1c	Provides alternatives	4	10	36	22	--	--	3.06	.82
1d	Is available	1	9	22	40	--	--	3.40	.76
	Provides helpful feedback on:								
2a	Individual assignments	2	3	20	47	--	--	3.56	.71
2b	Group assignments	3	6	17	29	--	17 ^d	3.31	.88
2c	Exams	1	4	11	22	--	34 ^d	3.42	.79
2d	Projects	2	6	15	37	--	12 ^d	3.45	.81
	Satisfied with feedback through:								
3a	CourseInfo	0	7	17	46	--	2 ^e	3.56	.67
3b	E-mail	1	4	19	48	--	--	3.58	.67
3c	Chat room	8	11	13	14	--	26 ^e	2.72	1.09
3d	Group discussions	4	12	21	24	--	11 ^e	3.07	.93
4	Satisfied with interaction	7	12	21	32	--	--	3.08	1.00
5	Satisfied with responses	5	6	22	38	1	--	3.31	.90
6	Go to others for help	16	12	21	23	--	--	2.71	1.14
7	Like communicating	7	11	23	31	--	--	3.08	.99
8	Liking it better now	26	15	15	16	--	--	2.29	1.18
9	Overall, received feedback	2	6	22	42	--	--	3.44	.77

^a Condensed wording from survey. See Appendix A for original survey statements.

^b Scale: 1 = 1 Not at all true; 2 = Barely true; 3 = Moderately true; 4 = Exactly true

^c The value represents the number of respondents who did not select a response.

^d NYA = Not Yet Applicable

^e DNA = Does Not Apply

Table 10
Pearson Chi Square for Self-efficacy and Instructor Feedback

Self-efficacy (Total Scores)	Instructor Feedback (Mean Scores)	
	High (2.5 and above)	Low (Below 2.5)
High (30 – 40)	56	6
Low (Below 30)	8	2

The data were analyzed using the Pearson r to determine if a relationship between feedback and satisfaction existed among the learners. The four items under each of these concepts were added together to yield a single feedback and satisfaction score.

A significant difference at the .01 level was found, $r = .62$, $p < .01$; therefore, a relationship existed between feedback and satisfaction among the learners.

Research Question Four

Does a relationship exist among self-efficacy and technical support among learners who are enrolled in a totally online course, as measured by the Technical Support Assessment (TSA)?

Frequencies and means were computed first to analyze responses to the TSA (see Table 11). The Pearson Chi Square was then used to determine whether a relationship existed between self-efficacy and technical support. Self-efficacy was grouped as high (total scores from 30 to 40) or low (total scores below 30). The mean was used to analyze this section, where technical support was grouped as high (mean scores 2.5 and above) or low (mean scores below 2.5) (see Table 12).

No significant differences at the .05 level were found, $\chi^2(1, N = 72) = 2.24$, $p = .05$. No further tests were conducted; therefore, no relationship existed between self-efficacy and technical support.

Summary

This chapter presented the characteristics of the respondents and their perceptions about their online course experiences. Results for the four research questions were analyzed and discussed.

Table 11
Frequencies, Means, and Standard Deviations for the Technical Support Assessment

Item	Abbreviated Statement ^a	Scale ^b				Miss- ing ^c	Mean	Standard Deviation
		1	2	3	4			
1	Easy to use theWeb	1	6	17	48	--	3.56	.71
	Easy to access:							
2a	Syllabus	2	1	7	61	1	3.79	.61
2b	Plug-ins	7	9	21	35	--	3.17	.99
2c	Course lessons/modules	2	4	12	54	--	3.64	.72
2d	Embedded links	2	7	23	39	1	3.39	.78
2e	Course home page	2	0	8	61	1	3.80	.58
2f	Chat rooms	10	11	14	35	2	3.06	1.11
2g	E-mail	1	2	7	62	--	3.81	.55
3	Easy finding help	6	3	22	40	1	3.35	.91
4	Computers has not taken more time	8	9	18	37	--	3.17	1.03
5	Problems with using computer	8	6	20	38	--	3.22	1.01
6	Problems with campus network	6	13	21	32	--	3.10	.98
7	Problems with system crashing	5	4	15	48	--	3.47	.89
8	System not too slow	5	9	26	30	2	3.16	.91
9	No trouble now using computer	43	5	17	7	--	1.83	1.10
10	Did not give up solving problem	1	2	23	45	1	3.58	.62
11	Overall, received support	2	5	16	48	1	3.55	.75

^a Condensed wording from survey. See Appendix A for original survey statements.

