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Online Learning Success: Underlying Constructs Affecting Student Attrition

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Online Learning Success: Underlying Constructs Affecting Student Attrition

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Abstract

With the advent of the Internet, distance education has achieved a new meaning. Online delivery has become one of the most convenient ways to impart knowledge and education, and it has opened new educational possibilities for some who prefer this method of learning, rather than the traditional classroom setting.

The purpose of this critical analysis of theoretical and empirical literature is to explore the relationships among, online student progress, student characteristics of successful online completers, and to identify areas of future scholarly inquiry. The review examines how social and academic integration are predictors of course performance and course persistence in course completion.

An exploratory (comparative) and explanatory and predictive (correlational) online survey research design employing survey research methods which will examine the relationships among demographic characteristics, distance education student progress, course performance, and course persistence of undergraduate students who take online courses. The sample population estimated to be approximately 1,100 students used in this study, consisted of non-traditional degree-seeking online students at a medium sized private university in south Florida. A total of 877 agreed to participate.

There are three implications the researcher believes to be important. The first implication of this research study reveals that there is a correlation between course performance (GPA) and student retention. It is interesting to note that students who withdrew from school showed a tendency to agree less with social integration questions and showed a lower GPA. The second implication deals with academic incompatibility. The academic incompatibility subscale had a low but significant positive correlation, and

the third implication of this study reflects a statistical significance difference between the means of those students who remained and those who withdrew on the external attribution subscale. The research found that there are more female students taking online classes than men and the majority of these females are white. The research also found that social integration and academic incompatibility are important predicators in student retention and that academic incompatibility plays an important role in the GPA of students who withdrew.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction and Background to the Problem

Over the past century, the innovative concept of learning at a distance has gone

through several stages, such as: mail correspondence schooling, radio communications,

experimental television, television courses, satellite technology, and most recently, web-

based courses (Klesius, Homan & Thompson, 1997). Dr. Herman DeVry's portable

movie projector introduced in 1912 was the technology that helped bring visual distance

learning to people by providing college and secondary schools across America with the

first in-class motion picture news clips (Hernandez & Dement, 2007). The concept of

distance education has improved during the last thirty years utilizing advances in

communication technology (Klesius, Homan & Thompson, 1997). Technology has

improved distance education, beginning with radio communications in the 1920's,

television in the 1930's, satellite technology in the 1970's, and the 1980's and recently

computer technology which has definitely enhanced online learning with the advent of

the Internet (Bell, 2007; Klesius, Homan & Thompson, 1997). More and more

educational institutions are implementing online programs and are in the process of

developing and improving their course design (Bell, 2007; Barron, 2006; Harlow, 2006;

Yin-Sum & Tak-Wing, 2002).

Online learning is becoming more and more popular (Otte, 2007; Harlow, 2006;

Passerini & Granger, 2000). The growth and popularity of online programs are mainly

due to the flexibility, accessibility and convenience the classes offer (Moskal, Dziuban,

Upchurch, Hartman & Truman, 2006; Reisetter & Boris, 2004). "Almost, 3.5 million

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students were taking at least one online course during the fall 2006 term" (Allen & Seaman, 2007, p. 1). The majority of students agree that without this viable method of taking classes, they would not be able to get a college education (Barron, 2006; Bickle & Carroll, 2003). It is estimated that five out of six online students are working and would not be able to attend any classes in the traditional setting if it were not for the opportunity to take the classes online (Bocchi, Eastman & Swift, 2004).

E-learning, another term for online learning has boomed during the last five years, making it a very significant change in the way people view education. Imparting education is no longer just a face-to-face concept. Education and learning are taking place even if the student is not physically sitting in a classroom. As a rising method of instruction, online delivery has become very popular in higher education and continues to develop rapidly (Otte, 2007; Barron, 2006; Moskal, et al., 2006; Passerini and Granger, 2000). Allen and Seaman (2007) indicate that the greatest growth has occurred in two-year associate's institutions and that their enrollments added up to 50% of all online enrollments in the past five years. "More than two-thirds of all higher education institutions now have some form of online offerings, with the majority of these providing programs that are fully online (Allen & Seaman, 2007, p. 5). Factors of accessibility, convenience, and flexibility are important components of student success while taking online courses (Moskal, et al., 2006; Bickle & Carroll, 2003; Billings, Connors, & Skiba, 2001).

With the accessibility, convenience, and flexibility that online classes offer, concerns such as student persistence and student attrition arise. There are numerous higher educational institutions offering online delivery of programs that are suffering

student retention issues (Jun, 2005). Many researchers agree on the various reasons why online students drop out of their online classes but little has been researched on the solutions to ameliorate the attrition issue (Berge & Huang, 2004; Tyler-Smith, n.d.).

Three major theories regarding student retention are discussed in detail in chapter II: Longitudinal Model of Individual Departure (Tinto, 1987), Distance Education Student Progress (DESP) Model (Kember, Lai, Siaw, & Yuen, 1994), and the ARCS Model of Motivation Design (Keller, 1993). Tinto's (1987) Longitudinal Model of Individual Departure is comprised of five major constructs: pre-entry attributes (family background, skills and abilities, and prior schooling), goal commitments (student's intentions, goals, and commitments), institutional experiences (extracurricular experiences and peer interactions), personal and social integration (interaction with peers, faculty, and staff), and academic integration (academic performance). Tinto's model validates the need for faculty, administration, and student services personnel to take a more active role in the students' academic and social development to succeed in college (Tinto, 1987). Research about the social and academic integration in higher education has been conducted by other people who have presented seminal theories (Tinto, 1987; Astin, 1985; Kember, 1989.)

Kember's et. al (1994) Distance Education Student Progress (DESP) Model measures student retention in distance education, derives its origins from three primary sources: (1) the seminal work of Tinto which concentrated on on-campus traditional student retention (1975), (2) Kember's own research which started in the 1970's to establish a model for non-traditional students, and (3) a thorough review of the literature

linking the variables in the model. The model consists of four constructs: social integration, academic integration, external attribution, and academic incompatibility.

Keller's ARCS Model of Motivational Design consists of Attention, Relevance, Confidence, Satisfaction (ARCS) Model is centered on the importance that motivation plays among learners (Mills & Sorensen, 2004). The ARCS Model of Motivation proposes that learners react to their surroundings based on internal and external characteristics, perceptions, and goals, and that these are reinforced by an external environment (Keller, 1993; Keller, 1999).

Moller, Huett and Holder (2005) conducted a study to determine if the establishment of learning communities increased the effort put forth by students in distance education. Fifty one graduate students participated in the study, 22 were in the treatment group, and 29 were in the control group. During the study, six of the 51 were removed due to incomplete data. Even though it was a small sample study, the results showed that motivation impacts and influences student-student interaction. Self-motivated students are apt to become more successful academically and the benefits will also be shared by the faculty as well. Diaz (2002) used a test of learning styles to establish how being self-motivated can influence online learning. Diaz reported a statistically significant correlation between self-motivation and academic persistence.

Theoretical literature about the design and pedagogies related to e-learning is recent. Faculty members possess the subject matter expertise while the course developers and course designers have the technical expertise (Yin-Sum & Tak-Wing, 2002; Meyen & Tangen, 1999;). Meyen, Tangen and Lian (1999) presented their team process background in a model on "Developing Online Instruction" that identified the partnership

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between faculty and the technical developers. This collaborative concept has been shared by others (Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002).

A consequence of online education growth is the increased implementation of empirical research studies. Methodologies for regular classroom instruction have been traditionally researched by many. Online pedagogy is a relatively new concept (Meyen et al., 2002). Meyen et al. (2002) conducted a schematic/graphic model presenting a major construct of a conceptual approach to researching e-learning instructional design and the technology used for e-learning. The propositions presented by Meyen et al. (2002) were associated with the outcome variables such as the academic, technology, and economic policy implications, pedagogic effectiveness, and learners' performance.

Allen and Seaman (2006) sent an invitation to 4,491 schools that offer programs online to participate in the study. Fifty five percent of the schools responded and gathered the following information: There were 1,514,574 students taking at least one online class in the fall 2005 semester in the United States. One of the concerns expressed by the schools was the lack of faculty acceptance to view online instruction as a legitimate vehicle to impart knowledge. About 27% of the faculty members do not believe in online education (Allen & Seaman, 2006).

There are numerous challenges that the adult learner faces in higher education. Lack of financial funding, problems at work, unemployment, family obligations, health, and personal issues might interfere with the flow of academic life (Packham, Jones, Miller & Thomas, 2004; Evelyn & Brainard, 2004; Bayley & Mingle, 2003). According to the Center for Community College Policy, about 34 million new jobs have been created during the past decades that necessitate some type of postsecondary formal

education (Bailey & Mingle, 2003). Without having the opportunity to pursue a degree in higher education, adults would have to settle for low-paying jobs. Today, more than 43% of all undergraduates are 25 years of age or older and 73% is considered non-traditional students (Horn, Peter, Rooney, & Malizio, 2002). The growth and popularity of online programs are mainly due to the flexibility, accessibility, and convenience the classes offer (Moskal, et al., 2006; Reisetter & Boris, 2004). The majority of the students agree that without this viable method of taking classes, they would not be able to get a college education (Bickle & Carroll, 2003). It is estimated that five out of six online students are working and would not be able to attend any classes in the traditional setting if it were not for the opportunity to take the classes online (Bocchi et al., 2004).

Purpose

The purpose of this critical analysis of theoretical and empirical literature is to explore the relationships among online student progress, student characteristics of successful online completers, and to identify areas of future scholarly inquiry. The review examines how social and academic integration are predictors of course performance and course persistence in course completion.

The topic area of online education, online student progress, student characteristics, academic and social integration, course persistence, and course performance were selected due to the personal experience of the researcher, having confronted various challenges in retaining students in school. There are numerous higher educational institutions offering online delivery of programs that are suffering student attrition issues (Jun, 2005).

Research Questions

1. What is the relationship between student characteristics and distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), as related to student retention in online learning?

2. What is the relationship between student retention and course performance in online learning?

3. What is the relationship between distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), and student retention in online learning?

Research Hypotheses

1. Social integration, academic integration, external attribution, and academic incompatibility are significant explanatory variables of online student course performance (for completers only).

2. Student characteristics are significant explanatory variables of online student course performance (for completers only).

3. Social integration, academic integration, external attribution, and academic incompatibility are significant predictors of online student retention.

Definition of Terms

Independent Variables

Five independent variables will be investigated for this research study: student characteristics, social integration, academic integration, academic incompatibility, and external attributions. Their theoretical and operational definitions follow:

Student Characteristics

Theoretical definition. The student characteristics that were analyzed in this study are age, gender, race, ethnicity, college grade level, prior number of online learning

courses taken, employment hours per week, marital status, and the number of children the students have.

Operational definition. Student characteristics encompass nine variables measured by nine-questions, developed by the researcher (Appendix A, Part 1). The online students were asked to provide their age in years, gender, race, ethnicity, college grade level, prior number of online learning courses taken, employment hours per week, marital status, and the number of children the students have.

Social integration

Theoretical Definition. "Social integration is the new, and often taxing, demands of academic study must be accommodated alongside these on-going commitments. The social integration construct examined the degree to which students are able to integrate their academic study with the often conflicting employment, family, and social requirements" (Kember, 1995, p. 79). "The mechanisms of social integration include informal peer group associations, extracurricular activities, and interactions with faculty and administrators" (Tinto, 1975, p. 107).

Operational Definition. Social integration was measured by using the Distance Education Student Progress Inventory (DESP) in Part 2 of the survey. Social integration includes three subscales that contain 11 questions pertaining to social integration (Kember et. al, 1995).

Academic Integration

Theoretical Definition. Academic integration "is interpreted as encompassing all facets of a course and all elements of contact between an institution and the students whether these are of an academic, administrative or social nature" (Kember, 1995, p. 99).

Operational Definition. Academic integration was measured by using Part 2 and Part 3 of the survey. Part 2 contains academic integration which is one of the constructs in the Distance Education Student Progress Inventory (DESP). This construct includes four subscales that contain 20 questions dealing with academic integration. Part 3 of the survey attested to the students' grade point average (GPA) and how well they did according to the course performance.

Academic Incompatibility

Theoretical definition. Academic incompatibility and course performance were defined as not receiving a passing grade in a course.

Operational definition. Academic incompatibility was measured by using Part 2 of the survey. Part 2 contains academic incompatibility which is one of the constructs in the Distance Education Student Progress Inventory (DESP). This construct includes four subscales that contain 20 questions dealing with academic incompatibility.

External Attributions

Theoretical definition. External causes in the student's life such as insufficient time, work, family, friends, distractions, and unexpected events that might prevent the student from finishing a course or a plan of study (Kember, 1995).

Operational definition. External attributions was measured by using Part 2 of the survey. Part 2 contains external attributions as one of the constructs in the Distance Education Student Progress Inventory (DESP). This construct includes four subscales that contain 17 questions dealing with external attributions.

Dependent Variable

Student Retention

Theoretical Definition. Student Retention refered to the number of learners or students who progress from one part of an educational program to the next (Martinez, 2003).

Operational Definition. Student retention (course persistence) was measured by two questions developed by the researcher (Appendix A, Part 3). The researcher entered each student identification number provided by the students when they took the electronic survey, and confirmed whether or not the student was registered for the following semester.

Justification

Delimitations and Scope

The review of the literature presented here has specified five major constructs: 1) student characteristics, 2) social integration, 3) academic integration, 4) academic incompatibility, and 5) student retention, course performance, and course persistence.

This study was researchable due to the fact that the research questions could be investigated and answered from the data that was collected. The statistical data was quantifiable since the study used a quantitative research design. The variables could be measured and analyzed through the statistical data that was gathered making the study feasible. Furthermore, the sampling plan was feasible for the study since approximately 1,100 students partook in the online survey and the researcher was able to make some generalizations with online students.

The justification of the study was the contribution that it provides to the field of online studies on how to retain more students so that they can finish their degree requirements. Therefore, the findings of this research study narows the gap from previous studies that deal with online education as it relates to student retention.

Scope of the Study

- University policy requires all new students to be at least 18 years of age.

- All participants were non-traditional students. These are students who return to school or start school at a more mature age either as full time or part time and who continue to maintain the daily responsibilities of an adult such as work and family (Tinto, 2003; Spellman, 2007).

- Each semester consisted of four months.

- The university uses a modular system where the students take one class per month which allows them to concentrate on one course at a time. All students complete four courses per semester.

- There are no part time students. All students enroll in one course per month.

- Target population consists of all accessible active students during the summer 2008 semester.

- The survey will be conducted during the third month of the summer 2008 semester.

This critical analysis of theoretical and empirical literature explored the relationships among, online student progress, student characteristics of successful online completers, and identified areas of future scholarly inquiry. The review examined how social and academic integration are predictors of course performance and course

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persistence in course completion.   A synopsis of the most recent theoretical and empirical literature pertinent to the topic is presented in chapter II. The critical analysis of the literature concludes with a summation and interpretation of theoretical, empirical, and methodological literature, conclusions, and suggestions for future scholarly inquiry in online education.

CHAPTER II

LITERATURE REVIEW, THEORETICAL FRAMEWORK, RESEARCH

QUESTIONS, AND HYPOTHESES

Introduction to the Literature Review

Online learning is becoming more and more popular (Moskal, et al., 2006; Passerini & Granger, 2000). The growth and popularity of online programs are mainly due to the flexibility, accessibility and convenience the classes offer (Moskal, et al., 2006; Reisetter & Boris, 2004). The majority of the students agree that without this viable method of taking classes, they would not be able to get a college education (Bickle & Carroll, 2003). It is estimated that five out of six online students are working and would not be able to attend any classes in the traditional setting if it were not for the opportunity to take the classes online (Bocchi et al., 2004). An online student may live far away from the university or he/she may live in the same city (Changchit, 2008).

The reason why many students do not complete their courses or program in online learning comprises a whole set of underlying constructs. Many aspects are taken into consideration when defining success in online learning. Being technically adept is an advantage in the success to completing the requirements of an online class (Muilenburg & Berge, 2005). Social and class interaction are other important factors that were reviewed (Passerini & Granger, 2000). E-learning can take place if the proper content and an adequate support system are present (Simpson, 2003).

Review of the Literature

Online Student Persistence

In the last decade there is evidence of increasing research being conducted to address the significant high dropout rates in online education (Levy, 2005; Simpson, 2004; Terry, 2001). Much of what has been written identifies the factors that have contributed to students' withdrawal. There are several prime causes of withdrawal that have been identified by researchers including technical problems, pressure of work, lack of time, employment issues and personal problems, lack of student funding, and financial difficulties (Packham et al., 2004). With the advent of online courses, the attrition rate was as high as 80 percent (Flood, 2002). Nevertheless, schools have established strategies on how to retain students during recent years (Packham, et al., 2004).

Models and Theories

Tinto's (1987) Longitudinal Model of Individual Departure. Vincent Tinto, one of the most important experts in student retention, began writing about student departure more than 30 years ago. Even though Tinto made several revisions to his original model, this theoretical framework applies the Longitudinal Model of Individual Departure that was developed in 1987.