^b Scale: 1 = 1 Not at all true; 2 = Barely true; 3 = Moderately true; 4 = Exactly true

^c The values represent the number of respondents who did not select a response.

Table 12
Pearson Chi Square for Self-efficacy and Technical Support

Self-efficacy (Total Scores)	Technical Support (Mean Scores)	
	High (2.5 and above)	Low (Below 2.5)
	High (30 and above)	Low (Below 30)
High (30 and above)	61	1
Low (Below 30)	9	1

No significant differences were found in self-efficacy among learners according to experience, gender, or classification, no interactions were found between gender and classification, between gender and experience, or between experience and classification, and no relationship existed between self-efficacy and instructor feedback or between self-efficacy and technical support.

The only significant difference was the positive relationship between instructor feedback and student satisfaction among the learners, $r = .62$, $p < .01$.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, and RECOMMENDATIONS

Summary of the Study

Purpose of the Study

Higher education has been experiencing a tumultuous phase due to the external and internal influences created by the proliferation of technology. Greater access to education and information has changed the traditional role of the university. The capability and availability to learn anywhere at anytime has similarly changed the role of teaching and learning, but are traditional methodologies applicable in an online environment? The success of a program is often attributed to the satisfaction of the customer (i.e., the learner), and perceived barriers have been identified as factors for non-success. Previous research has linked self-efficacy with academic performance, but little has been known about the success of learners in an online environment. The purpose of this study was to investigate the self-efficacy of learners in an online learning environment and to examine the relationship among self-efficacy and two barriers, instructor feedback and technical support.

Methodology

An instrument was developed before the study was conducted. While a reliable instrument had been found to measure self-efficacy, an appropriate instrument to measure instructor feedback and technical support had not been discovered. From a review of the literature, questions were constructed and examined by two expert

reviewers for relevancy and appropriateness. The final instrument contained 55 items: 10 for self-efficacy, 18 for instructor feedback, 17 for technical support, and 10 for demographics. The last two items in the demographic section contained qualitative data.

A website was developed to make the survey available to be completed. A pilot study was then conducted to test the online administration process.

Data Collection

The data for the study were obtained by administering the survey using the web. A memorandum of support from the Department Head was emailed to all the HRD online students. The survey was accessible from April 23 – May 1, 2000. A reminder notice was emailed on April 27, 2000.

Results and Findings

Of the 163 online students available, 72 participated in the study, which yielded a 44% participation rate. The internal consistency of the online instrument was measured using Cronbach's alpha. The reliability for each of the sections was near or above .80.

The four research questions were analyzed using descriptive and inferential statistics. Research Questions One, Two, and Four revealed that no significant differences were found. The Pearson Correlation was found to be significant for Research Question Three.

No significant differences existed among the self-efficacy of the learners according to experience, gender, or classification. A positive and significant relationship was found between Item 2 and Item 3 of the IFA; however, no relationship

existed among the self-efficacy, instructor feedback, and technical support of the learners.

The Findings

The following section represents the findings from the study.

The Demographics

1. Nearly 53% of the respondents were enrolled in undergraduate courses.
2. Slightly more than one-half, 55%, were not experienced with taking a totally online course within the last three years or with taking a course that incorporated an online experience.
3. Two-thirds of the respondents did not prefer a traditional course to one that is online.
4. Enrollment in the undergraduate and graduate programs was divided almost equally at 47% and 48%, respectively.
5. The female to male ratio was close to 2:1. Sixty-one percent of the sample were female.
6. Fifty percent were under age 30 and 50% ranged from 30 to 54.
7. Approximately 53% of the respondents were married.

The Instruments

1. The majority of the responses were at the higher end of the self-efficacy scale.

This result is consistent with two perspectives: Self-efficacy research posits that people typically do not participate in activities they feel will have an unsuccessful outcome. Although the majority of the respondents were

inexperienced, having taken no more than one online course within the last three years, more than half of the respondents preferred online to traditional instruction. Additionally, self-reported results can be inflated toward favorable or ideal responses and self-perception can be either accurate or inaccurate.

Given that 96% of these students are seeking to obtain an undergraduate or a graduate degree, their belief in having a successful outcome (e.g., graduating), is likely to be high.

2. The majority of the responses for the IFA were at the higher end of the scale, and overall, the respondents felt they received adequate feedback from their instructors.
3. As with the previous response patterns for the other two instruments, the majority of the responses for the TSA were at the higher end of the scale. The respondents felt they received adequate technical support for their online courses.

The Research Questions

1. Based on the statistical analyses, the self-efficacy of the respondents did not differ according to experience, gender, or classification. Gender research by Bandura (1997) asserts that men and women vary in content and process in selecting a career. Men tend to have higher efficacy beliefs about their career options, but be less certain about which occupation to select. Women, on the other hand, tend to have a lower sense of efficacy about career options, particularly toward historically male-dominated occupations, such as math- or

science-related fields, and also feel less certain about pursuing the male-dominated occupations. It seems plausible to deduce that since all the respondents scored at the higher end of the scale and were mostly women, that the women in this study had a higher self-efficacy, possibly due to their career (or major) selection.

2. The inexperience of this group with previous online courses resulted in no differences among the group. This finding is similar to the study conducted by Shih, et.al. (1998) which revealed that experience, as well as gender, did not have an effect on the learning achievement of 78 university students. Knowles (1973) describes experience as being important to the self-identification of adults as age increases. One-half of the respondents were under 30, which could explain the experience variable as not being a significant factor in this study. Galbraith (1991) states that with each learning endeavor, the adult learner “has experienced different marker events, transitions, roles, and crises.” The experience variable also may not have been significant since the under 30 group, presumably, had had less life experiences and less obstacles to overcome than the 30 to 54 group. This latter group, however, is more likely to have had more life experiences, more experience with overcoming obstacles, and more experience with achieving successful outcomes than the former group.
3. The relationship between perceived support and perceived satisfaction from the instructor was significant. The data suggests that those who perceived greater support from the instructor also had higher satisfaction.

Conclusions

The overarching theme for this study is success -- success for higher education and success for the online learner. The finding that no relationship existed among self-efficacy, instructor feedback, and technical support is a contribution to the research efforts of the higher education community. The rapid proliferation and merging of technology has forced academicians to persist in the face of constant change. Research about online learners has been limited, and with optimism, the results from this study will contribute to bridging the gaps in knowledge about online learners as higher education continues to persist through a transition that is challenging its long-held traditions and norms.

Successful learners have the ability to overcome challenges to reach a desired goal. The data from this study have provided information about online learners and the degree to which they will persist when faced with obstacles. Understanding online learners and providing techniques to support various learning strategies could enrich their learning experience and assist in ensuring their academic success.

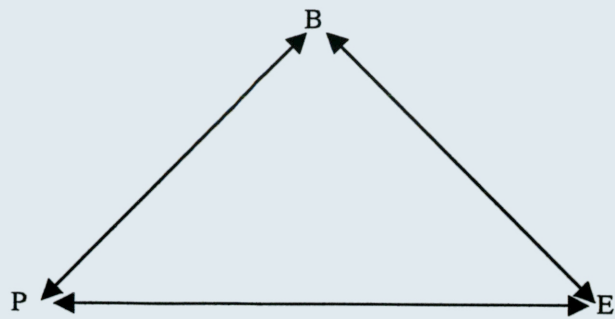
Recommendations

As a result of this study, the following recommendations are suggested:

1. The results of this study indicate that an expansion of the triadic reciprocal causation model is called for. Figure 1 (shown previously in Chapter One and again with Figure 3) represents the relations in triadic reciprocal causation (Bandura, 1986, pp. 23-24). Figure 3 is an expansion of Figure 1, specifically between P (cognitive and other personal factors) and E (environmental

influences) for learners in the online environment. The representation suggests that when self-efficacy is high, the ability to overcome challenges from the factors that affect success is high, or if expressed inversely, the higher a learner's self-efficacy, the less influence negative factors should have on the learner. Based on the results from this study, the development of the expanded model is recommended.