Tinto's theory "is an interactive model of student departure which describes and explains the longitudinal process by which individuals come to leave institutions of higher education" (Tinto, 1987, p. 112). His model originates from the theory of suicide and departure written by Emile Durkheim, considered the founder of sociology (Tinto, 1987). Durkheim discussed four types of suicide: altruistic, anomic, fatalistic and egotistical. The egotistical suicide is the form of suicide that indicates that the person is

not integrated socially or intellectually. As cited in Tinto's theory, it does not imply that every student who leaves intends to commit suicide. The idea was borrowed based on the social and academic integration that is the basis for Tinto's theory (Tinto, 1987).

Tinto's model is comprised of five major constructs: pre-entry attributes (family background, skills and abilities, and prior schooling), goal commitments (student's intentions, goals, and commitments), institutional experiences (extracurricular experiences and peer interactions), personal and social integration (interaction with peers, faculty, and staff), and academic integration (academic performance). Tinto's model validates the need for faculty, administration, and student services personnel to take a more active role in the students' academic and social development to succeed in college (Tinto, 1987). Tinto indicates "that students come into higher education bringing with them a diversity of personal attributes, skills, value orientations, and pre-college educational experiences and achievements" (Tinto, 1987, p. 115). "If the institution continues providing the student the necessary interactive experiences which further one's social and intellectual integration into the academic and social life of the college, this tends to enhance the likelihood that the individual will persist within the institution until degree completion" (Tinto, 1987, p. 115). According to Tinto, when the student shows commitment to both the institution and the attainment of the educational goal, along with the aforementioned skills, this paves the way for a productive educational journey. Negative experiences may separate the individual from the social and intellectual communities of the institution leading to possible departure. The model explains that when the social and intellectual integration into the academic and social communities is

minimal, the probability of leaving school is greater. On the contrary, the greater the integration, the more chances exist for the student to achieve degree requirements.

Tinto's model was further researched and it was found to be inappropriate for non-traditional students whose lives are affected by external pressures influencing their studies (Metz, 2004). Kember (1989) indicated that Tinto's theory is inadequate in distance education since Tinto concentrated on the traditional four-year student, whereas the student who enrolls in online courses is for the most part an adult who chooses the flexibility on the online class so that more time can be spent with the family (Leasure, Davis & Thievon, 2000). Kember (1989) pointed out that family life, special and personal circumstances of a distance education student, assume greater importance than the traditional student that Tinto's Model refers to. Kember (1989) found a small but significant correlation between student drop-outs and students demographic data such as: age, number of children, gender.

Progress (DESP) Model. Kember's et. al model of student progress has its origins from three primary sources: (1) the seminal work of Tinto which concentrated on on-campus traditional student retention (1975), (2) Kember's own research which started in the 1970's to establish a model for non-traditional students, and (3) a thorough review of the literature linking the variables in the model. The model consists of four constructs: social integration, academic integration, external attribution, and academic incompatibility. The three components of the social integration construct include enrollment encouragement, study encouragement, and family support. The students might have enrolled because someone at work or at home motivated them to do so. Once they enroll, the students will be more likely to succeed if there is sufficient support available at

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work and at home. Family, friends, fellow students, and employers are key factors in the social integration process. On the other hand, if these people protest that the student's studies obstruct the time being spent with them, then this will influence the student in a negative way. The academic integration construct includes four elements: deep approach (the approach that some students follow in which they read the material and attempt to really understand it, as well as to try to identify themselves based on their own experience and background), intrinsic motivation (students show a genuine interest in the subject matter for its own sake), positive course evaluations on the students' part, and good reading habits. The academic incompatibility construct consists of four elements: surface approach (students skim through the book selecting pieces which they think will be important on a test), extrinsic motivation (students look for external rewards such as salary raise or a promotion once the course is passed), negative course evaluations on the students' part, and language ability. The external attribution construct involves insufficient time, unexpected events, and distractions. The lack of social integration will probably affect the student who in turn will find culpability on the external attributions mentioned. As students advance through their studies, students with positive attributes will be integrated socially and academically, whereas other students will follow a negative path (Kember et. al, 1994).

Keller's ARCS Model of Motivational Design. The Attention, Relevance, Confidence, Satisfaction (ARCS) Model is centered on the importance that motivation plays among learners (Mills & Sorensen, 2004). The ARCS Model of Motivation proposes that learners react to their surroundings based on the internal and external characteristics, perceptions, goals, and that these are reinforced by an external

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environment (Keller, 1993; Keller, 1999). The Keller's ARCS Model has been extensively used (Mills & Sorensen, 2004; Small, Zaharia & El-Figuigui, 2004; Huang, Huang, Diefes-Dux, & Imbrie, 2006; Rodgers & Withrow-Thornton, 2005; Gabrielle, 2003; Shellnut, 1998).

Keller's most important statement as to how the ARCS Model works is based on the interaction between instructional materials and learners (Keller, 1993). The ARCS Model is a systematic model for designing motivating instruction (Small, 1997). Its origins are ingrained in a number of motivational theories but most importantly in the expectancy-value theory (Keller, 1993). According to Keller (1993), the four vital strategy components for motivating instruction are attention strategies for arousing and sustaining curiosity and interest; relevance strategies that link to learners' needs, interests, and motives; confidence strategies that help students develop a positive expectation for successful achievement; and, satisfaction strategies that provide extrinsic reinforcement for effort. Keller's ARCS model is comprised of four main sections: attention, relevance, confidence, and satisfaction. The attention component has information on curiosity and arousal (Berlyne, 1965), aspects of interest (Renninger, Hidi, & Krapp, 1992), boredom (Kopp, 1982), and other areas such as sensation seeking (Zuckerman, 1971). These concepts demonstrate how important it is for the student to have interesting graphics and animations, visual stimulus, unresolved problems, and a variety of techniques to stimulate their attention (Keller, 1993). The relevance component refers to learners' perceptions. It is important for the students to know that what they are learning is relevant with their goals, agreeable with their learning styles, and consistent with their previous experiences (McClelland, 1984). The confidence

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component reassures the student that he/she can accomplish the goals set in the course. This component includes sections from different theories such as: locus of control (Rotter, 1966), attribution theory (Weiner, 1992), personal causation theory (deCharms, 1976), and learning versus performance orientation (Dweck, 1986). The last component is satisfaction and refers to extrinsic and intrinsic motivation which point up positive feelings about their learning experiences (Packham, et al., 2004; Gabrielle, 2003).

Empirical Studies

Huang et al. (2006) conducted an exploratory and confirmatory factor analysis using the Instructional Material Motivational Survey (IMMS). Even though the original scale has 36 items, the authors decided to use only 20 items. The purpose of Huang et al. (2006) study had two objectives: to validate the IMMS as a measuring instrument for motivational evaluation and to expand IMMS's application for motivational evaluation. There were 875 students who participated in the study. A quantitative and qualitative approach was used to analyze the data regarding learning motivation using the ARCS components (Huang et al., 2006). Huang et al. (2006) revealed that the attention construct was highly correlated to the satisfaction component.

Kember (1999) conducted an exploratory inquiry using a qualitative cross-site analysis to find out how family, work and social obligations impact students' persistence in higher education. The validity of the model can be verified because the data that were gathered fit the three sectors: work, family and the social lives of the students. What strengthened the validity claim was that the reader found that the article provided adequate justification of the data, based on professional experience. The limitation of this inquiry was that Kember did not test the students' academic integration and

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motivation which are the other variables that impact the students' outcomes (Tinto, 1987; Kember, 1989).

Shin and Kim (1999) conducted a quantitative empirical study to evaluate how the time to study, social integration and some face-to-face activities impacted the students' learning outcomes. Shin and Kim utilized Kember's longitudinal process model of 1989. The authors were not surprised to learn that the amount of time spent in preparing for the class had a great impact on their academic success. According to the authors, the study resulted in low reliability due to the intercorrelation among the variables. Both authors agreed that this topic needs further research. In the empirical data previously listed, some of the authors agreed that the major limitations they faced were small sample populations. When this happens, the study should not be generalized to the rest of the population (Strage, 2000).

Significant Predictors of Course Persistence in Online Learning

The number of students who are enrolling in online classes is growing and the school enrollments are increasing 33% per year (Bocchi, et al., 2004). However, the literature review indicates that online learning is not for everyone though (Ramos, 2001; Kearsley, 2002). There are several factors that should be considered in online course persistence.

In order to sense some kind of achievement, the e-learner must be able to manage time, family and social obligations, and work (Kember, 1999). The flexibility of online classes can be enjoyed once the e-learner understands the rigor and discipline online learning requires (Moskal, et al., 2006; Kearsley, 2002; Ramos, 2001). The students

must be willing to participate in online learning to succeed in their studies (Ramos, 2001; Shin & Kim, 1999).

Bocchi et al. (2004) present an extensive and detailed qualitative non-experimental research on how to successfully retain online learners so that the students can achieve their goals. The authors' literature review was thorough and current. Other empirical studies were examined by the authors to validate their findings. They indicate that the MBA model they worked with had a two-day mandatory on-campus orientation, which all prospective students had to attend. Faculty members at the orientation help new students build their confidence; current students are also invited to discuss best practices and expectations. Avoiding misguided perceptions and understanding the importance of collaborative projects help students remain focused and persistent in completing their plan of study.

Bocchi et al.'s (2004) instrument to measure their findings was a survey. They surveyed two MBA cohorts totaling 64 students. The students' average age was 33. The majority of the students possessed a business-related bachelor's degree. About one third was women and minority representation was about 10% per cohort. All students were employed at the time of admission.

The majority of surveyed students were consistent in reporting the reasons why they had enrolled in an online program: accreditation, accessibility, convenience, career demands, and personal growth. Of special importance was the fact that most respondents reported learning little from other classmates. The vast majority of the students were proficient using technology-based tools, and most of them had already taken online classes and felt comfortable with them (Bocchi et al., 2004).

Bocchi et al.'s (2004) findings were the following: Due to the rigorous orientation process, a higher-quality of students was encountered with diverse, professional backgrounds; students formulate their thoughts in writing before posting it on the platform; the faculty serve as facilitators learning from the students as well; online teaching facilitates more one-on-one contact with students; online learning provides a more diverse group of students from many geographic locations and backgrounds.

The success in this particular MBA model is the fact that the school has maintained consistency of cohort profiles. This has provided a solid future for the prospective students. Bocchi et al. (2004) admit that there is more research to be done, and suggested administering the survey at various times throughout the duration of the MBA program. Since data were gathered to define students' characteristics and perceptions, these need to be researched over a period of time to see how they evolve.

Bernard, Abrami, Lou, and Borokhovski, (2004) conducted a quantitative meta-analysis of the empirical literature review to analyze how distance education compares with classroom instruction, and the achievements acquired by the students receiving both. The authors made the distinction between asynchronous and synchronous distance education: therefore, they actually analyzed three different types of instructional delivery. This review included important constructs such as achievement, attitude, and student retention outcomes.

The sampling that Bernard et al. (2004) used was the retrieval of 862 full text items and 2,262 abstracts all related to distance education and traditional classroom-based instruction from 1985 to 2002. Everything was read by two researchers to ensure proper inclusion based on the inclusion/exclusion criteria stipulated for the study. All the 862

studies had to include at least one achievement, attitude or a retention outcome measure in order to be considered for this meta-analysis research. The statement of the problem was to compare the effect of distance education and traditional classroom-based instruction on student achievement, attitude and retention. Outcomes and effect sizes from each study were extracted by two researchers, working independently, and then compared for reliability. In total, 688 independent effect sizes were extracted: 321 achievement outcomes, 262 attitude outcomes, and 105 retention outcomes. The limitation reported by Bernard et al. (2004) was that overall nearly 60% of the coded study features were found to be missing.

The author concluded that in general synchronous distance education and asynchronous distance education methodologies have advantages and disadvantages, and that at the end, there are no extreme disparities. The achievement and attitude constructs proved to be more positive in the asynchronous distance education than in synchronous distance education. The retention constructs were much greater in synchronous distance education (DE). Bernard et al. (2004) recommends using caution in interpreting the results. Had the research reports been more complete, the advice would have been more substantial on what works and what does not work in distance education. Therefore, it had no external validity. There was evidence of limited reliability and consistency in the findings.

Academic and Social Integration

According to Tinto's writings (1987, 1993), the more the student is engaged socially, the more the student will remain in school. Tinto's theory indicates that when the student encounters positive experiences at the campus, this will reinforce persistence

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which impacts the student's commitment towards completing a degree (Tinto, 1987). On the other hand, Kember (1995) indicated that since distance education students do not spend any time on campus, these were not influenced to a great extent by the social integration at the campus but rather by the social integration from family, friends and co-workers.

Houle (2004) conducted a quantitative study at a university in New York using 308 students. A total of 212 usable surveys were returned equating to a 70.4 return rate. Kember's et. al Model of Student Progress constructs showed statistical significance: "The paths from social integration to academic integration and external attribution to academic incompatibility were both statistically significant" (Houle, 2004, p. 98). If the adult learner receives support from his family members, friends, and colleagues, the student may have an easier task ahead in achieving the goal to finish (Tinto, 1987; Kember, 1995). According to Houle (2004), the only factor that had statistical significance in students' course persistence was the GPA.

Kember (1999) conducted an exploratory inquiry using a qualitative cross-site analysis utilizing semi-structured interviews to find out how family, work and social obligations, when integrated with part-time study, impact students' performance in distance education courses. A total of 60 students from three countries, New Guinea, Hong Kong, which in 1999 was still an independent country, and Australia were randomly selected.

The interviews were mainly done face-to-face and some via telephone. The three environments that were identified were: family, work, friends and fellow students and there were three coping mechanisms that were recognized within each one: support,

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sacrifice, and negotiating arrangements. Once the data were gathered, Kember noticed

some students responding in a more positive direction, in that they were able to come to

terms with family, friends, workmates and employers, so that they could squeeze study

time into their other responsibilities. On the contrary, those in the negative category

tended to blame external attributions on their inability to accommodate their studies with

their other responsibilities. Based on Kember's (1999) findings, three accommodation

mechanisms were identified: 1) support from employers, family and friends makes a

difference in the integration process. 2) the student and others involved in the student's

social environment, need to make some sacrifices. 3) the need to renegotiate, to take over

roles previously performed by the student.

The validity of the model can be verified in several ways. The data that were

gathered fit the three sectors of work, family and social lives of the students and

attributed to the three mechanisms of support, sacrifice and negotiation. What

strengthened the validity claim was that the reader found that the article provided

adequate justification of the data, based on professional experience. Kember's (1999)

model can be used by other schools to assist part-time students to cope with work, family,

friends and their studies. The limitation reported by Kember (1999) was that the article

did not deal with academic integration and motivation, which are other variables that

impact student outcomes.

Tu and McIsaac (2002) conducted a quantitative and qualitative study to examine

social presence and what it really means in online classes. According to Rafaeli (1988),

Walter and Burgoon (1992), Svenning and Ruchinskas (1984), and Walther (1995), social

presence has no precise definition, but according to Tu and McIsaac (2002), "Social

presence is a measure of the feeling of community that a learner experiences in an online environment" (Tu & McIsaac, 2002, p. 131). Tu and McIsaac (2002) describe social presence using three dimensions: Social context, online communications, and interactivity. The hypothesis they used was that when these three components intermingle, the interaction between teachers and students increases. Fifty-one students participated in the study. The students' social relationships impacted social presence in this study. According to Tu and Isaac (2002), four major social relationships surfaced in the qualitative findings: caring, exchanging information, providing services, and maintaining existing status. Caring and exchanging information had more positive impact than the latter. Kelsey, Lindner and Dooley (2002) conducted a qualitative study where students demonstrated that the cohort dynamics were positively related to student persistence. Students in the study felt some kind of comradeship. In contrast to this study, Kelsey and D'Souza (2004) found that it was not really vital for online students to interact among each other. The authors did indicate, however, that their particular study did not formally require student-student interactions in the majority of courses.

Shin and Kim (1999) presented a quantitative empirical study in which the authors explored how a learner progresses over a period of a year, taking online courses in Korea. The time to study, social integration and extra face-to-face activities were found to be significant variables. Shin and Kim (1999) concentrated on Kember's longitudinal –process model of 1989 to perform this empirical study. They also referred to Tinto's longitudinal progress of drop outs in regard to cross sectional data studies of 1975. The sampling used was randomly selected. Of the nearly 200,000 enrolled students at the university, five percent were surveyed. A total of 9,809 surveys were

mailed and 4,668 respondents replied, giving the authors a response rate of 47.6%: 59.1 females and 40.9% males; of these, 51.4% were married, 48.6% were unmarried; 82.2% had a full-time job, 17.8% worked part-time and their average age was 31.

The exogenous variables that were determined were job load, social integration, and students' willingness. The endogenous variables that were determined were study time, planned learning, and face-to-face activities. Again, the authors drew on Tinto and Kemper's models and literature to perform this study. The outcome variables were the students' GPA up to the point of the survey, status of enrollment when the survey was conducted, and the status of enrollment for the following semester after the survey.

The authors were not surprised to find that the amount of time the learners spent in preparing for the class had great influence on their GPA, more so than the other two variables dealing with the social integration and the face-to-face-activities. Students in Korea could end up with different grades depending whether or not they have demanding jobs. In predicting enrollment for subsequent semesters, the GPA had no impact on their registering again for classes. The face-to-face- variable had more impact in this case. The reader found this data to have a serious limitation since this particular school considers a student to be a drop out after three terms without classes (Shin & Kim, 1999). According to the authors, the study resulted in low reliability due to the intercorrelations among the variables. Both authors want to continue with further research to ensure reliability of each variable more carefully. Both realized that their findings need to be verified through replication studies (Shin & Kim, 1999).

Faculty Involvement

Hoffman (2003) indicates that faculty can motivate online learners through continuous encouragement. E-mail and other communications are important in order for the student to remain motivated and engaged (Woods, 2002). According to Hoffman (2003), publicizing success stories and offering public recognition for course completion are two additional motivating tools that the faculty could utilize. Providing timely feedback to students about their performance is also essential. Graham, Cagiltay, Lim, Craner and Duffy (2001) emphasize that teachers should provide information feedback and acknowledgement feedback. Information feedback would be responding to specific questions about class content, a quiz grade or other type of information the student needs and acknowledgement feedback is when the student e-mails the teacher regarding an assignment sent or asking about a test. The teacher can reduce the student's concern by simply acknowledging the email.

Getting their assignments graded in a short period of time allows the students to learn from their errors. In a face-to-face course, the students receive this feedback orally or written while they are in the classroom. Online students expect similar feedback in their courses. Timely feedback helps students stay motivated and enthusiastic about the online class. Providing individual feedback in a timely fashion can facilitate better student performance, (Tallent-Runnels, Cooper, Lan, Thomas, & Busby, 2005). According to Huett, Kalinowski, Moller, & Huett (2008) e-mail messages from faculty show potential in increasing motivation and student retention. Predictors indicate a clear relationship between faculty interaction and what the students perceive in their online classes (Roblyer & Wiencke, 2004; Jiang & Ting, 2000). Connectedness and a sense of

belonging have been considered important by many researchers (Reisetter & Boris, 2004; Bernard, et al., 2004). "Faculty presence and participation are considered important to the online student" (Morris & Finnegan, 2008, 2009, p. 60). In addition, Bond (2005) "concluded that the attitudes and characteristics of community college online instructor do have a positive impact on student retention" (p. 92).

Academic Incompatibility

Kember's (1995) model of student progress divides academic integration into two segments. When a student performs well academically, Kember calls it academic integration (positive variable), whereas the student who is not succeeding in the course is referred to academic incompatibility (negative variable). This negative academic integration encompasses four subscales: surface approach (students skim through the book selecting pieces which they think will be important on a test), extrinsic motivation (students look for external rewards such as salary raise or a promotion once the course is passed), negative course evaluations on the students' part, and language ability.

Packham et al. (2004) suggests that in order for online students to be successful, they have to have the commitment and motivation to face the rigors of e-learning. "Commitment and motivation; however, are subjective elements and can only be influenced by a diversity of factors including the student profile, personal circumstances and the perceptions and experience of the learner" (Packham, et al., 2004, p. 340). Dellana, Collins, & West (2000) conducted a comparison study to determine if a traditional lecture course differed from the online course in terms of effectiveness and performance. The most relevant factor found was that in both courses, students with a record of low grade point average (GPA) in previous courses did not do as well as those

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with high grade point average (Muse, 2003). According to Frith and Kee (2003), students with a low GPA or students who have dropped from online courses should be counseled before enrolling in an online class. According to Houle (2004), the only factor that has statistical significance in students' course persistence is the GPA. Online learning is not for everyone and students need to know the number of hours required every week and the computer literacy skills needed to perform well in online classes (Kearney, 2002).

Pedagogy and Course Development

Meyen, Aust, Gauch and Hinton (2002) constructed a schematic/graphic model in which they discuss a major construct of conceptual approach to researching e-learning instructional design, and the technologies, employed as a basis for e-learning. A set of propositions was presented by the authors depicting the relationship with outcome variables such as the academic, technological and economic policy implications, pedagogical effectiveness, and learners' performance. Another set of propositions dealt with variables such as learners' attitudes, learning environment, nature of course content, and technology infrastructure. The last set of propositions dealt with the independent variables such as the instructional design, learners' interface, instructional environments, and levels or types of interaction. The methodology in traditional instruction has been established and has been researched for many years. Online instruction, though, has limited data-based research to assess the methodology that should be applied in order to achieve success. Meyen et al. (2002) suggest that there is not enough research being performed to assess students' experiences, engagement of learners, reinforcement,

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motivation, organization of teaching tasks, feedback, evaluation, and curriculum integration.

In a traditional classroom setting, teachers are accustomed to collecting data from all their students, and this is later collected school wide in order to assess the entire student population, in that particular school. According to Meyen et al. (2002) online instruction assessment might be more difficult to attain because it lacks the face-to-face interaction that the traditional classroom presents.

Meyen et al. (2002) recommend engaging the researchers and the course developers in the process. Their ideal goal is not to replace face-to-face instruction but to ensure that successful e-learning strategies are implemented effectively. This program research represents the early efforts of studies on the design and pedagogy of e-learning. Meyen et al. (2002) definitely have provided the opportunity for empirical validity of their model. The authors indicate that research is needed for everyone to understand the social impact of e-learning. Even though the propositions are well-developed, the construct has not been carried out by anyone else (Ramos, 2001).

The development of online courses has been very demanding for educational institutions since the initiation of online instructional delivery (Yin-Sum & Tak-Wing, 2002). Faculty members, who have the instructional expertise, usually lack the technical skills and course developers usually lack the course content knowledge. Educators are familiar with the curriculum content and have power over instructional knowledge which makes the instructional delivery smoother. The technical resources and capabilities are provided by the course developers and designers (Meyen & Tangen, 1999). A collaborative, team approach has been extensively used in designing, developing and

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instructing online courses. In order to produce worthwhile quality online development and instruction, the faculty should seek collaboration from expert technological developers to ensure success (Yin-Sum & Tak-Wing, 2002).

Meyen, Tangen and Lian (1999), presenting their team process experience in developing online courses, developed a schematic model on "Developing Online Instruction." Meyen et al. (1999) identified the partnership between instructors and technical developers. The article is noteworthy in that the development of an online course is thoroughly described. The model includes an excellent step-by-step process particularly to be used by teachers who want to get into online teaching. Meyen's et al. (1999) theory supports and validates the many concepts that are presently being used in successful learner-centered online courses (Chemish, DeFranco, Lindner & Dooley, 2005). This collaborative concept of developing thriving online courses is shared by others (Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002). The success or failure of the students' outcomes can actually start with the development and designing of an online course (Junaidu & Al-Ghambi, 2002).

Faculty members who wish to develop courses should have sufficient technology knowledge, some type of creativity to make the course interactive and appealing to the students, and even though they might not be web experts, they should be familiar with instructional pedagogies (Knight & Bermant, 2002).

Best Practices in Online Student Retention

The reason why many students do not complete their courses or program in online learning comprises a whole set of underlying constructs such as: student characteristics, family and financial obligations, work responsibilities (Kember, 1995), and computer

literacy (Schrum & Hong, 2001; Billings, Connors, & Skiba, 2001; Muilenburg & Berge, 2005). Many aspects are taken into consideration when defining success in online learning. There are numerous factors influencing success in online learning originating from the very beginning of the development of the courses until the moment the student completes the course (Junaidu & Al-Ghambi, 2002). A course syllabus should clearly indicate the objectives of the course and the competencies required by the student in order to satisfactorily complete the course. In addition, the connectedness among students that is sometimes missing in online classes can be improved by adding more learning community activities (Savenye, 2005; Chang, 2004). "The courses must be student-centered in order to ensure a more positive online environment" (Kearsley, 2005, p. 140). Excellent course development and designing, with the proper faculty involvement, should also be part of any type of online environment (Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002; Meyen et al., 1999).

Online learning has become extremely accepted due to the popularity, flexibility, convenience and variety of programs that are offered to the students (Rockwell, Schwauer, Fritz, & Marx, 2002). Many students choose online studies because they do not have the time to be sitting in a classroom. In this case, the customary face-to-face setting might not be appropriate for the e-learner (Reisetter & Boris, 2004). "The traditional learning environment is sometimes faculty-centered, whereas most of the online courses are student-centered, and there is a connectedness between the faculty and the student" (Kearsley & Moore, 2005, p. 140). In order to ensure a more positive online learning environment and meaningful action and interaction between the teacher and the student, there must be reasonable communication between the two (Savenye, 2005).

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Posting pictures of faculty and students can promote and enhance communication and social presence in the classroom (Wang, Sierra & Folger, 2003). The literature review that social and class interaction are significant aspects in the retention of online students (Passerini & Granger, 2000).

One way of maintaining interaction between students and the faculty is through the use of threaded discussions and weekly chats (Picciano, 2006; Hill, Raven, & Han, 2002). Faculty members need to exchange ideas and guide the threaded discussions so that the students feel connected at all times. Morris and Finnegan (2008, 2009) indicate that faculty presence online is essential to the online student. Students might feel overwhelmed with the material, technology, and deadlines; therefore, the teachers' guidance throughout the course is important.

Another important aspect of student retention is for students to be technically adept. In addition to having a computer and Internet connection, the student must possess basic computer knowledge. Not having the necessary understanding in computers will overwhelm the student which might cause the student to leave school (Kearsley, 2002). Kearney (2002) indicates that online learning is not for everyone. Many students still prefer the face-to-face interaction and sometimes lack the self-discipline and structure to do the work. The literature reveals that technology experience plays a very important role in succeeding in online courses (Schrum & Hong, 2001; Billings, Connors, & Skiba, 2001). This is an advantage in the success to completing the requirements of an online class (Muilenburg & Berge, 2005).

An orientation should be available to all new students so that they can feel comfortable navigating the course. This orientation should include specific information

regarding their program of study, the course, the technological applications used in the course, the social interaction during their virtual class, and students' location and backgrounds (Scagnoli, 2001).

In a non-experimental qualitative research project conducted by Bocchi et al. (2004), the authors indicated that the group of MBA students, who were surveyed, performed well in the online environment due to rigorous admissions to the program. The university was very selective and the two-day orientation on campus helped the students build confidence in themselves and the program of study, which is an important factor to succeed (Bocchi et al., 2004).

Chang (2004) conducted a study regarding online learning communities with online mentors where mentoring online students enhanced the students' performance. An online mentor was assigned to each online class to impart assistance not only to the students but also the faculty. "The maximum ratio of student to mentor was set to 20 to 1" (Chang, 2004, p. 76). The online mentors' main goals were to assist online students with technical difficulties and the psychological disconnectedness which are quite unique in the online learning environment (Chang, 2004).

Houle (2004) found that students, who successfully complete their online courses, had a specific location where to study at home. These students also had more than 16 years of work experience. E-learning can take place if the proper content and the adequate support system are present (Simpson, 2003).

Reisetter and Boris (2004) presented a qualitative and quantitative study that was conducted among graduate students in seven School of Education graduate courses to evaluate what works as far as the student perceptions of effective elements in online

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learning are concerned. Reisetter and Boris' (2004) article was selected because the online program at the University of South Dakota had attained approximately a 95% completion rate on their online courses. This is extremely important since retention in online programs is known to be a problem. Even with extensive research, the dropout rate continues to be significantly high (Ronald, 2002).

Billings et al. (2001) described the complexity found by e-learners when comparing face-to-face courses and online courses. Some learners confessed to experiencing feelings of isolation and in some cases the lack of connectedness with the school was detrimental to their learning. The previous references support the relationships of the following propositions: student learning, student satisfaction, and student perceptions of barriers to learning. Another factor that was highlighted was course design which was discussed earlier. Reisetter and Boris (2004) identified two recommendations: course organization and communications, and interactions. Courses must be student goal oriented and student-centered (Billings et al., 2001; Perreault et al., 2002). Good course development and design are beneficial for e-learning to take place (Meyen et al., 1999; Yin-Sum and Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002). The second recommendation dealt with communications and interactions. The students who participated indicated that they were grateful for having the opportunity to take online classes due to the distance that they had to commute if they were taking face-to-face courses. This supports previous studies reported where people selected online classes because they did not want to commute, and the flexibility of schedule that online classes provided (Reisetter & Boris, 2004).

In 2002, Perreault, Waldman and Zhao evaluated how the students overcame the barriers to successful delivery of distance learning courses (as cited in Reisetter & Boris 2004). Some of the findings were related to student learning and student satisfaction (Bernard et al., 2004). Self-efficacy, goal orientation and student interests impact web-based environments (Chiarelli & Whipp, 2004). Both agreed that further research is needed to better understand not only the mechanisms for a meaningful online learning community, but also to understand the needs and preferences of those students who do not need the community to grasp the concepts being taught in the course.

Conclusions

Theoretical Literature

Based on the review of the literature, the research reveals a gap as it pertains to the motivating factors that affect persistence of online undergraduate students. To address this recommendation, an exploratory (comparative) and explanatory and predictive (correlational) survey research design examined the relationships among student characteristics, distance education student progress, course performance, and course persistence of undergraduate students that take online courses. The theoretical framework that was used to guide this study is presented next.

Theoretical Framework

Tinto's Longitudinal Model of Individual Departure only addressed traditional students who are younger students who enroll in a college or university immediately after finishing high school requirements (Tinto, 1987). Tinto indicated that the students'

commitment towards the institution and educational goals along with the school's responsibility to integrate the student socially and intellectually would keep the student in school. Other researchers agree that social and academic integration are very important in students' college success (Kember, 1989; Astin, 1985; Bean & Metzner, 1985). Even though there has been a great deal of research for face-to-face classes, there is a deficiency in empirical data for online education (Terry, 2001). The theoretical literature indicates that the instructional models of online delivery can be successful with the proper collaboration between course developers/designers and faculty (Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002).

Kember's et.al Distance Education Student Progress (DESP) Model which measures student retention in distance education derives its origins from three primary sources: (1) the seminal work of Tinto which concentrated on on-campus traditional student retention (1975), (2) Kember's own research which started in the 1970's to establish a model for non-traditional students, and (3) a thorough review of the literature linking the variables in the model. The model consists of four constructs: social integration, academic integration, external attribution, and academic incompatibility.

Keller's ARCS Model of Motivational Design. The Attention, Relevance, Confidence, Satisfaction (ARCS) Model is centered on the importance that motivation plays among learners (Mills & Sorensen, 2004). The ARCS Model of Motivation proposes that learners react to their surroundings based on the internal and external characteristics, perceptions, goals, and that these are reinforced by an external environment (Keller, 1993; Keller, 1999). The three theories were previously explained in detail in this chapter.

Based on the gaps in the literature and the theoretical framework used to guide this exploratory (comparative) and explanatory and predictive (correlational) study to examine the relationships among student characteristics, distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), course performance, and course persistence of undergraduate students that take online courses, the following research questions and hypotheses are formulated for this study.

Research Questions

1. What is the relationship between student characteristics and distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), as related to student retention in online learning?

2. What is the relationship between student retention and course performance in online learning?

3. What is the relationship between distance education student progress (social integration, academic integration, external attribution, and academic incompatibility) and student retention in online learning?

Research Hypotheses

1. Social integration, academic integration, external attribution, and academic incompatibility are significant explanatory variables of online student course performance (for completers only).
2. Student characteristic are significant explanatory variables of online student course performance (for completers only).
3. Social integration, academic integration, external attribution, and academic incompatibility are significant predictors of online student retention.

Chapter II presented an analysis of the literature review as it pertains to student retention in the online environment. Major theories such as Tinto's (1987) Longitudinal Model of Individual Departure, Kember's linear process model of student progress (DESP), and Keller's ARCS Model of Motivational Design were analyzed. The chapter

further described in full detail the measurement of the motivating factors that affect student retention in online classes.

Based on the analysis of this review of literature, recommendations for future inquiry were identified that led to this exploratory (comparative) and explanatory (correlational) survey research study about relationships among student characteristics, distance education student progress and how these play an important role in student course performance and persistence in the online environment. To guide this study, a theoretical framework was presented and organized by theories. Based on the literature gaps, recommendations for future inquiry, and the theoretical framework for the study, research questions and hypotheses were generated.