2. The parameters of this study should be extended to measure B (behavior) in Figure 3, by looking, for example, at end-of-the-semester grades. According to Wise (1999) self-efficacy is a predictor of behavior. Knowing the relationship between the factors P (self-efficacy) and E (instructor feedback and technical support) could allow support for the learner to be targeted to raise any low factor, which could be identified from instruments, such as the GSES, IFA or TSA.
3. If this study is replicated, the data from a larger sample size could support an improvement in the delivery of instruction and technical support for online courses.
4. Self-selecting strategies should be provided for the online learner. Higher self-efficacy does not suggest that one will not have to handle obstacles, but that one should be able to persist and overcome them when they do occur. One example of a self-selecting strategy would be flow charts or guides to instructional resources that students can turn to on their own whenever they are faced with learning obstacles. Such a tool should be available online to afford learners greater independence to discover their own solutions for their concerns and, at



(Fig. 1)

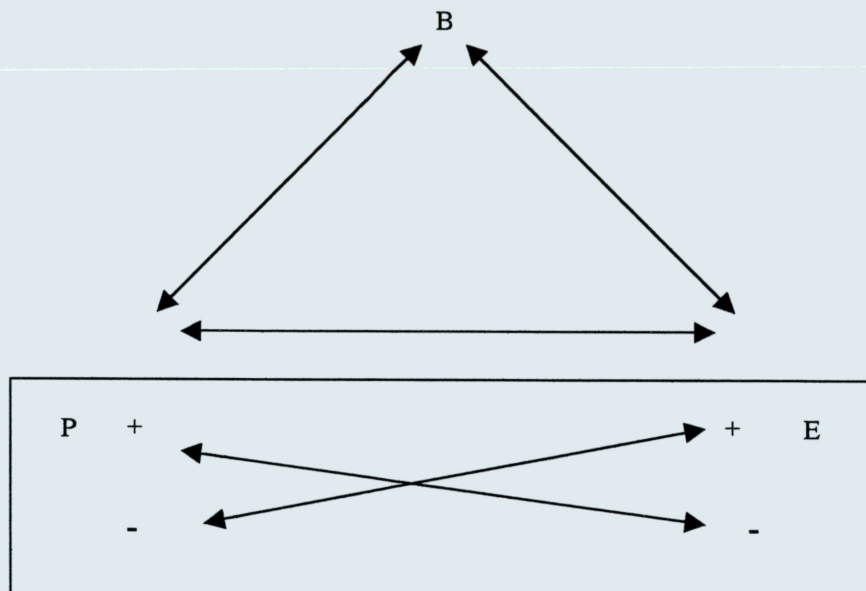


Figure 3. The visual representation of the expanded reciprocal determinism model modified for learners in an online learning environment. More specifically, P represents self-efficacy, E represents the factors that affect success within the online learning environment (instructor feedback or technical support), and B represents success of the learners (end-of-the-semester grades).

the same time, lessen their expectations that only instructors can provide immediate solutions.

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APPENDIXES

APPENDIX A

CONSENT FORM, GENERAL SELF-EFFICACY SCALE,

INSTRUCTOR FEEDBACK INSTRUMENT,

TECHNICAL SUPPORT INSTRUMENT, and

ADDITIONAL INFORMATION SECTION

APPENDIX A

Research Consent Form

Form 042900
April 2000
Programming by David Hite and Jeff
Krumm
The University of Tennessee, Knoxville

You are invited to participate in a research study. The purpose of this study is to gain more understanding about the characteristics of learners in an online learning environment. This is a four-part survey. Please consider each statement carefully and make the selection that is most appropriate for you. The majority of the response options will be in a pull-down box.

Click in this box for an example:

Select Here

Approximate survey completion time: **5 minutes.** **CONSENT** *Your participation in this study is voluntary, and you may decline without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. Return of this completed survey constitutes your consent to participate. Any unanswered questions will not allow the form to be submitted. **This is an anonymous survey.** Only your responses will be received. You must be age 18 or older to participate.*

Please make a selection from the options below:

[I agree to participate.](#)

[I do not wish to participate.](#)

Note: This form, the code, or contents are not to be duplicated without the author's or programmers' permission.