A hypothesized model (see Figure 2-1) depicts the relationships between the theories and hypotheses that will be tested in the study. The model illustrates how the students characteristics (age in years, gender, race, ethnicity, college grade level, prior number of online learning courses taken, employment hours per week, marital status, and number of children), distance education academic progress affect course performance and student retention.
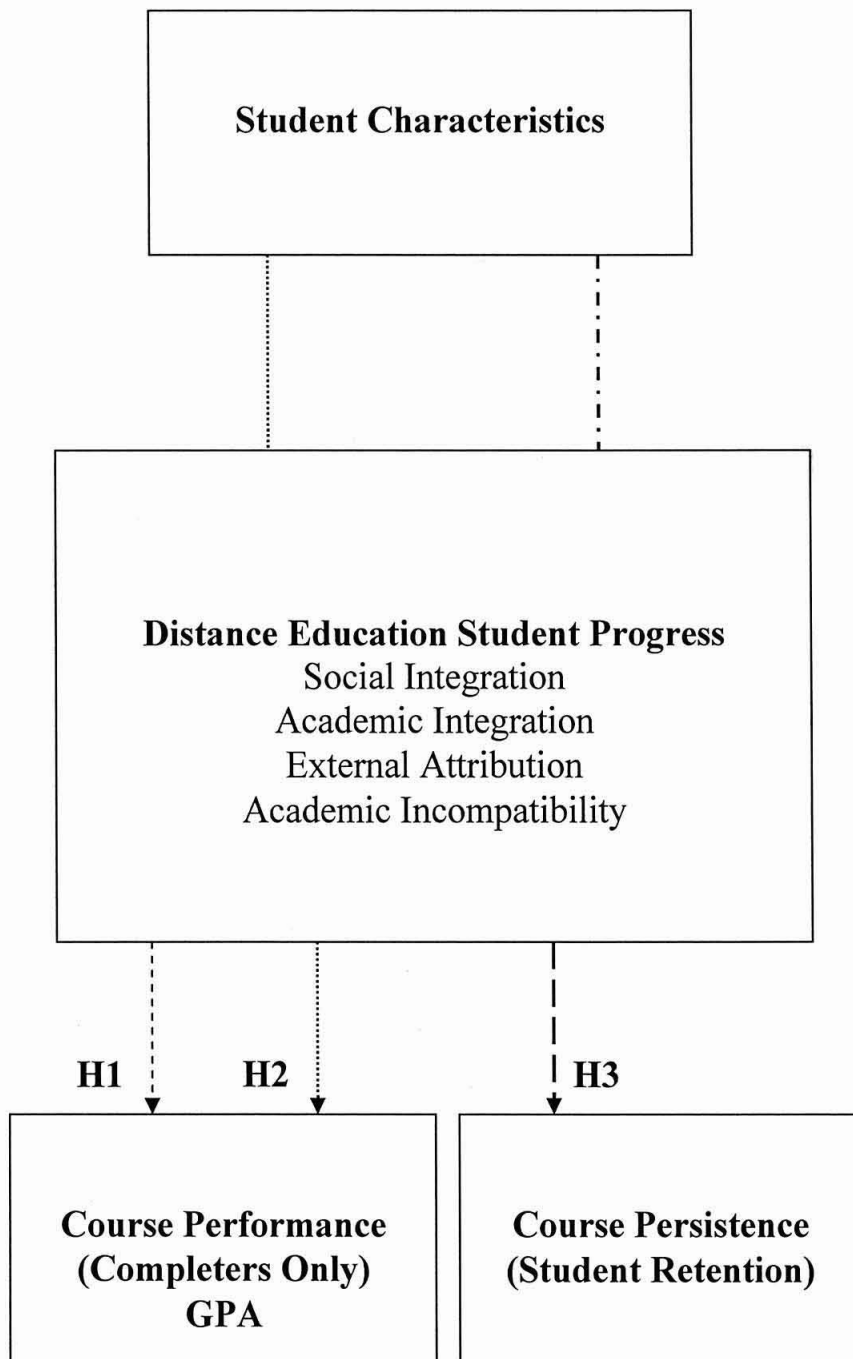
Figure 2-1. Hypothesized model of relationships between student characteristics and distance education academic progress in student course performance and course persistence.

Chapter II concluded with a hypothesized model that incorporated the theoretical framework and the hypotheses that are being tested in this study. Chapter III presents the research design, population and sample plan, instruments, procedures, methods of data analysis, and evaluation of research methods in this study. The scale that was utilized in the study is the Distance Education Student Progress (DESP) developed by David Kember et. al (1994).

CHAPTER III

RESEARCH METHODOLOGY

Chapter III presents a description of the methods to be used in this study of the relationships among demographic characteristics, distance education student progress, course performance, and course persistence of undergraduate students who take online courses. The research questions and the hypotheses evolved from the gaps in the literature. This chapter begins with a discussion of the research design followed by the population to be used and sampling plan, instrumentation, data collection procedures and ethical aspects, data analysis methods, and evaluation of this study's research methods.

Research Design

An exploratory (comparative) and explanatory and predictive (correlational) online survey research design employing survey research methods examined the relationships among demographic characteristics, distance education student progress, course performance, and course persistence of undergraduate students who take online courses. The target population was accessed by using all online students at a medium sized private university in south Florida, estimated to be about 1,100 students.

These students were web posted and e-mailed an invitation to participate in the online survey to answer the research questions and to test the hypotheses. A second reminder was sent to the students two weeks after in order to secure a better survey completion rate. The survey instrument for this study had three parts (Appendix A). Part 1, the *Student Characteristics* variables of age in years, gender, race, ethnicity, college grade level, prior number of online learning courses taken, employment hours per week, marital status, and number of children at home were measured by a Demographic Profile,

developed by the researcher (Research Question 1 and Hypothesis 2). Part 2, *Distance Education Student Progress* measured attributes of social integration, academic integration, external attribution, and academic incompatibility using the Distance Education Student Progress (DESP) inventory developed by Kember, Lai, Murphy, Siaw, & Yuen in 1995 (Research Questions 1 and 3 and Hypotheses 1 and 3). Part 3, *Course Performance and Course Persistence*, developed and completed by the researcher, were measured by collecting secondary data from the University's student database, Campus Vue (Research Question 1-3 and Hypotheses 1-3). The students did not have to answer the two questions since the researcher checked each student identification number to verify their GPA and fall 2008 registration.

Population, Sample, and Setting

Target Population

In this study, the target population included all online students who were registered in degree-seeking programs at a medium sized private university in South Florida. The population consisted of non-traditional students who met the following admission requirements: must have earned a high school diploma or GED and have passed the university entrance examination. The entire student population at the university in 2007 was approximately 12,000. The online population consisted of 1,100. This study concentrated exclusively on the online education students. Twenty five percent of the students were male and 75% female. In 2007, 65% were white non-Hispanic, 16% Hispanics, 14% African-American, and 1% Asian/Pacific Islander (CampusVue Student Database, 2007).

The University utilizes a modular delivery system where the students take one class per month. All registered students are full-time and take four courses per semester but concentrate on one course per month. The Bachelor of Arts and Bachelor of Science degrees require 41 modules (44 modules are required if remedial courses are needed) and 20 modules are required for the Associate of Arts and Associate of Science (22 modules are required if remedial courses are needed). The students enroll for three semesters per year and the researcher surveyed the students in the summer 2008 semester (University Student Catalog, 2007). All participants were asked to e-sign a consent form (Appendix C) for participating in this study. The researcher e-mailed and web posted the invitation that included the voluntary consent form. At the end of the invitation letter, the students had to select "agree" or "not agree" to participate in the electronic survey.

Accessible Population

Approximately 1,100 full time online students were invited to participate in the survey. The entire target population of degree-seeking students was accessible to the researcher during the summer 2008 semester. The online survey was administered through e-College, a virtual platform.

One of the strengths of the study was that the entire online population was available to the researcher. Due to the fact that the entire population was accessible, it was expected that the response rate would be favorable. The researcher hoped to accomplish a 50 percent return rate.

Eligibility criteria

1. All degree-seeking students enrolled in the summer 2008 semester were eligible to participate in the study.

2. Students must only be "online" students.

3. All students must be at least 18 years and older.

Exclusionary criteria

1. Non-degree seeking students.

2. Students who may be taking ground classes.

3. Students under 18 years of age.

Setting

The university is a regionally accredited, private career school that offers 40 programs in different disciplines to non-traditional students. Approximately 80 to 90 online students enroll every month (School Database, 2007). All eligible degree-seeking online students enrolled in the summer 2008 semester were invited to participate in the study. An announcement was e-mailed and web posted to the participants (Appendix C) and the survey was administered electronically through e-College, a virtual platform.

Sample Size and Sampling Plan

The sample of students for this study came from the entire eligible student degree-seeking online student accessible population returning to the university during the summer 2008 semester. Based on the winter 2008 semester student population, the online division had about 1,100 students actively participating in their online courses. The final data producing sample was self-selected based on those who agreed to participate in the study. Upon approval by IRB, all online students actively registered for the summer 2008 semester were invited to participate. All eligible online students had to e-sign a consent form (Appendix C) in order to participate in the electronic survey.

Instrumentation

Instrumentation consisted of a three-part survey that measured variables pertaining to the study. Part 1, *Student Characteristics*, developed by the researcher, consisted of nine items that measured demographic and educational characteristics. Part 2 measured *Distance Education Student Progress*, using the 68-item Distance Education Student Progress (DESP) developed by Kember et. al. It consisted of four subscales of social integration, academic integration, external attribution, and academic incompatibility. Part 3, *Course Performance and Course Persistence*, developed and completed by the researcher, consisted of two secondary data items obtained from the University's database (Campus Vue). A total of 74 items were completed by participants, and it took approximately 10 to 12 minutes to complete. Appendix A contains this three-part survey. An announcement was e-mailed and web posted to the participants (Appendix C) and the survey was administered electronically through e-College, a virtual platform. The constructs of the study are summarized in detail in Table 3-1.

Table 3-1

Constructs Measured in the Survey

Part	Construct	Instrument and Developers	Items	Item Scale	Score Range
1	Student Characteristics Age Gender Race Ethnicity College grade Prior number of Online courses Employment Hours per week Marital Status Number of Children at home	Researcher	9	Fill in the Blank Dichotomous Multiple Choice	
2	Distance Education Student Progress	DESP Inventory developed by Kember, Lai, Murphy, Siaw, Yuen, (1994)	64	5-point Likert Scale	68-340
	Social Integration		11 (10[a])		11-55
	External Attribution		17 (24[a], 26[a])		17-85
	Academic Integration		20 (44[a])		20-100
	Academic Incompatibility		20		20-100
3	Course Performance and Course Persistence	Secondary Data (Student Records)	2		0-1
	Course Performance			Ratio: Course GPA	0-4.00
	Course Persistence			Dichotomous Scale (Yes/No)	0 to 1
	Total Items		76		

[a]Items Reverse Coded to test the reliability of survey items (Larson & Farber, 2003).

Part 1. Demographic Characteristics

Description

Part 1, *Demographic Characteristics* encompassed nine variables measured by nine-questions, developed by the researcher (Appendix A, Part 1). The online students were asked to provide their age in years, gender, race, ethnicity, college grade level, prior number of online learning courses taken, employment hours per week, marital status, and number of children. The participants answered fill in the blanks (questions 1, 6, 7, and 9), dichotomous (questions 2 and 4), and multiple choice (questions 3, 5, and 8).

Part 2. Distance Education Student Progress

Description

Distance Education Student Progress measured by the Distance Education Student Progress (DESP) inventory developed by David Kember et. al in 1994. Kember's et. al model was built on Tinto's drop-out process, one of the most renowned theorists in student retention (Woodley, 2003). Tinto's model validated the need for faculty, administration, and student services personnel to take a more active role in the students' academic and social development to succeed in college (Tinto, 1987). Tinto indicated that students come into higher education bringing with them a diversity of personal attributes, skills, value orientations, and pre-college educational experiences and achievements (Tinto, 1987, p. 115). The model explains that when the social and intellectual integration is minimal into the academic and social communities, the probability of leaving school is greater (Tinto, 1987). Tinto discussed social and academic integration as being separate and parallel whereas Kember saw them as being linearly associated with social integration leading to, or causing academic integration

(Woodley, 2003). Besides using Tinto's seminal theory, Kember used his own research which has always been directed towards the non-traditional progress in distance education. Kember also used a thorough review of the literature that linked the variables in the model (Woodley, 2001). "The model can, with reasonable confidence, be used to make predictions and derive implications for practice" (Kember, 1995, p. 155).

The DESP inventory contains four scales, and 16 subscales, which emerged from factor analysis. The scales relate to approach to learning, motivation, language ability, and the extent to which the student is able to integrate study demands with personal, family, work, and social commitments. Kember (1995) made considerable adjustments to Tinto's model to accommodate it to distance education. Kember's et. al DESP inventory contains 68 items rated on a 5-point Likert scale: 1 = Definitely agree, 2 = Agree with reservations, 3 = Only to be used if the item does not apply to you or if you find it impossible to give a definite answer, 4 = Disagree with reservations, 5 = Definitely disagree. The four scales of the DESP are: social integration, external attribution, academic integration, and academic incompatibility in distance education. These four scales are organized by 16 subscales. *Social integration* has the following three subscales: enrollment encouragement (4 items, items 1-4), study encouragement (4 items, items 5-8), and family support (3 items, items 9-11). Social integration contains a total of 11 items, one of which is reverse scored (question 10). The score range is 11 to 55, where higher scores are associated with lower social integration.

External attribution has the following four subscales: insufficient time (4 items, items 12-15), events hindering study (3 items, items 16-18), distractions (7 items, items

19-25), and potential drop-out (3 items, items 26-28). External attribution contains a total of 17 items, two of which are reverse scored (questions 24 and 26). *Academic integration* has the following 5 subscales: deep approach (4 items, items 29-32), intrinsic motivation (4 items, items 33-36), positive course evaluation (5 items, items 37-41), positive telephone counseling (4 items, items 42-45), and reading habits (3 items, items 46-48). Academic integration contains a total of 20 items, one of which is reverse scored (question 44). The last construct, *academic incompatibility* has four subscales: surface approach (6 items, items 49-54), extrinsic motivation (4 items, items 55-58), negative course evaluation (6 items, items 59-64), and English ability (4 items, items 65-68). Academic incompatibility has a total of 20 items, with a score range of 20 to 100. (Appendix A, Part 2). Permission was granted by David Kember to slightly modify the DESP for this research; the last four items in the last subscale which deal with English ability will not be used for this study. The scale was developed in Hong Kong and the items dealt with English as a second language which did not pertain to the sample used in this study. Instead of answering 68 DESP items, students answered 64.

Reliability

The reliability of the DESP needs to be further estimated as it has not been widely used (Joel, 2006). Kember's (1994) study reported reliability coefficients less than .7— social integration, 0.68; external attribution, 0.61; academic integration, 0.65; and academic incompatibility, 0.55. In Kember's et al. (1994) replication study, the DESP reliability coefficients were all .70 or higher. In this study, coefficient alphas will be reported for the total DESP inventory and for each of the four subscales.

Validity

Thompson (1999) conducted a study using the DESP inventory. All questions with the respective subscales were used. The participants were all senior students in a Bachelor of Education program registered in the first semester of their fourth year. In the study, 67.5% of the students were correctly classified as using "insufficient time" as the subscale with the highest correlation.

Joel (2006) conducted a study utilizing the DESP and the Motivated Strategies for Learning Questionnaire (MSLQ). The study compared a small sample of 64 online with 120 face-to-face seminary students taking Greek or Hebrew. Social integration was shown not to be a factor influencing course persistence. Joel (2006) reported that this might be due to three reasons: 1) the demographics of the sample were students under 30 years of age working fewer than 15 hours per week and Kember's et. al model concentrates on adult students who work regular jobs; 2) its reliability and validity remain to be demonstrated; 3) differences between Kember's social integration scale measures and the MSLQ, particularly concerning self-efficacy, the key construct in social cognitive theory.

Houle (2004) conducted a study where the DESP was used to research adult student retention in web-based education. It was a quantitative study at a university in New York using 308 students. A total of 212 usable surveys were returned equating to a 70.4 return rate. "The paths from social integration to academic integration and external attribution to academic incompatibility were both statistically significant" (Houle, 2004, p. 98). If the adult learner receives support from his family members, friends, and colleagues, the student may have an easier task ahead in achieving the goal to finish

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(Tinto, 1987; Kember, 1995). Houle made modifications to the original model because she knew it could be improved. Houle determined that Kember's et. al model could be enhanced. Houle removed or changed the path of one construct at a time adapting it to the preliminary model (Houle, 2004). According to Houle (2004), the only factor that had statistical significance in students' course persistence was the GPA. In addition, Chang (2004) conducted a study at a large southeastern state university to see if online students' GPA improved once the students were mentored through the course. The online students received academic support from the online faculty, online mentors, and academic advisors. The online students' GPA increased to 3.43 as compared as to 3.01 in face-to-face courses.

Part 3: Course Performance and Course Persistence

Course Performance

Description. The course performance information was collected by using the school's student database called Campus Vue. The GPA was used to evaluate the students' performance in their online classes during the first module in the fall 2008 semester. The scale used was from 0-4.00. (Appendix A, Part 3).

Reliability. Reliability of the data was established by verifying all the participants' GPA information in the student database (Campus Vue). The data was considered reliable because each student identification numbers provided by the participants was entered and verified in the school student database.

Validity. Face validity was taken into account as a minimum form of validity to assess a measurement in the GPA in order to evaluate how the students did in a particular

course. The researcher believes the content is important to determine the relationship between course performance and online student retention (Burns, 1996).

Course Persistence

Description. This information pertained to the number of online students who registered for the fall 2008 semester at the university. The online students took the online survey at the beginning of their third term of the summer 2008 semester. In the fourth module, students' records of those who completed the survey were examined to determine whether they returned or did not return. (Appendix A, Part 3).

Reliability. Reliability of the data was performed by verifying each participant's ID in the university's student database. The data was considered reliable because each student ID was verified in the university's database and this confirmed their enrollment in the fall 2008 semester.

Validity. Course persistence was measured by utilizing Campus Vue, the institution's student database that enables the University to track and manage entire student life cycle: admissions, academic records, financial aid packaging and processing, and graduation process (University Student Catalog, 2007).

Procedures: Ethical Considerations and Data Collection Methods

Data collection methodology and ethical considerations were applied to the following:

1. Permission to use the *Distance Education Student Progress (DESP) inventory* scale was obtained (Appendix D).

2. Permission from the University was obtained to conduct the study utilizing all the online students during the third term of the 2008 summer semester (Appendix B).

3. Following a successful proposal defense, an application was submitted to Lynn University's Institutional Review Board (IRB) for approval. The IRB approval was granted on 7/16/08.

4. The data collection began once the IRB approval was obtained. The online students took an electronic survey through e-College, the virtual platform the students use to access their class. The instructions included information concerning voluntary consent (Appendix C).

5. The researcher explained the purpose of the study to the participants.

6. The electronic survey was taken by all active online students in the third term of the summer 2008 semester. The students provided their ID number in the survey.

7. After the period of data collection was over, the IRB was informed of termination of the project. IRB form 8 was submitted to the IRB.

8. The researcher entered the data into SPSS, version 16.

9. All results were reported as aggregate data.

10. The data was collected and will be maintained for one year. It will be kept confidential and will be destroyed after five years.

11. The data was filed in a secured place in the researcher's office.

Methods of Data Analysis

Upon completion of the data collection, the researcher analyzed the data through the Statistical Package for Social sciences (SPSS) version 16 in order to properly respond to the research questions and test the hypotheses.

To answer **Research Question 1,** (What is the relationship between student characteristics and distance education student progress--social integration, academic

integration, external attribution, and academic incompatibility--regarding student retention in online learning?) frequency distributions, measures of central tendency, and variability were used to describe the relationship between student characteristics and the DESP as related to student retention in online learning.

To answer **Research Question 2,** (What is the relationship between student retention and course performance in online learning?), descriptive data and correlations were used to see if there was a relationship between student retention and course performance in online learning.

To answer **Research Question 3**, (What is the relationship between distance education student progress--social integration, academic integration, external attribution, and academic incompatibility--and student retention in online learning?), independent sample t-tests (for two group comparisons), were used to see if there were differences in distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), and student retention in online learning.

To test **Hypothesis 1**, (Social integration academic integration, external attribution, and academic incompatibility are significant explanatory variables of online student course performance (for completers only), regression analysis (forward method) was used to determine whether distance education student progress (social integration, academic integration, external attribution, and academic incompatibility) was a significant explanatory variable of online student course performance (for completers only).

To test **Hypothesis 2**, (Student characteristics are significant explanatory variables of online student course performance—for completers only) regression analysis

(forward method) was used to determine whether student characteristics were significant explanatory variables of online student course performance (GPA for completers only).

To test **Hypothesis 3**, (Social integration, academic integration, external attribution, and academic incompatibility are significant predictors of online student retention) regression analysis (forward method) was used to examine whether distance education student progress, DESP (social integration, academic integration, external attribution, and academic incompatibility), was a significant predictor of online student retention.

Evaluation of Research Methods

Internal Validity – Strengths

1. A quantitative exploratory (comparative) and explanatory (correlational) survey research study design has consistent internal validity (Larson & Farber, 2003).

Internal Validity – Weaknesses

1. The DESP Inventory needs to be studied and evaluated more with students who have withdrawn from school.

2. Kember's et. al DESP Inventory was not developed to predict student retention. It was mainly a Model for people to understand student progress in distance education (Thompson, 1999). In this study it as used to test online learning success and its underlying constructs affecting student attrition.

External Validity – Strengths

1. The entire accessible population was available to the researcher; therefore the return rate should was favorable.

2. The entire accessible population was available to the researcher; therefore allowing for a strong design for generalizability to small private career-oriented universities.

External Validity – Weaknesses

1. The use of only one setting.

2. The 5-point Likert scale DESP item choice number 3 was confusing to the students. The choice indicated "only to be used if the item does not apply to you or if you find it impossible to give a definite answer". The researcher was concerned that a lot of students would select this choice.

3. The survey had 74 items and to encourage participation, the researcher used the incentive of participation in an Ipod drawing. The ID numbers of students who participated were entered in a drawing to win the Ipod. The researcher sent a "thank you" message to all the students who participated in the survey and announced the Ipod winner. The winner received the Ipod via certified mail at the end of the data collection.

Chapter III presented the research methodology, research design, target population, accessible population, setting, sample size and sampling plan, instrumentation (constructs measured in the survey, demographic characteristics, distance education student progress, course performance and course persistence), ethical considerations and data collection methods, data analysis, research questions and hypotheses and evaluation of research methods. Chapter IV will present the results of the study.

CHAPTER IV

RESULTS

Chapter IV presents the results of this research study which analyzes and explores the relationships among online student progress and student characteristics of successful online completers regarding student retention. This section also includes (1) demographic information of the participants, (2) psychometric evaluation for the scale and subscales, and (3) evaluation of the research questions and hypotheses.

Sample Demographics

All 1,100 eligible degree-seeking online students at a regionally private university in South Florida were invited to take an online survey for this study in summer 2008. The return rate was 79.7%. Of the 1,100 students, 877 participated in the survey. Not all surveys were entirely completed in some cases.

A total of 786 participants answered the question pertaining to age. The average age was 31.2 and 91 (7.1%) students did not respond. The participants' gender was as follows: male = 16.3% (143); female = 75.4% (661) and 5.7% (73) did not answer the question. The students' race was subdivided as follows: 59.1% (518) were white; 24.2% (212) were African American; 20.4 (179) were Latino; 7% (6) were American Indian; 2.4% (21) were Asian or Hawaiian/Pacific Islander; 1.1% (10) were Native American; and 12.5% (110) did not answer the question. College level was subdivided as follows: Freshman = 40% (351); Sophomore = 21.3% (187); Junior = 15.1% (132); Senior = 13.7% (120); and 87 did not respond. The average number of online courses taken was eight classes. The participants worked an average of 31 hours per week. The students' marital status showed the following breakdown: Single = 33.1% (290); married = 41.7%

(366); separated/divorced = 16.3% (143); widow/widowed = 0.5% (4); and 8.4% (74) did not answer the question. The mean in the number of children the online students had was 1.5%.

Table 4-1 presents the demographic profile of all the participants according to age group. The most frequent age group (n = 329, 37.5%) reflected in the data was in the 22 to 30 years of age group.

Table 4-1

Demographic Profile of Sample Based on Age Group

Age Group	Frequency	Percent
18 – 21	80	9.2%
22 – 30	329	37.5%
31 – 40	243	27.8%
41 – 50	112	12.8%
51 – 61	22	2.0%
Missing Data	91	10.4%
Total	877	100%

Table 4-2 represents the demographic profile of sample based on race and gender. The Latino/Hispanic category was left out because the researcher followed the United States government guidelines to establish race (Jenkins, n.d.). Latino/Hispanic participants were able to choose the race that was appropriate. Latino/Hispanic participants were included in the ethnicity census.

Table 4-2

Demographic Profile of Sample Based on Race and Gender

Race			Non-Hispanic Latino
White	Gender	Male	100
		Female	415
African American	Gender	Male	24
		Female	186
American Indian	Gender	Male	5
		Female	11
Asian or Hawaiian/ Pacific Islander	Gender	Male	5
		Female	16
Missing Data			115
Total			877

Table 4-3 illustrates the demographic profile of sample based on gender and ethnicity.

Table 4-3

Demographic Profile of Sample Based on Ethnicity and Gender

	Gender		
Ethnicity	Male	Female	Total
Non Hispanic/Latino	93	493	586
Hispanic/Latino	44	135	179
Total	137	628	765

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Table 4-4 represents the marital status of the online students who participated in the study. A total of 803 students answered the questions and 74 students left them blank. Data analysis showed that 41.7% of the online student body is married; 33.1% of the students are single; separated or divorced counts as 16.3% of the student population; and 0.5% is widow/widowed equating to 4 students.

Table 4-4

Demographic Profile of Sample Based on Marital Status

Status	Frequency	Percent
Married	366	41.7%
Single	290	33.1%
Separated/Divorced	143	16.3%
Widow/Widowed	4	.5%
Missing Data	74	8.4%
Total	877	100%

Table 4-5 provides a description of sample based on the number of hours the participants worked per week. A total of 340 students worked from 31 to 40 hours a week (38.6%). There were 161 students who did not answer the question.

Table 4-5

Students' Employment Hours per Week

Employment Hours per Week	Frequency	Percent
0 hours per week	146	16.6%
1 – 10 hours per week	35	3.7%
11 – 20 hours per week	23	2.6%
21 - 30 hours per week	39	4.4%
31 – 40 hours per week	340	38.6%
41 - 50 hours per week	81	9.0%
Over 50 hours per week	52	5.6%
Missing Data	161	18.4%
Total	877	100%

Table 4-6 depicts the college level of the participants. A total of 87 participants did not to answer the question. Forty percent of the student body is within the first academic year. Twenty-one percent were categorized as sophomore; fifteen percent of the students were in their junior year, and 13.7% of the participants are within their senior year.

Table 4-6

College Level

College level	Frequency	Percentage
Freshman	351	40.0%
Sophomore	187	21.3%
Junior	132	15.1%
Senior	120	13.7%
Missing Data	87	9.9%
Total	877	100%

Table 4-7 gives a description of the sample according to the number of online courses taken by the participant prior to taking the survey. Fifty-six percent had taken ten or fewer online classes. One-hundred ninety-seven participants did not supply the number of courses they had previously taken.

Table 4-7

Prior Number of Online Courses Taken

Number of Courses	Frequency	Percent
0	91	10.4%
1 – 10	397	45.5%
11 - 20	124	14.2%
21 – 30	43	4.8%
Over 30	25	2.6%
Missing Data	197	22.5%
Total	877	100%

Table 4-8 gives a description of sample based on the number of children the participants have. The mean was 1.53 children. A total of 85 students did not answer the question.

Table 4-8

Demographic Profile of Sample Based on the Number of Children

Number of Children	Frequency	Percent
No children	202	23.0%
One child	208	23.7%
Two children	212	24.2%
Three children	124	14.1%
More than three children	46	5.1%
Missing Data	85	9.7%
Total	877	100%

Psychometric Evaluation of Instrument

Distance Education Student Progress Inventory (DESP)

The *Distance Education Student Progress* Inventory (DESP) was developed by

Kember, Lai, Murphy, Siaw, Yuen in 1994. The DESP inventory contains four scales,

and 16 subscales, which emerged from the factor analysis. The scales relate to approach

to learning, motivation, language ability, and the extent to which the student is able to

integrate study demands with personal, family, work, and social commitments. Kember's

et. al DESP inventory contains 68 items rated on a 5-point Likert scale: 1 = Definitely

agree, 2 = Agree with reservations, 3 = Only to be used if the item does not apply to you

or if you find it impossible to give a definite answer, 4 = Disagree with reservations, 5 =

Definitely disagree. The four scales of the DESP are: social integration, external

attribution, academic integration, and academic incompatibility in distance education.

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These four scales are organized by 16 subscales. *Social integration* has the following three subscales: enrollment encouragement (4 items, items 1-4), study encouragement (4 items, items 5-8), and family support (3 items, items 9-11). Social integration contains a total of 11 items, one of which is reverse scored (question 10). The score range is 11 to 55, where higher scores are associated with lower social integration.

External attribution has the following four subscales: insufficient time (4 items, items 12-15), events hindering study (3 items, items 16-18), distractions (7 items, items 19-25), and potential drop-out (3 items, items 26-28). External attribution contains a total of 17 items, two of which are reverse scored (questions 13 and 15). *Academic integration* has the following 5 subscales: deep approach (4 items, items 29-32), intrinsic motivation (4 items, items 33-36), positive course evaluation (5 items, items 37-41), positive telephone counseling (4 items, items 42-45), and reading habits (3 items, items 46-48). Academic integration contains a total of 20 items, one of which is reverse scored (question 16). The last construct, *academic incompatibility* has four subscales: surface approach (6 items, items 49-54), extrinsic motivation (4 items, items 55-58), negative course evaluation (6 items, items 59-64), and English ability (4 items, items 65-68). Academic incompatibility has a total of 20 items, with a score range of 20 to 100. (Appendix A, Part 2). The DESP will be slightly modified for this research; the last four items in the last subscale which deal with English ability will not be used for this study.

Table 4-9 represents coefficient alphas for the four subscales of the *Distance Education Student Progress* Inventory (DESP). The range of the alpha coefficients resulted from 0.69 for Social Integration to 0.80 for Academic Integration being the

highest. Kember's (1994) study reported reliability coefficients less than .7 but in

Kember's et al (1994) replication study, the DESP reliability coefficients were all .70 or

higher.

Table 4-9

Coefficient Alpha Results of the Distance Education Student Progress Inventory (DESP).

Part	Subscale	Items	Alphas
1.	Social Integration	11	.69
2.	External Attribution	17	.77
3.	Academic Integration	20	.80
4.	Academic Incompatibility	16	.76

Table 4-10 illustrates coefficient alphas for the four subscales of the *Distance*

Education Student Progress Inventory (DESP) in other studies. It presents the reliability

coefficients in Kember's original study and Woodley's et al. (2001).

Table 4-10

Coefficient Alpha Results of the DESP in other studies

Scale	Reliability	
	Kember's Original Study	Woodley et al. Study
Social Integration	.68	.72
External Integration	.61	.75
Academic Integration	.65	.74
Academic Incompatibility	.55	.62

Analysis of Data

This section presents the analysis of the three research questions and the specific hypotheses that were tested.

The purpose of this study is to explore the relationships among online student progress and student characteristics of successful online completers. With the accessibility, convenience, and flexibility that online classes offer, concerns such as student retention and student attrition arise.

Research Question 1

What is the relationship between student characteristics and the distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), as related to student retention in online learning?

The number of students who participated in the survey was 877. Out of this number, 726 remained in school in the fall semester of 2008 and 80 students withdrew.

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Of the 80 students, only 39 students provided accurate student identification numbers so the GPA could not be verified for the others. Some students did not complete the entire survey so the responses did not add up to 100%. This will be a limitation which will be explained in chapter V.

A frequency analysis showed that the most common characteristics on the students who remained in school were the following: the most frequent age was 31 years of age, and females represent the majority of the students (n = 593, 81.5%). In terms of race and ethnicity, the students identified themselves as white (65%) and these students were typically freshman (n = 308, 43%). The students also stated that they had taken between zero and 10 previous online classes (70%), the most frequent being zero (n = 83, 11%); 8.5% (n = 62) reported taking one class; 7% (n = 51) reported taking three previous online classes. The most frequent number of hours worked by students a week was 40 (n = 282, 38.7%). Three hundred twenty-eight students reported being married (45%) and 261 of the students reported being single (35.9%). One hundred seventy-nine did not have children, 188 reported having one child, 191 reported two children, and 116 had three children.

A frequency analysis also showed that the most common characteristics on the students who withdrew from school are as follows: the most frequent age was 24 (n = 24, 4.7%), females (n = 68, 45.6%), race and ethnicity, (n = 46, white, n = 24, African American, n = 19 Latino/Hispanic), freshman (n = 43), most of the students had taken an average of three online classes (n = 8, zero classes; n = 7, one class; n = 6, 2 classes; n = 9, 3 classes. The most frequent number of hours worked a week was 40 (n = 26, 17%).

In terms of the marital status, married students (n = 29, 25.5%) and single (n = 38, 25%). Most had between 0 to 2 children (n = 64).

Kember's et. al DESP inventory contains 68 items rated on a 5-point Likert scale: 1 = Definitely agree, 2 = Agree with reservations, 3 = Only to be used if the item does not apply to you or if you find it impossible to give a definite answer, 4 = Disagree with reservations, 5 = Definitely disagree. The closer to number one, the more the students were in agreement with the question. The researcher slightly modified the inventory for this particular study. Kember et. al granted permission to remove the last four questions pertaining to English ability since the inventory was developed in Hong Kong where English is a second language. The social integration, external attributions, academic integration, and academic incompatibility subscales showed the following data on students who remained in school: Social Integration (M = 2.23, SD = .587) encompasses enrollment encouragement, study encouragement, and family support. External attributions (M = 3.35, SD = .544) include insufficient time, events hindering study, and potential drop-out. Academic integration (M = 2.18, SD = .465) includes deep approach, intrinsic motivation, positive course evaluation, positive telephone counseling. Academic incompatibility (M = 3.17, SD = .540) includes surface approach, extrinsic motivation, and negative course evaluation.

However, the students who withdrew also answered questions regarding the same constructs of social integration, external attributions, academic integration, and academic incompatibility. The data on these students' responses were the following: Social Integration (M = 2.26, SD = .608) encompasses enrollment encouragement, study encouragement, and family support. External attributions (M = 3.19, SD = .649) include

insufficient time, events hindering study, and potential drop-out. Academic integration (M = 2.12, SD = .479) includes deep approach, intrinsic motivation, positive course evaluation, positive telephone counseling. Academic incompatibility (M = 3.08, SD = .725) includes surface approach, extrinsic motivation, and negative course evaluation. Despite the difference in population in students who remained (n = 726) and the students who withdrew (n = 80), the data showed similarities for both groups. Both groups showed similar characteristics such as race, gender, and the number of hours at work every week. The main differences between the two groups were the age and the number of classes previously taken. The students who withdrew from school were younger and had taken an average of three classes whereas the students who remained were about 31 years old and had taken from zero to three classes, with zero being the most frequent.

Research Question 2

What is the relationship between student retention and course performance in online learning?

A correlation analysis was performed to identify the relationship between the students who dropped and the students who remained as it relates to their GPA's. Out of the 80 students who dropped, only 39 provided accurate student identification numbers; hence, the other students' GPA's could not be verified. The average GPA of the 39 students was 1.9. The average GPA of the students who remained (n = 726) was 3.1.