General Self-Efficacy Scale (1993) used with permission by Ralf Schwarzer & Matthias Jerusalem

APPENDIX A

General Self-Efficacy

- | | |
|--|-------------|
| 1. I can always manage to solve difficult problems if I try hard enough. | Select Here |
| 2. If someone opposes me, I can find the ways and means to get what I want. | Select Here |
| 3. It is easy for me to stick to my aims and accomplish my goals. | Select Here |
| 4. I am confident that I could deal efficiently with unexpected events. | Select Here |
| 5. Thanks to my resourcefulness, I know how to handle unforeseen situations. | Select Here |
| 6. I can solve most problems if I invest the necessary effort. | Select Here |
| 7. I can remain calm when facing difficulties because I can rely on my coping abilities. | Select Here |
| 8. When I am confronted with a problem, I can usually find several solutions. | Select Here |
| 9. If I am in trouble, I can usually think of a solution. | Select Here |
| 10. I can usually handle whatever comes my way. | Select Here |

Instructor Feedback Section

- | | |
|--|-------------|
| 1. In this course, the professor: | |
| a) Answers questions promptly | Select Here |
| b) Encourages interaction | Select Here |
| c) Provides alternative answers | Select Here |
| d) Is available for extra help when needed | Select Here |
| 2. The professor provides helpful feedback on: * | |
| a) Individual assignments | Select Here |
| b) Group assignments | Select Here |
| c) Exams | Select Here |
| d) Projects | Select Here |

Scale: 1 = Not at all true 2 = Barely true 3 = Moderately true 4 = Exactly true

* "Does not apply" is an additional option for Item 2 only.

APPENDIX A

3. I am satisfied with the feedback through:**	
a) The "Announcements" page (in CourseInfo)	Select Here ▼
b) E-mail	Select Here ▼
c) The chat room	Select Here ▼
d) Group discussions	Select Here ▼
4. I am satisfied with the amount of interaction I receive from the professor.	Select Here ▼
5. I am satisfied with the quality of the responses I receive from the professor.	Select Here ▼
6. If I do not receive adequate feedback from the professor, I go to someone else (e.g., group members or other classmates) for help.	Select Here ▼
7. I like communicating with the professor electronically.	Select Here ▼
8. At first I did not like communicating with the professor electronically, but I am liking it better now.	Select Here ▼
9. Overall, I have received adequate feedback from the professor.	Select Here ▼

Technical Support	
1. It has been easy for me to use the Web for purposes of this course.	Select Here ▼
2. It has been easy for me to access the following for this course:	
a) Syllabus	Select Here ▼
b) Plug-ins	Select Here ▼
c) Course lessons or modules	Select Here ▼
d) Embedded links	Select Here ▼
e) Course home page	Select Here ▼

Scale: 1 = Not at all true 2 = Barely true 3 = Moderately true 4 = Exactly true

** "Not yet applicable" is an additional option for Item 3 only.

APPENDIX A

	f) Chat rooms	Select Here
	g) E-mail	Select Here
3.	I have had an easy time finding computer help.	Select Here
4.	The use of computers has not taken more time than it is worth.	Select Here
5.	There have not been too many technical problems with using the computer.	Select Here
6.	There have not been too many technical problems with the campus network.	Select Here
7.	I have not had problems with the system crashing.	Select Here
8.	The campus network system is not too slow (e.g., dialing in from work or home).	Select Here
9.	I had trouble using the computer at the beginning of the semester, but now I do not.	Select Here
10.	If I had a technical problem, I did not give up until it was solved.	Select Here
11.	Overall, I have received adequate technical support.	Select Here

Additional Information	
1.	Select the online course that you are currently enrolled in: ☐ HRD 320 ☐ HRD 325 ☐ HRD 330 ☐ HRD 452 ☐ HRD 455 ☐ HRD 511 ☐ HRD 557
2.	How many totally on-line courses have you taken in the last three years? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more
3.	Have you taken other courses that incorporated on-line experiences? ☐ Yes ☐ No
4.	Degree status ☐ Undergraduate ☐ Graduate ☐ Non-degree seeking
5.	Gender ☐ Female ☐ Male
6.	Age ☐ 15-19 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐ 40-44 ☐ 45-49 ☐ 50-54 ☐ 55 and older
7.	Marital status ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widow(er)
8.	I would prefer to take a course in a traditional classroom instead of one that is totally online. ☐ Yes ☐ No
9.	List, at least one but no more than three, aspects of the course that you like. >
10.	List, at least one but no more than three, aspects of the course that you feel could be improved. >

Scale: 1 = Not at all true 2 = Barely true 3 = Moderately true 4 = Exactly true

APPENDIX B

EXPERT REVIEWERS

APPENDIX B

The Expert Reviewers

1. Dr. Jacquelyn O. DeJonge, Professor, Department of Human Resource Development
2. Mr. David Hite, Technical Support Specialist, Department of Human Resource Development

APPENDIX C

MESSAGE FOR NON-PARTICIPATION IN STUDY

APPENDIX C

Message for Non-participation in Study

You have chosen not to continue with the survey form.