Of the students who remained, the correlation analysis showed that a low negative but significant correlation existed between social integration and course performance (GPA), (r = -.134), p <.01. It is interesting to note that this scale had an inverse

correlation. The students (n = 726) who answered in agreement with the 11 items in the social integration subscale that pertained to enrollment encouragement, study encouragement, and family support, showed a greater GPA contrary to the ones who dropped. The more the students who remained agreed with the questions in the social integration section, the higher were their GPA's. The students who dropped (n = 80) showed a tendency to agree less with social integration questions and showed a lower GPA of 1.9. A negative correlation existed (r = -.286), this is non significant but interesting to note that as they showed a lower tendency to agree, they also showed a lower GPA. The academic incompatibility subscale had a low but significant positive correlation (r = .251), p <.01. Even though significance reached the .01 alpha level, this minimal level of significance is acceptable. However, there was no significance on any of the additional subscales due to the fact that only 39 of the 80 students reported their GPA's, this can explain why it is possible that statistical significance did not occur with this particular subscale. The other factor is that the students who remained were a larger sample which affects significance.

Even though the study dealt with a small population (n = 39), it involves peoples' values and their answers to the questions were very similar to the group who remained in school. Although it is a small sample size, it is practical to show the relationship between characteristics, course performance (GPA) and student retention.

Table 4-11 gives a summary of the correlations between student retention and course performance (GPA) according to the answers the students provided in the subscales. In addition, the table shows correlations among the four constructs.

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Table 4-11

Correlation between Student Retention and Course Performance (GPA)

Subscale	1	2	3	4	5
	Students remaining (n = 726)				
Construct					
1. Social Integ.	1	-.064	.134**	-.076*	-.134**
2. Ext. Attrib.	-.064	1	-.154**	.409**	.079*
3. Acad. Integ.	.134**	-.154**	1	-.092*	.017
4. Acad. Incomp.	-.076*	.409**	-.092*	1	.25**
5. GPA	-.134**	.079*	.017	.251**	1
	Students who withdrew (n = 80) 39 with verifiable GPA's				
Construct					
1. Social Integ.	1	-.033	.415**	.107	-.286
2. Ext. Attrib.	-.033	1	.057	.588**	-.030
3. Acad. Integ.	.415**	.057	1	.130	-.003
4. Acad. Incomp.	.107	-.588**	.130	1	.057
5. GPA	-.286	-.030	-.003	.057	1

*p < .05 **p < .01.

The students who remained scored alike between the external attribution and the academic incompatibility scale showing a positive correlation (r = .409), which means that when students agreed less in external attribution, they also agreed less in the academic incompatibility area. However, the same group agreed more with the academic integration while disagreeing with the incompatibility items (r = -.092) and also disagreeing with external and agreeing with academic integration (r = -.154). The students who dropped agreed with academic integration and social integration (r = .415), while differently, agreeing less with external attribution and disagreeing with academic incompatibility (r = -.588).

Research Question 3

What is the relationship between distance education student progress (social integration, academic integration, external attribution, and academic incompatibility), and student retention in online learning?

An independent sample t-test was performed to identify the relationship between the constructs and student retention. Of the four subscales, social integration, academic integration, external attribution, and academic incompatibility, the subscale that showed a significant difference between the means of the students who remained (M = 3.34, SD = .544) and the students who withdrew (M = 3.19, SD = .649), t(803) = 2.328, p.=.02 (2-tailed) was external attribution. The external attribution subscale included four sub subscales with a total of 17 items: insufficient time, events hindering study, distractions, and potential drop-outs. The students who remained in the fall 2008 (M = 3.34, SD = .544) and the ones who dropped (M = 3.19, SD = .649). The other subscales did not

show significant differences between the mean/average scale scores of the students who remained versus those who withdrew.

Table 4-12 shows the relationship between distance education student progress (social integration, academic integration, external attribution, and academic incompatibility) and student retention.

Table 4-12

Independent Sample T-Tests based on DESP Subscales and Student Retention

Construct	M	SD	SEM	t	Sig.	Mean Difference
1. Soc. Integration						
Retained	2.23	.587	.028	-.400	.689	-.0278
Withdrew	2.26	.607	.067			
2. Extern. Attribution						
Retained	3.34	.544	.020	2.328	.020*	.1524
Withdrew	3.19	.649	.072			
3. Acad. Integration						
Retained	2.18	.465	.017	1.186	.236	.0656
Withdrew	2.12	.479	.539			
4. Acad. Incomp.						
Retained	3.17	.540	.020	1.309	.191	.0880
Withdrew	3.08	.725	.082			

*p < .05

Hypothesis 1

H_1: Social integration, academic integration, external attribution, and academic incompatibility are significant explanatory variables of online student course performance (for completers only).

A forward regression analysis was conducted to determine how social integration, academic integration, external attribution, and academic incompatibility impact online

student course performance (GPA). The regression demonstrated that academic incompatibility and social integration are significant predictions of online student course performance (GPA).

Table 4-13 shows the regression indicating a slight variation between the Sum of Squares (39.34) and the Mean Square (19.67). However, the residual shows that the constructs academic incompatibility and social integration had a statistical effect on GPA. This could be a statistical or distortion resulting from the large sample size for the students who remained. This is a distortion of the data as a result of other factors such as size of population (Tryggestad, 2004). Nonetheless, the results demonstrate a practical albeit weak relationship between the constructs and student success as means by GPA.

Table 4-13

Model Summary of Regression Analysis for H_1 with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
1 Regression	39.34	2	19.672	30.15	.000
Residual	464.50	712	.652		
Total	503.84	714			

Table 4-14 indicates that the coefficients had significance due to the fact that the sample population on the students who remained was 726. The F statistic is significant at $p < .000$. This outcome may also have a statistical artifact or distortion resulting from a large sample. However, in practicality, it is significant to identify how students rate themselves on these questions to determine their potential GPA's or academic success.

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Table 4-14

Model Summary of Regression Analysis for H₁ Including Coefficients

Model	Unstandardized Coefficients		Standardarized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Significance**
1 (Constant)	2.207	.222		9.959	.000
Acad. Incomp.	.383	.56	.245	6.786	.000
Social Integ.	-.047	.054	-.118	-3.282	.001

Table 4-15 presents Model 1 of the forward regression analysis for H_1. Model 1, R indicates the forward relation of the subscales and the predictive values of the GPA as a dependent variable. Its small value of 0.28 shows a limited relationship between the two significant constructs, academic incompatibility and social integration on course performance (GPA). Similarly, a low R^2 indicates that academic incompatibility and social integration had a very small impact on GPA; although the sample size of the students who remained in the fall 2008 was 726. The R^2 shows that the 8% of the variance in the model can be explained by the academic incompatibility and social integration subscales.

Table 4-15

Model Summary of Regression Analysis for H₁.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.279	.078	.075	.80771

Hypothesis 2

H_2: Student characteristics are significant explanatory variables of online student course performance (for completers only).

Table 4-16 shows the regression indicating that the Sum of Squares (32.799) is almost four times greater than the size of the Mean Square (8.2). This is also indicated between the differences between the Sum of Squares (32.799) and the Residual (298.815). These differences indicate a slight variation was explained by this model. Nevertheless, it does show that the students' characteristics, in particular, previous online experience, age, gender, and race had influence on GPA. However, this could be a statistical artifact or distortion resulting from the large sample size for the population that answered those particular questions pertaining to the demographic information in the survey.

Table 4-16

Model Summary of Regression Analysis for H₂ with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
2 Regression	32.799	4	8.200	13.501	.000
Residual	298.815	492	.607		
Total	331.614	496			

Table 4-17 indicates that the identified student characteristics explain approximately 10% of variance in outcome. The beta coefficient (B), which indicates the degree of influence each characteristic had on GPA resulted in low or negative, but significant coefficients, as reflected by the F statistic being below .05. This suggests that the more online courses a student takes, the more likely the student will be successful, as measured by GPA. In addition, the age of a student also had exerted some influence on GPA, which suggests that students about 30 years old are more stable and more focused on career education. It is interesting to note, however, that both race and gender had negative beta coefficients (B), which implies that a large sample of white females responded to the survey, thus, showing a low but negative relationship. This again implicates a statistical artifact or distortion due to the fact that descriptive data showed that the most frequent student characteristics of a student who remained in school are 30 year-old white females.

Table 4-17

Model Summary of Regression Analysis for H2 Including Coefficients

Model	Unstandardized Coefficient		Standardized Coefficient		
	B	Std. Error	Beta	t	Significance
2 Constant	3.171	.227		13.964	.000
Previous Online Exp.	.014	.004	.171	3.925	.000
Age	.015	.004	.150	3.458	.000
Gender	-.270	.090	-.129	-3.003	.000
Race	-.130	.043	-.128	-2.989	.000

Table 4-18 illustrates how students' characteristics show as constant variables in student course performance for students who remained in school. A forward regression analysis was conducted to determine the characteristics' impact on course performance (GPA). Model 2 identified the relationship between the variables that are significantly related to the outcome course performance. Those variables are: Previous Online Experience, Age, Gender, and Race and these characteristics' relation to the students' course performance (GPA). The correlation ($r = .314$) among these students' characteristics variables indicated a slight relationship between these characteristics and GPA. However, the R^2 indicated a small predictive effect of 9.9% on the course performance (GPA).

Table 4-18

Model Summary of Regression Analysis for H2.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.314	.099	.092	.77932

Hypothesis 3

H_3: Social integration, academic integration, external attribution, and academic incompatibility are significant predictors of online student retention.

In this study, a forward regression analysis was performed to determine the variation between all four constructs: social integration, external attributions, academic integration, and academic incompatibility and all surveyed online students GPA's. The regression analysis is to show how much variation in GPA is explained by these constructs in order to predict students' success and retention. The two constructs that account for 9% of the variation in course performance (GPA) are academic incompatibility and social integration. These results are significant, $F = 34.734, p = .000$.

Table 4-19 indicates that the academic incompatibility and social integration coefficients had significance which means that 9% of the variance was not due to chance. The F statistic is significant at $p < .000$. However, it could be a result of the large student population surveyed. Nevertheless, the results have practical significance on predictability for online student success.

Table 4-19

Model Summary of Regression Analysis for H₃ Including Coefficients

Model	Unstandardized Coefficients		Standardarized Coefficients		
	B	Std. Error	Beta	t	Significance
3 (Constant)	2.184	.223		9.794	.000
Acad. Incomp.	.405	.057	.248	7.090	.000
Social Integ.	-.212	.053	-.141	-4.019	.001

Table 4-20 presents the analysis of the regression model which shows that 51.604 sum of squares for regression and 557.131 residual sums of the squares. Due to this difference between these two components of the regression analysis, 92% of the variance cannot be accounted or explained by the model. The residual component is what is not explained by the model. In addition, out of the four subscales, only academic incompatibility and social integration constructs accounted for 8% of the variation in GPA which was significant. However, this could be a statistical artifact or distortion resulting from the large sample size for the students who remained. Even though it is a small variation, it is acceptable because we are dealing with human beings. Nonetheless, it demonstrates a certain level of practical significance because these factors can help with predicting online student success.

Table 4-20

Model Summary of Regression Analysis for H₃ with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
3 Regression	51.604	2	25.802	34.734	.000
Residual	557.131	750	.743		
Total	608.735	752			

Table 4-21 summarizes the strengths of the variables which indicate a small but significant relationship between the constructs and the students' GPA. The two predictive constructs were: academic incompatibility and social integration. This implies that students demonstrated more disagreement with questions pertaining to the academic incompatibility construct, such as questions referring to: surface approach, extrinsic motivation, negative course evaluation, and English ability, the more academically successful the students tended to be as measured by GPA. The data also illustrated that if students showed more agreement with questions related to social integration construct such as questions referring to: enrollment encouragement, study encouragement, and family support, the students' GPA was higher.

Table 4-21

Model Summary of Regression Analysis for H₃

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.291	.085	.082	.86188

This study selectively demonstrated the relationships between online student retention and the different variables depicted throughout the research: social integration, external attributions, academic integration, academic incompatibility, and course performance (GPA). Chapter V provides a discussion, interpretations, practical implications, conclusions, limitations, and recommendations for future studies regarding online student retention.

CHAPTER V

DISCUSSION

Many educational institutions have implemented online programs and many more are in the process of creating more options for students that go beyond the usual ground courses (Otte, 2007; Barron, 2006). The growth and popularity of online programs are mainly due to the flexibility, accessibility and convenience the classes offer (Moskal, Dziuban, Upchurch, Hartman & Truman, 2006; Reisetter and Boris, 2004). The majority of the students agree that without this viable method of taking classes, they would not be able to get a college education (Barron, 2006; Bickle & Carroll, 2003). With the accessibility, convenience, and flexibility that online classes offer, concerns such as student retention and student attrition arise (Jun, 2005). Research has been conducted regarding student attrition in higher education but limited research has been done in the area of online education (Martinez, 2003). The purpose of this quantitative study is to explore the relationships among student demographic characteristics of successful online completers, online student progress (GPA), and course persistence of undergraduate students who take online courses.

Summary and Interpretations

The sample population used in this study consisted of non-traditional degree-seeking online students at a medium sized private university in south Florida, estimated to be about 1,100 students. The invitation notice to participate in the study was web posted and e-mailed to all eligible online in the third month of the 2008 summer semester. A second invitation was sent two weeks later to remind those students who had not responded to the survey. Of the 1,100 online students, a total of 877 accepted to

participate, but their responses were not all complete. Part 1 of the survey (Appendix A,

Part 1) contained nine questions dealing with characteristics. The statistical information

gathered and reported in chapter IV showed the following missing data: Age—91

students did not respond to the question, gender—73, race—110, ethnicity—108, college

level—87, previous online experience—197, hours employed per week—161, marital

status—74, and number of children—85. The sections of race and ethnicity followed the

United States government guidelines to establish race (Jenkins, n.d.). Latino/Hispanic

participants were accounted for in the ethnicity census. This study attempted to answer

three research questions. The questions contained constructs that relate to social

integration, external attribution, academic integration, and academic incompatibility,

students characteristics and how these affect student performance (GPA) in online

learning and online student retention (Tinto, 1987; Kember, 1995). To answer the

research questions, the Distance Education Student Progress (DESP) scale was selected

since it has been previously used in studies relating to distance education (Joel, 2006;

Houle, 2004; Woodley, 2001; Thompson, 1999; Kember 1995).

Research Questions

    Research Question 1. 1) What is the relationship between student characteristics

and distance education student progress (social integration, academic integration, external

attribution, and academic incompatibility) regarding student retention in online learning?

The analysis of the data in this study showed that the coefficient alphas for the four

constructs were higher than studies previously conducted: Social Integration .69,

external attribution .77, academic integration .80, and academic incompatibility .76.

According to Kember (1995), student characteristics play an important role in the success of online studies. In this study, the data suggest that there were many similarities between the students who remained in school and those who withdrew. At the online campus of this university, the majority of the online students were white females and therefore, the results could have been influenced by the number of participants in this particular ethnic group. The only factors that were different were the age and the number of online classes previously taken. The average age of the students who withdrew was 24 years of age; whereas the average of the students who remained was 31. It is possible to deduce that since the majority of the students who remained were older, they were more mature and expressed a more solid interest in achieving the degree requirements. "Non-traditional students often have time constraints, but are more independent and self-directed learners" (Winogron, 2007, p. 61; Parker, 2003). It is interesting to note that 11% (n = 83) of the students who remained in school had taken no classes prior to taking the survey so their experience was positive while the students who withdrew had an average of three classes which increases the likelihood that they had a negative experience during their online classes. Negative experiences may separate the individual from the social and intellectual communities of the institution leading to possible departure (Tinto, 1987).

The data also demonstrate that social integration which encompasses family and friends' support has a relationship between student retention and course performance (GPA). The students who remained in school scored higher on social integration whereas the students who withdrew scored lower in this area. The social integration construct referred to the first 11 questions on the survey. These questions concentrated on

enrollment encouragement (five items), study encouragement (4 items), and family support (3 items). A sample of these questions is as follows: "my family encourages me to enroll in this course, "my workmates encourage to study," "the support of my family means a lot to me." The academic incompatibility showed significance in the students who withdrew. As a reminder to the reader, academic incompatibility includes surface approach which is an activity with a purpose to be completed, extrinsic motivation and negative course evaluation (Kember, 1995). The students who withdrew were more in agreement ($M = 3.17$, $SD = .540$) with the questions pertaining to extrinsic motivation more than those who remained in school. The academic incompatibility construct has a total of 20 items in four subscales: surface approach (6 items, items 49-54), extrinsic motivation (4 items, items 55-58), negative course evaluation (6 items, items 59-64), and English ability (4 items, items 65-68). As previously stated, permission was granted by Dr. Kember to slightly modify the scale to remove the last four items that pertain to English ability because the items pertain to English as a second language since it was developed in Hong Kong where English is not the official language. These are some of the questions posed on the survey: "the lecturers seem to delight me in making simple truth unnecessarily complicated", "I usually don't have time to think about the implications of what I have to read", and "the learning materials are presented in a confusing way." The students who withdrew from school agreed more to this type of questions than the students who remained in school.