Thank You for your time

HRD Online Gateway

APPENDIX D

MEMORANDUM TO HRD ONLINE STUDENTS

APPENDIX D

Memorandum to HRD Online Students

MEMORANDUM

TO: HRD Students Online

FROM: Gregory Petty, Ph.D.
Department Head
Human Resource Development Department

DATE: April 14, 2000

RE: Improving Online Courses

Your cooperation is needed for support of improving our online efforts. We have appreciated your willingness to go "online" with us during this past year of our transition to the future. Now we again need your help in "refining" our collective efforts. Please participate as truthfully as possible to surveys we will be sending in the next few weeks. Your response will help us to assure quality of programs for yourself and others in the future.

Thank you.

APPENDIX E

RESEARCH STUDY PARTICIPATION MEMORANDUM

APPENDIX E

To: HRD Online Students

Subject: Research Study Invitation

You are invited to participate in a research study. To participate, please click on the link below. It is asked that you complete one survey for each HRD online course that you are enrolled in this semester.

The survey period will end May 1, 2000.

APPENDIX F

SURVEY REMINDER NOTICE

APPENDIX F

Survey Reminder Notice

Subject: Reminder – Research Study Invitation

You have been selected to participate in a research study.

If you have already completed the survey, please disregard this reminder notice and thank you for your participation.

If you have not yet participated in the study, please click on the link below. It is asked that you complete one survey for each HRD online course that you are enrolled in this semester.

The survey period ends May 1, 2000.

APPENDIX G

ADVANTAGES OF AN ONLINE COURSE

APPENDIX G

ADVANTAGES OF AN ONLINE COURSE

Frequency	Comment	
16	Work at own pace	
13	Flexibility Convenience (work at home)	
8	No mileage/parking/travel	
7	Time saved; Instructor feedback; Accessibility of course material	
4	Turning in lessons via email/online	
3	Structure of class Supportive instructor Group discussion boards Learning from Internet links	
2	PowerPoint presentations Instructor's feedback	
1	Finding online training sites Learning more about topic Having experience taking an online course Challenging Announcements to stay informed More fun than traditional Meeting first night	Convenient for out-of-state students Relevance of assignments to real life Free computer workshops Independent learning Networking Prepared instructor

APPENDIX H

IMPROVEMENT NEEDS FOR AN ONLINE COURSE

APPENDIX H

IMPROVEMENT NEEDS FOR AN ONLINE COURSE

Frequency	Comment
9	Interaction with instructor
6	Instructor's communication of expectations More extra time for online exams
5	Technical difficulties
4	Student interaction Feedback
3	No human contact Personal interaction
2	Requires a lot of self-discipline Content Smaller class size Timeliness in receiving grades
1	<u>Instructor-related</u> Do case studies with online chat and get feedback from the professor Proofread course documents to eliminate changes and confusion Professor <u>Assignment-related</u> Due dates of assignments Difficult to stick to question stated by instructor when in discussion group More visual aids Project examples

APPENDIX H

IMPROVEMENT NEEDS FOR AN ONLINE COURSE

Frequency	Comment
1	<u>Student-related</u> Difficult to interact with classmates Monthly face-to-face sessions Social interaction with peers More student involvement
1	<u>Technology-related</u> Felt grade was affected from technical difficulties Fundamentals first, then class could be online All the group couldn't log on to chat at the same time More hands-on with technology
1	<u>Format-related</u> Have first meeting in class Class should meet at least once Have course online and face-to- face

VITA

Lynn is a graduate of Morgan State University in Baltimore, MD with a Bachelor of Science degree in Management. She received a Master of Education degree in Instructional Design, with a concentration in Computer Applications from the University of Oklahoma in Norman, OK.

She has worked in human resources departments in the federal, private, and non-profit sectors. While attending the University of Tennessee, Knoxville, she was a facilitator for an undergraduate course and was a member of the departmental online instruction team. Lynn plans to focus her research efforts on self-efficacy to effect positive change in the lives of people, both personally and professionally.