Research Question 2. What is the relationship between student retention and course performance in online learning? The correlation analysis that was performed showed that out of the 80 students who withdrew from school, only 39 provided accurate

student identification numbers; hence, the other students' GPA's could not be verified. The 39 verifiable GPA's showed an average GPA of 1.9. Notwithstanding the small population size of students who dropped, the results have practical significance to the researcher or administrators in higher education due to the fact that students who are dropping out of school are showing a very low GPA. As stated in research question one, the students who left agreed less in the social integration subscale that pertained to enrollment encouragement, study encouragements, and family support unlike the students who remained who agreed more to the same questions in the social integration construct. It is apparent that students who are withdrawing from school lack the social integration that is essential in student retention (Tinto, 1987; Kember, 1995; Joel, 2006; Houle, 2004). The students who remained in school were more likely to respond positively to the 11 questions in the social integration construct. The average GPA for the students who remained was 3.1. The more the students agreed on these questions, the higher their GPA was. The second construct that showed significance was academic incompatibility. The academic incompatibility subscale had a low but significant positive correlation ($r =$ .251), $p < .01$. Despite its small significance, the significance is acceptable. The academic integration and external attribution constructs did not show any significance in the way the students who withdrew answered the questions in relation to course performance (GPA).

Research Question 3. What is the relationship between distance education student progress (social integration, academic integration, external attribution, and academic incompatibility) and student retention in online learning? An independent sample t-test was performed to compare the answers provided by students who remained

in school vs. students who withdrew. The data analysis identified the relationship

between the constructs and student retention. Out of the four subscales, social

integration, academic integration, external attribution, and academic incompatibility, the

one subscale that showed the most significance in student retention was external

attribution. External attribution encompasses four sub subscales that total 17 items.

Survey questions 12 through 28 fall in this category. The nature of the questions pertains

to insufficient time, events hindering study, distractions, and potential drop-outs: "I seem

to have many other things to do, there is never enough time for study", "I prefer to spend

time doing things other than studying", "my children interfere with my studies", "I

wonder whether all the study is worth the effort". The other three subscales did not show

significant differences between the two groups of students.

The research study also tested three hypotheses. The hypotheses and the findings

are presented next.

Hypothesis 1 Findings

H_1. Social integration, academic integration, external attribution, academic

incompatibility are significant explanatory variables of online student course

performance (for completers only).

The forward regression analysis shows that academic incompatibility and social

integration are significant predictors of online student course performance (GPA). The

data shows that these two constructs have an effect on the students' GPA. The value on

the relationship between these two constructs is rather modest but practical with

educational value to the researcher (Gay, 1996). In chapter III, it was explained that

Kember's et. al DESP was not developed to measure students' retention and this might be

the reason why not all four constructs showed statistical significance. It was mainly a Model for people to understand student progress in distance education (Thompson, 1999). This was stated as a weakness in the external validity of the DESP. Despite being a weakness, it has been used in other studies. Joel (2006) indicates that the social integration construct of the DESP was utilized to measure students' motivation in course persistence. Houle (2004) slightly modified the DESP and found that there was a relationship between course design and course GPA. Kember stated that "it can, with reasonable confidence, be used to make predictions and derive implications for practice" (Kember, 1995, p. 155).

The model in this research study explained 8% on how the students answered the questions pertaining to the GPA. Despite this small explanation of variance, the study is worthwhile because this information is important in the academic arena. School administrators realize that students can benefit greatly from their studies if they focus on their goal and this seems to be easier when they have the family supporting them. Student success improves when the student has full family and friends' support. The distractions that some of these family obligations bring could cause the student to separate himself/herself from the path to success. The students responded more favorably to the social integration section (M = 2.23, SD = .587) as compared to academic incompatibility (M = 3.17, SD = .540). The data suggest that social integration was a very important aspect in the student's school performance because the literature review shows that students who receive enrollment encouragement, study encouragement, and family support have more opportunity of being successful in school (Tinto, 1987 & Kember, 1995).

Hypothesis 2 Findings

H_2. Student characteristics are significant explanatory variables of online student course performance (for completers only).

The data collected showed that the students' characteristics, in particular, previous online experience, age, gender, and race had influence on GPA. This suggests that the more online courses a student takes, the more likely the student will be successful, as measured by GPA. In addition, the age of a student also exerted some influence on GPA, which suggests that students about 30 years old are more stable and more focused on career education. However, this could be a statistical artifact or distortion resulting from the large sample size for the population that answered those particular questions pertaining to the demographic information in the survey. The students who withdrew in this particular sample were approximately 24 years-old and the details follow.

Ten percent of the variance in the GPA can be explained by the frequency distribution characteristics which were age and the number of classes previously taken. The students who withdrew were about 24 years-old and the students who remained were approximately 31. The data infer that administrators should be more aware that in the online setting, students who are under 30 years-old could be more likely to withdraw. The students who withdrew indicated that they agreed more with academic incompatibility ($M = 3.08$, $SD = .725$) than those who remained suggesting that the students who left had concerns in the areas of extrinsic motivation and negative course evaluation. Again, the data indicate that the students who withdrew had more online experience by three classes unlike the students who remained whose most frequent number of classes was zero. This might indicate that they did not have much previous

knowledge or experience which most likely influenced their answers. Race and gender were overrepresented due to the large number of students in those two categories. The researcher strongly suggests that early intervention should help in retaining students especially during the first semester. Part of the academic incompatibility was negative course evaluation. A well-designed course plays a very important role in keeping the student motivated (Bell, 2007; Barron, 2006; Harlow, 2006; Yin-Sum and Tak-Wing, 2002). Excellent course development and designing, with the proper faculty involvement, should also be part of any type of online environment (Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002; Meyen et al., 1999).

Hypothesis 3 Findings

H₃. Social integration, academic integration, external attribution, and academic incompatibility are significant predictors of online student retention.

A total analysis of the data including students who remained and the students who withdrew suggests that academic incompatibility and social integration influenced students who left. Out of the four subscales, academic incompatibility and social integration coefficients had significance and that 9% of the variance was not due to chance; however, this could be a statistical artifact or distortion resulting from the large sample size for the students who remained in school (n = 726). Of the students who withdrew (n = 80), only 39 students provided accurate student identification numbers; therefore, the GPA for the remaining 41 students could not be verified. This created a limitation to the study and a strong design for generalizability could not be established. Although the sample population was rather modest in the students who withdrew, the results have practical significance which is extremely important for educational

administrators. "Just because results have statistical significance, it does not mean that these are important" (Bloom, Fischer & Orme, 2003, p. 518). What might seem significant to some, might not be for others. Classical research supports statistical significance for generalizability purposes, but practical results might be more meaningful and worthwhile in the academic world (Bloom et al., 2003; Gay, 1996).

Despite the large population of the students who participated in the survey, the researcher wants to address the importance of some of the threats to internal validity of the study. Bloom et al. (2003) listed various threats to internal validity and the ones pertinent to this research study are as follows: 1) history--when the students were invited to participate in the survey, they were told that the survey would be available for two weeks. This could have impacted the urgency to take the survey. A second invitation was posted and e-mailed to the students because the first time, the return rate was small. By this time, the students were preparing for their final exams and this could have tainted the results because they were focused on doing well on the test so the timing was not appropriate; 2) instrumentation--is another threat believed to be important to this study. Kember's et. al DESP inventory contained 68 items rated on a 5-point Likert scale: 1 = Definitely agree, 2 = Agree with reservations, 3 = Only to be used if the item does not apply to you or if you find it impossible to give a definite answer, 4 = Disagree with reservations, 5 = Definitely disagree; 3) Drop-outs are another threat--out of the 80 students who dropped, only 39 provided their proper student ID making it impossible for the researcher to verify their GPA's; 4) testing--the way the scale read might have been confusing for students. The choices 1 to 5 could have been a factor for so many people to choose because a lot people chose number three which dealt with "not applicable or to be

used if you do not find it possible to give a definite answer". As the students went further

when answering the survey, they answered fewer questions (Bloom et al., 2003). A

question analysis was conducted and the number of questions answered by the students at

the end of the survey was fewer than at the beginning of the survey. As the survey

progressed, fewer people provided answers. A pattern was noticeable when students who

remained in school (n = 726 vs. n = 716) and the students who withdrew (n = 80 vs

n = 76) started answering the questions. The number is small, but the researcher wanted

to bring it to the reader's attention. Despite these threats to internal validity, the

implications of the study might be helpful to the reader. Despite this concern, the DESP

has been used in other studies already addressed in the literature review (Joel, 2006;

Houle, 2004; Woodley, 2001; Thompson, 1999; Kember 1995).

Practical Implications

There are three implications the researcher believes to be important. The first

implication of this research study reveals that there is a correlation between course

performance (GPA) and student retention. The correlation analysis showed a low

negative but significant correlation (r = -.134) p < .01., social integration was a factor in

the students who remained in school. The social integration construct encompasses 11

questions dealing with enrollment encouragement, study encouragement, and family

support. The students who remained agreed more with the questions pertaining to social

integration while the students who dropped agreed less with the same questions. Tinto's

model of student retention explains that when the social integration is minimal, the

probability of leaving school is greater (Tinto, 1987). The GPA of the students who

dropped (n = 80) was 1.90 while the GPA of the students who remained (n = 726) was

3.1. Out of the 80 students who dropped, only 39 students provided accurate student identification numbers and therefore, only these 39 students' GPA's could be verified. It is interesting to note that students who dropped showed a tendency to agree less with social integration questions and showed a lower GPA. The low statistical significance in the sample size in this study will be explained as a limitation.

The second implication deals with academic incompatibility subscale which had a low but significant positive correlation ($r = .251$), $p<.01$. Academic incompatibility consists of four sub-subscales (20 questions): surface approach, extrinsic motivation, negative course evaluations, and English ability. The researcher, with the proper permission, slightly modified the academic incompatibility subscale by removing the last four items that dealt with English ability. Kember et. al, the scale developers, work in Hong Kong and the questions were mainly geared for students whose English is a second language. An important aspect of the academic incompatibility construct is negative course evaluation. According to the literature review, proper course design and development enhance students' motivation to remain in the course (Meyen et al., 2002; Yin-Sum & Tak-Wing, 2002; Junaidu & Al-Ghamdi, 2002; Meyen et al., 1999).

The third implication of this study reflects the statistically significance difference between the means of those students who remained (M = 3.34, SD = .544) and those who withdrew (M = 3.19, SD = .649) on the external attribution subscale. External attribution comprises four sub-subscales which ask questions about insufficient time which could involve work, family obligations, social or community obligations, events hindering study, work schedule, family or personal problems, or illness, distractions that could

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encompass some of all of the above already mentioned, and questions regarding potential drop-outs (Kember, 1995).

Conclusions

1. The research found that there are more female students taking online classes than men.

2. The research found that there are more white female students taking online classes than any other race.

3. There are more freshman students than any other college level in this particular sample.

4. Social integration is an important factor in the student's resolution to remain in school. Enrollment encouragement, study encouragement, and family support are significant aspects of online student retention and course performance.

5. The data analysis for research question number three showed that external attributions such as insufficient time, events hindering study, distractions, and potential drop-outs are contributing factors in online student retention.

6. Students' demographic characteristics, in particular, previous online experience, age, gender, and race showed slight significant variables of online student course performance (GPA). However, this may be due to the large sample size for the population that answered those particular questions pertaining to the demographic information in the survey.

7. The research found that social integration and academic incompatibility are significant predictors of online student course performance (GPA).

Limitations

1. Of the 80 students who withdrew from school, only 39 provided their student identification numbers so their GPA's could not be verified on the other 41 students who dropped. Even though this is small, it is affirmed that practical significance is more important which makes this information worthwhile. The results have practical significance to the researcher (Bloom et al., 2003).

2. The sample size of the students who dropped (n = 80) without GPA's being verified (n = 39), limited the generalizability of the results. Practical significance is important because the questions measure personal values from all the students who participated in the survey (n = 877).

3. The students' characteristics such as previous online experience, age, gender, and race showed to be a statistical significance explanatory variable on the student performance as measured by GPA. However, the descriptive data demonstrated that these are the most frequent characteristics. The reader needs to be reminded that this could be a statistical artifact or distortion resulting from the large sample size for the students who remained (n = 726).

4. As the survey progressed, fewer people provided answers. This might have happened due to the number of questions on the survey.

5.   Kember's et. al DESP Inventory was not developed to predict student

retention. It was mainly a Model for people to understand student progress in

distance education (Thompson, 1999).

Recommendations for Future Study

Based on the interpretations, implications, and conclusions in this research study,

the following recommendations for future scholarly research studies are presented in the

area of online student retention:

1.   The DESP Inventory should be used with students who withdraw from school.

2.   The variables found to predict on student retention (social integration, external

attributions, and academic incompatibility) should be used in a replication

study on students who drop out of school. For this study, the DESP was

utilized with students who were in school.

3.   The survey questions that deal with English ability should be kept intact on the

survey. The researcher in this study decided to remove them because the

questions in the original survey were written in Hong Kong where English is

not the official language.

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Appendix A

Survey

Part I – Student Characteristics

Part II – Distance Education Progress (DESP) Inventory

Part III – Course Performance and Course Persistence

Part 1 -- Student Characteristics

Instructions: Please check one response or fill in the blank that best describes you for each of the following questions.

1. What is your Student ID number?

_____

2. Age in years. (fill in the blank)

_____

3. Gender

○ Male

○ Female

4. Race (Check one that you most consider yourself to be)

○ White

○ African American

○ American Indian

○ Asian or Hawaiian/ Pacific Islander

○ Native American

5. Ethnicity (Check one that you most consider yourself to be)

○ Hispanic or Latino

○ Non-Hispanic or Latino

6. College Grade Level

○ Freshman

○ Sophomore

○ Junior

○ Senior

7. Prior number of online learning courses taken?

_____

8. Employment Hours per week (0 to ___)

_____

9. Marital Status

○ Single

○ Married

○ Separated/Divorced

○ Widow/Widowed

10. Number of Children at Home (_____)

_____

Part 2 -- Distance Education Student Progress (DESP) Inventory

> **Instructions:** Please check one response that best describes you for each of the following questions. 1=Definitely agree, 2=Agree with reservations, 3=Only to be used if the item does not apply to you or if you find it impossible to give a definite answer, 4=Disagree with reservations, 5=Definitely disagree.

1. My spouse encouraged me to enroll in this course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

2. My family encouraged me to enroll in this course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

3. My employer encouraged me to enroll in this course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

4. My friends encouraged me to enroll in this course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

5. My employer was supportive while I was studying.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

6. My spouse offered support while I was studying.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

7. My workmates encouraged me to study.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

8. My family encouraged me to study because they thought the degree was important.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

9. I usually spend a lot of time with my family.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

10. *I don't need the support of my family to succeed in this course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

11. The support of my family means a lot to me.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

12. As I work long hours it is difficult to find time to study.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

13. Long hours at work left little time for study.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

14. I seem to have so many other things to do there is never enough time for study.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

15. A change in my work left me without enough time for study.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

16. A change to my work situation made it difficult to complete the course.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

17. I was ill during the course, so found it difficult to keep up.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

18. Personal/family circumstances, unseen at the time of enrollment, hindered my studies.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

19. I prefer to spend time doing things other than studying.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

20. I have a busy social life.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

21. I went out a lot, rather than studying.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

22. My spouse became annoyed because I spent so much time studying.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

23. My children interfered with my studies.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

24. * I do not let anything interfere with my studies.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

25. My friends wanted me to go out rather than study.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

26. * I am very determined to finish the course.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

27. I often consider dropping out from the course.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

28. I often wonder whether all the study is worth the effort.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

29. I generally put a lot of effort into trying to understand things which seem difficult at first.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

30. I usually set out to understand thoroughly the meaning of what I am asked to read.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

31. When I'm tackling a new topic, I often ask myself questions about it which the new information should answer.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

32. I often find myself questioning things that I read in books or study materials.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

33. My main reason for doing this course is so that I can learn more about the subjects which really interest me.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

34. I find that studying academic topics can often be really exciting.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

35. I spend a good deal of my spare time in finding out more about interesting topics in the course.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

36. I find academic topics so interesting, I should like to continue with them after I finish this course.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

37. I found the study guide useful in preparing for the course.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

38. The activities/self-assessment questions have helped me to learn.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

39. The study booklets are easy to learn from.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

40. The tutor's comments on my assignments have helped me to study.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

41. The course was administered very efficiently.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

42. The telephone counseling service is useful.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

43. The telephone counseling service provided help when I needed it.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

44. *Telephone counseling is a waste of time.

○ Definitely Agree

○ Agree with Reservations

○ Agree with Reservations

○ Disagree with Reservations

○ Definitely Disagree

45. I use the telephone counseling service often.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

46. I enjoy reading so I am suited to distance learning courses.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

47. I read other books as well as the study materials and set texts.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

48. I read widely.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

49. Lecturers seem to delight in making the simple truth unnecessarily complicated.

- ○ Definitely Agree
- ○ Agree with Reservations
- ○ Not Applicable
- ○ Disagree with Reservations
- ○ Definitely Disagree

50. The best way for me to understand what technical terms mean is to remember the text-book definitions.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

51. I find I have to concentrate on memorizing a good deal of what I have to learn.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

52. When I'm reading I try to memorize important facts which may come in useful later.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

53. I usually don't have time to think about the implications of what I have read.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

54. Often I find I have read things without having a chance to really understand them.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

55. I suppose I am more interested in the degree I'll get than in the course I'm taking.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

56. I chose the present course mainly to give me a chance of a really good job afterwards.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

57. I generally choose what I study more from the way it fits in with career plans than from my own interests.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

58. My main reason for doing this course is that it will help me to get a better job.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

59. The learning materials are presented in a confusing way.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

60. I do not understand a lot of English words in the study materials.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

61. The type of work required by assignments is very different from what I expected.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

62. The course is not run at the most suitable time of the year.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

63. The assignments are too difficult.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

64. The time allowed for completing the course is too short.

○ Definitely Agree

○ Agree with Reservations

○ Not Applicable

○ Disagree with Reservations

○ Definitely Disagree

Thank you for participating.

*Reverse coded

Part 3 -- Course Performance and Course Persistence

Course Performance

GPA= _____ (based on a 0-4:00 scale)

Course Persistence

Did the student register for the following semester?
___ Yes ___ No

Appendix B

Lynn University IRB Approval to conduct study

Keiser University Approval to conduct study

Lynn University

Principal Investigator: Sandra Porta-Merida

Project Title: Online Learning Success: Underlying Constructs Affecting Student Attrition

IRB Project Number: 2008-020

IRB Action by the Convened Full Board:
Date of IRB Review of Application and Research Protocol: 07/16/08

IRB Action: Approved X Approved w/provision(s) __ Not Approved __Other __

Comments:

Consent Required: No _____Yes X Not Applicable _____ Written X Signed____

Consent forms must bear the research protocol expiration date of 07/16/09

Application to Continue/Renew is due:

1) For a Convened Full-Board Review, two months prior to the due date for renewal X

2) For an Expedited IRB Review, one month prior to the due date for renewal __

3) For review of research with exempt status, one month prior to the due date for renewal __

Name of IRB Chair: Farideh Farazmand

Signature of IRB Chair_____████████████████_____ Date: __07/16/08

Cc: Dr. Tebes

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail Boca Raton, Florida 33431

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KEISER UNIVERSITY

Office of The Chancellor

1900 W. Commercial Blvd.
Suite 180
Ft. Lauderdale, Florida 33309
Telephone: ▮
Fax: ▮

June 9, 2008
Sandra Porta-Merida
Keiser University
1900 W. Commercial Blvd.
Ft. Lauderdale, FL 33309

Dear Ms. Porta-Merida:

We have reviewed your research proposal entitled, *Online Learning Success and its Underlying Constructs Affecting Student Attrition,* and approve your research prospectus for use at Keiser University. The eCampus Vice President will oversee the coordination of this project and will also be responsible for any data elements you need regarding requested student information. Before beginning your project you must submit a copy of Lynn University's IRB approval for our institutional records.

This research has the potential to provide important information about Keiser University students. We look forward to seeing the results of this work.

Sincerely,

▮

Gery Hochanadel, Ph.D.
Vice Chancellor of Academic Affairs
Chair, Institutional Review Board

▮

William F. Ritchie, Ph.D.
Associate Vice Chancellor, Institutional Research
Co-Chair, Institutional Review Board

Appendix C

Letters of invitation to participate in the survey

Lynn's Voluntary Consent Form

Subject: Research Study test

Message:

July 31, 2008

Dear Students: I hope this announcement finds each one of you in good health and that you are all enjoying your last class of the summer semester before your vacation at the end of this course.

I am in the process of finishing my Ph.D. in Global Leadership, with specialization in Educational Leadership and one of the requirements is to conduct a research study. I would like to invite you to participate in it by taking an online survey. The title of my dissertation is Online Learning Success: Underlying Constructs Affecting Student Attrition.

This study is about exploring online learning success and what motivates students to remain in school. With the accessibility, convenience, and flexibility, concerns such as student persistence and student attrition arise. The researcher hopes to use the results of this study to improve online student retention at Keiser University. I realize how busy all of you are, but your thoughts, opinions, impressions, and experiences are crucial in order for me to test the hypotheses and answer the research questions.

There are no right or wrong answers and these will be kept in strictest confidence. The information you provide will be collected only as an aggregate of all data collected.

This survey is voluntary. It will take approximately 10 to 12 minutes to complete. As a "Thank You", all students who submit a completed survey by August 13 will be included in an Ipod drawing. The winner will be announced at the end of the summer 08, term D. If you decide to participate, please click on the link below which will take you first to the consent form. After reading the consent form, if you decide to participate, please click on the "I AGREE" button. This will direct you to the online survey. If you wish to exit, then, click on the "Do Not Agree" button.

Your participation is greatly appreciated and it will definitely help the entire online population at e-Campus. Thank you for your time and cooperation and it is only with the generous help of students like you that our research and subsequent online courses can be successful.

Sincerely yours,

Sandra Porta-Merida
Academic Dean, Latin Division
Keiser University, E-Campus

Subject: Research Study test (second reminder)

Message: August 15, 2008

Dear Students: I hope you are all enjoying your summer. Just think about the summer break right after this course ends.☺

I web posted and e-mailed you an invitation to participate in an online survey two weeks ago. If you have not had the opportunity to fill it out, please do so now. As I indicated in my previous invitation, I am a doctoral student trying to finish my Ph.D. in Global Leadership, with specialization in Educational Leadership and one of the requirements is to conduct a research study. I would like to invite you to participate in it by taking an online survey. The title of my dissertation is ***Online Learning Success: Underlying Constructs Affecting Student Attrition.***
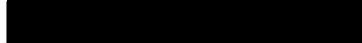
This study is about exploring online learning success and what motivates students to remain in school. With the accessibility, convenience, and flexibility, concerns such as student persistence and student attrition arise. The researcher hopes to use the results of this study to improve online student retention at Keiser University. I realize how busy all of you are, but your thoughts, opinions, impressions, and experiences are crucial in order for me to test the hypotheses and answer the research questions.

There are no right or wrong answers and these will be kept in strictest confidence. The information you provide will be collected only as an aggregate of all data collected.

This survey is voluntary. It will take approximately 10 to 12 minutes to complete. As a "Thank You", all students who submit a completed survey by August 30 will be included in an Ipod drawing. The winner will be announced at the end of the summer 08, term D. If you decide to participate, please click on the link below which will take you first to the consent form. After reading the consent form, if you decide to participate, please click on the "I AGREE" button. This will direct you to the online survey. If you wish to exit, then, click on the "Do Not Agree" button.

Your participation is greatly appreciated and it will definitely help the entire online population at e-Campus. Thank you for your time and cooperation and it is only with the generous help of students like you that our research and subsequent online courses can be successful.

Sincerely yours

Sandra Porta-Merida
Academic Dean Latin Division
Keiser University, E-Campus

THIS DOCUMENT SHALL ONLY BE USED TO PROVIDE AUTHORIZATION FOR VOLUNTARY CONSENT

PROJECT TITLE: *Online Learning Success: Underlying Constructs Affecting Student Attrition*

Project IRB Number: _____ Lynn University, 3601 N. Military Trail, Boca Raton, Florida 33431
2008-020

I, Sandra Porta-Merida, am a doctoral student at Lynn University. I am studying Global Leadership, with a specialization in Education. One of my degree requirements is to conduct a research study.

DIRECTIONS FOR THE PARTICIPANT:

You are being asked to participate in my research study. Please read this carefully. This form provides you with information about the study. The Principal Investigator (Sandra Porta-Merida) will answer all of your questions. Ask questions about anything you don't understand before deciding whether or not to participate. You are free to ask questions at any time before, during, or after your participation in this study. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled. You acknowledge that you are at least 18 years of age, and that you do not have medical problems or language or educational barriers that precludes understanding of explanations contained in this authorization for voluntary consent.

PURPOSE OF THIS RESEARCH STUDY: This study will explore the relationships among online student progress, student characteristics of successful online completers, and how the social and academic integration factors affect student retention, course persistence, and course performance. With the accessibility, convenience, and flexibility, concerns such as student persistence and student attrition arise. There are numerous higher educational institutions offering online delivery of programs that are suffering student retention. Many researchers agree on the various reasons why online students drop out of their online classes but little has been researched on the solutions to improve student retention.

The entire e-Campus population is being invited to participate in this survey. It will take you approximately 10 to 12 minutes to complete. Your feedback is greatly appreciated. This survey will be conducted during the summer term 2008 which will start on July 28th.

PROCEDURES: If you agree to participate after reading this consent form, you will be asked to fill out two parts. The first one deals with Student Characteristics. This section contains nine questions (fill in the blanks, yes and no, and multiple choice questions. This section will take you about one minute. The second part contains 64 questions pertaining to family, work, and social commitments. The questions are very easy to read. This section should take you no more than 10 minutes. If you decide to participate, please click on "I agree". This will direct you to the online survey.

As an incentive to participate, your student identification number will be entered in an Ipod drawing. The ID numbers of students who decide to participate will enter a drawing to win the Ipod. The name of the winner will via certified mail at the end of the data collection (August 22).

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POSSIBLE RISKS OR DISCOMFORT: This study involves minimal risk. You may find that some of the questions are sensitive in nature. In addition, participation in this study requires a minimal amount of your time and effort.

POSSIBLE BENEFITS: There may be no direct benefit to you in participating in this research, but knowledge may be gained which may help future students attending Keiser University or any other institution of higher education and administration staff understand online learning success and its factors affecting course performance and student retention.

FINANCIAL CONSIDERATIONS: There is no financial compensation for your participation in this research. There are no costs to you as a result of your participation in this study.

CONFIDENTIALITY: Every effort will be made to maintain confidentiality. Your identity in this study will be treated confidential. You are being asked to provide your student ID number for two reasons: 1) Part of the study deals with course performance and course persistence where the GPA and student registration for the fall semester will be considered and 2) Completed surveys will enter a drawing of an Ipod as a "Thank You" for participating. Only the researcher (Sandra Porta-Merida) and the Committee Chair (Dr. Tebes) will know who you are. Data will be coded using that number.

The results of this study may be published in a dissertation, scientific journals or presentations at professional meetings. In addition, your privacy will be maintained in all publications or presentations resulting from this study.

All data gathered during this study, which were previously described, will be kept strictly confidential by the researcher. Hard copies of the surveys will be stored in locked files and destroyed at the end of the research. In addition, to maintain the confidentiality of the surveys, the data will be saved using a password protected computer and destroyed at the end of the research.

RIGHT TO WITHDRAW: You are free to choose whether or not to participate in this study. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate.

CONTACTS FOR QUESTIONS/ACCESS TO CONSENT FORM: Any further questions you have about this study or your participation in it, either now or any time in the future, will be answered by Sandra Porta-Merida (Principal Investigator) who may be reached at: ▮▮ - ▮▮ and Dr. Tebes, faculty advisor who may be reached at: ▮▮▮▮. For any questions regarding your rights as a research subject, you may call Dr. Farideh Farazmand, Chair of the Lynn University Institutional Review Board for the Protection of Human Subjects, at ▮▮ ▮▮▮▮ If any problems arise as a result of your participation in this study, please call the Principal Investigator (Sandra Porta-Merida) and the faculty advisor (Dr. Tebes) immediately.

INVESTIGATOR'S AFFIDAVIT: I hereby certify that a written explanation of the nature of the above project has been provided to the person participating in this project. A copy of the written documentation provided is attached hereto. By the person's consent to voluntary participate in this study, the person has represented that he/she is at least 18 years of age, and that he/she does not have a medical problem or language or educational barrier that precludes his/her understanding of my explanation. Therefore, I hereby certify that to the best of my knowledge the person participating in this project understands clearly the nature, demands, benefits, and risks involved in his/her participation.

Please Sign

Signature of Investigator

___ Agree
___ Do Not Agree

Date of IRB Approval: 07/16/08
Date of IRB Expiration: 07/16/09

Appendix D

Permission to use the Distance Education Student Progress (DESP) Inventory

Dear Sandra,

It was tested fairly thoroughly by a group at the UKOU which included Alan Woodley. I do not have the reference.

It is worth refering to John Richardson's book as he reviews studies with the inventory. There are not many refered to, but he does take a critical line and knows what he is talking about. If you cannot get hold of the book, I can send you a copy of the relevant chapter.

It is easy to test for reliability, by running Cronbach alpha tests on the scales. I believe some have come out a bit low when others have used it. This does not suprise me as there are a lot of short scales.

Validity claims are that it is based on a model which is ground in an extensive literature base.

Richardson, J.T. E. (2000). Researching student learning: Approaches to studying in campus-based and distance education. Buckingham: SRHE and Open University Press.

Kind regards,

David

----- Original Message -----
From: "Sandra Porta-Merida" <██████████████████████>
To: "David Kember" <████████████████>
Sent: Wednesday, April 23, 2008 9:55 AM
Subject: RE: DESP Model/Scale

> Hello Dr. Kember: I hope this e-mail finds you in good health.
>
> It's been a while since we last communicated. I am almost done with my
> first three chapters and hope to defend my dissertation proposal during
> the first week of June. I wanted to ask you if you know of any empirical
> data that used the DESP Inventory. I am using it as part of my survey,
> but I am having a hard time with the reliability and validity of it. I
> found a couple of articles but my Chair wants me to locate more.
>
> Your response will be greatly appreciated.
>
> Thank you,
>
> Sandra Porta-Merida
>>_____
>>
>>De: David Kember [████████████████████]
>>Enviado el: lun 08/10/2007 23:15
>>Para: Sandra Porta-Merida
>>Asunto: RE: DESP Model/Scale
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>>

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>>
>>At 10:49 PM 10/8/2007 -0400, you wrote:
>> >Good evening Dr. Kember, I hope everything is going well with you.
>> >
>> >I am working on my instrumentation chapter and I wanted to know if you
>> >are
>> >the only copyright holder of the DESP.  In one of your attachments you
>> >mentioned David Kember, Tammy Lai, David Murphy, Irene Siaw and
>> >K.S.Yuen.  I want to make sure credit is given where credit is due.
>> >Thank
>> >you so very much for taking the time to clarify.
>>
>>Credit should go to all
>>
>>David
>>
>> >
>> >Warm regards,
>> >
>> >Sandra Porta-Merida
>> >
>> >_____
>> >
>> >De: David Kember ███████████████████████
>> >Enviado el: jue 09/08/2007 4:51
>> >Para: Sandra Porta-Merida
>> >Asunto: RE: DESP Model/Scale
>> >
>> >
>> >
>> >Dear Sandra,
>> >
>> >Attached are copies of the inventory and handbook. You have permission
>> >to
>> >adapt and use as you see fit. All of the research based on the inventory
>> >and model was compiled into
>> >Kember, D. (1995). Open learning courses for adults: A model of student
>> >progress. Englewood Cliffs, NJ: Educational Technology Publications.
>> >
>> >You might also be interested in my most recent book in this area, a
>> >flyer
>> >is attached.
>> >
>> >Kind regards,
>> >
>> >David
>> >
>> >
>> >At 04:14 PM 7/28/2007 -0400, you wrote:
>> > >Dear Dr. Kember:
>> > >
>> > >Thank you so much for taking the time to reply.  My address is:
>> > >
>> > >Mrs. Sandra Porta-Merida
>> > ███ ██████████████
>> > >
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>> > >I have read two dissertations where your materials have been used and
>> > >they
>> > >were able to make the necessary adjustments for the online
>> > >environment.  From your e-mail, I gather that I have your permission
>> > >to
>> > >use the model and the scale, correct?
>> > >
>> > >I greatly appreciate your assistance and I hope you have a safe trip
>> > >back
>> > >to Hong Kong.
>> > >
>> > >Warm regards,
>> > >
>> > >Sandra
>> > >
>> > >
>> > >
>> > >_____
>> > >
>> > >De: KEMBER David Richard  [                            ]
>> > >Enviado el: vie 20/07/2007 1:18
>> > >Para: Sandra Porta-Merida
>> > >Asunto: Re: DESP Model/Scale
>> > >
>> > >
>> > >Dear Sandra,
>> > >
>> > >I am on leave at present and do not have access to what you want. If
>> > >you
>> > >let me
>> > >know your mailing address, I will send you what you want shortly after
>> I get
>> > >back to HK in early August. You will have to adapt the work somewhat
>> > >as
>> > at the
>> > >time we did the work distance education used packaged course materials
>> > >and
>> > >tutorial support, as this pre-dated on-line access. However, others
>> > >have
>> > >managed to update the invetory without too much trouble.
>> > >
>> > >Kind regards,
>> > >
>> > >David
>> > >
>> > >Quoting Sandra Porta-Merida  [                        ]:
>> > >
>> > > > Hello Dr. Kember: I hope this e-mail finds you in good health.
>> > > >
>> > > > I am a doctoral student at Lynn University and I am very much
>> > interested in
>> > > > finding out more about the DESP Model.  My dissertation deals with
>> > student
>> > > > retention in the online environments and the constructs in your
>> > scale/Model
>> > > > are
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>> > > > extremely relevant.  I would greatly appreciate it if you would let
>> > me know
>> > > > if there is cost to using it and how do I go about acquiring proper
>> > > > permission from you to do so.
>> > > >
>> > > > Dr. Kember, the Head Librarian at Lynn was not able to locate the
>> article
>> > > > listed below.  If you have the electronic version, I would be
>> > > > forever
>> > > > grateful.  It is unfortunate, but there is not much literature on
>> student
>> > > > persistence in the online environment.
>> > > >
>> > > > Kember, D., Lai, T., Murphy, D., Siaw, I., & Yuen, K. S. (1995).
>> Student
>> > > > progress in distance education. A handbook for the DESP inventory
>> and the
>> > > > interview schedule. Unpublished manuscript, Hong Kong Polytechnic
>> > > University,
>> > > > Hong Kong.
>> > > >
>> > > >
>> > > > Thank you so very much for taking the time.
>> > > >
>> > > >
>> > > > Warm regards,
>> > > >
>> > > >
>> > > > Sandra Porta-Merida
>> > > >
>> > >
>> > >
>> > >
>> > >
```