DISSERTATION

FACTORS INFLUENCING NONTRADITIONAL STUDENTS' PERSISTENCE IN ONLINE PROGRAMS FOR NONTRADITIONAL STUDENTS ATTENDING A WISCONSIN TECHNICAL COLLEGE

Submitted by

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ABSTRACT

FACTORS INFLUENCING NONTRADITIONAL STUDENTS' PERSISTENCE IN ONLINE PROGRAMS FOR NONTRADITIONAL STUDENTS ATTENDING A WISCONSIN TECHNICAL COLLEGE

The purpose of this study was to determine the factors that play a significant part in online students' intent to persist at a Wisconsin Technical College. Specifically, this project focused on the relationships between intent to persist and the following variables: GPA, academic advising (concern), academic advising (appointment), education usefulness, student satisfaction, commitment, academic stress, outside encouragement from parents/spouse, outside encouragement from employer, outside encouragement from friends, and financial certainty.

Data were collected through an online survey of FLEx students at Moraine Park Technical College in Wisconsin. The nontraditional student attrition questionnaire developed by Metzner (1983) and Bean (Metzner & Bean, 1987) was the instrument for the study. The instrument was used to examine the factors affecting intent to persist for both online and face-to-face students. Because the study included factors that the college may not have direct influence over, a separate analysis was conducted for factors that the college can directly affect.

The results of this study showed that education usefulness, outside encouragement from employer, outside encouragement from friend, and financial certainty played important roles in online students' intent to persist for both internal and external college-controllable variables. For face-to-face students, financial certainty, student satisfaction, academic stress, and outside encouragement by parents or spouse were the most important factors in intent to persist for both internal and external college-controllable variables.

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CHAPTER ONE: INTRODUCTION

Background

Student retention has historically challenged education institutions, especially those that offer distance education courses (Berg & Huang, 2004). Online course enrollments continue to grow as students seek out education that is more flexible than face-to-face courses (Lee & Choi, 2011). According to the Instructional Technology Council (2013), distance education grew 6.52% from the fall of 2011 to the fall of 2012. Even though this growth rate was slower than the rate of 22% seen between the falls of 2007 and 2008, it was still a noteworthy increase at a time when face-to-face courses registered a decrease. However, according to the Instructional Technology Council (2013), the online course completion rate averages around 8% less than the completion rate measured in face-to-face courses. This lower completion rate has an effect on a student's perception of the quality of academic programs, leading to an impact on the number of students attending the institution (Willging & Johnson, 2004).

The current study of nontraditional student persistence took place at a two-year higher education college in Wisconsin. Moraine Park Technical College (MPTC) is a public, two-year institution consisting of three campuses in east-central Wisconsin. MPTC is one of 16 technical colleges in the State of Wisconsin. The Moraine Park District encompasses 10 counties and covers an area of 2,450 square miles, with a population base of 300,232 people. At the time of this study, Moraine Park served over 21,000 students annually, with an annual full-time equivalent (FTE) population of 3,233 students (Moraine Park Technical College, 2014).

As a two-year, open-enrollment college, MPTC is more apt to attract nontraditional students. Bean and Metzner (1985) described nontraditional students as those who are 25 years

of age or older, who most likely commute, and who often work toward their educational goals part-time. Because of these characteristics, students attending a two-year college often have different needs than those attending a four-year college or university (Cohen, 2003). Therefore, the persistence of nontraditional students will likely be influenced by different factors than those that affect traditional students—for example, family responsibilities at home interfering with academic demands (Kember, 1995).

Helfgot (1995) examined factors that may motivate a student to persist in a community college. Helfgot listed several characteristics typical of community college students: (a) part-time enrollment, (b) older in age, (c) lower level of financial preparedness, (d) lower priority for degree completion, (e) financially disadvantaged, and (f) minority status. Although this list of characteristics may not represent everyone who attends two-year institutions, it does address key factors that may influence persistence.

Helfogt's descriptions of student characteristics were presented in a report published by the American Association of Community Colleges (2013). According to the American Association of Community Colleges, in 2011, the average age of community college students in the United States was 28 years old (American Association of Community Colleges, 2013). Community colleges across America enrolled 13 million students; 8 million of these students were taking coursework to earn credits (American Association of Community Colleges, 2013). Forty percent of students enrolled in community colleges were first-generation students, 16% were single parents, and 12% were students with disabilities (American Association of Community Colleges, 2013).

Bean and Metzner (1985) predicted nontraditional students attending a two-year college would outnumber traditional students enrolled in the same education path. Although this prediction was written in 1985, in 2014, the MPTC student body accurately reflected this

statement. In the 2013–2014 academic year, the average age of an Associate's degree student attending MPTC was 31, and women outnumbered men almost 2 to 1 (Ljubenko, personal communication, March 21, 2014). Table 1 provides a breakdown of online student enrollment for MPTC by age group. In addition, Table 2 shows the number of online students by gender.

Table 1

Number of Online MPTC Students by Year and Age

Academic Year	<18	18-24	25-29	30-34	35-44	45-54	55-61	>61	Total
2004	11	502	188	162	272	166	35	5	1,341
2005	20	586	242	198	321	277	47	9	1,700
2006	9	678	308	281	424	278	63	15	2,056
2007	3	689	347	258	422	303	71	45	2,138
2008	6	802	371	262	411	295	37	10	2,194
2009	9	911	394	300	445	270	63	12	2,404
2010	10	993	495	325	492	372	88	14	2,789
2011	8	953	531	403	591	368	102	15	2,971
2012	6	825	474	393	534	282	69	12	2,595
2013	5	840	465	361	456	270	55	15	2,467
2014	46	887	406	288	415	237	40	11	2,330

Source: Wisconsin Technical College System – Client Reporting, unduplicated

Table 2

Online MPTC Student by Gender

Academic Year 2014	Student Count
Female	1,675 (71.88%)
Male	655 (28.11%)
Total	2,330

Source: Wisconsin Technical College System – Client Reporting, unduplicated student count

At the time of this study, the 16 WTCS colleges offered courses online. MPTC is not new to online education and has been offering online courses and programs since the mid-1990's (Rice, personal communication, April 1, 2014). In fact, MPTC was one of the first technical colleges in Wisconsin to offer online education (Rice, personal communication, April 1, 2014). . Since the inception of online courses at MPTC, the number of Higher Learning Commission-approved programs and certificates has grown to 22, plus two apprenticeships (Moraine Park Technical College, 2014c). In addition to the approved formal programs and certificates, MPTC often offers online courses as a viable alternative to many of the face-to-face, on-campus courses (Moraine Park Technical College, 2014c).

Distance learning in general may not be a new choice for delivering education; however, online education is one of the newest distant learning modalities. The invention of online education has allowed greater numbers of nontraditional students to access higher education (Allen & Seaman, 2011). However, whether students complete a course through distance education or through traditional face-to-face environments, students still expect quality education, along with the same chance to succeed in meeting their educational goals. Low

retention rates are increasingly motivating institutions to adopt new standards to provide academically credible education and appropriate support services in an effort to improve student persistence (Tinto, 2012).

Whether education is offered at a distance or face-to-face, colleges are increasingly becoming more interested in why one student may be successful and why another student in the same course is not (Schumann, 2009). According to Berg and Huang (2004), student retention has historically challenged education institutions, especially those that offer distance education courses. Determining why a certain student will persist over his or her peers can be difficult and complex because of the number of internal and external variables. Multiple models have been developed and many articles written on student persistence; however, there are substantially fewer studies of theories and models relating to persistence of online students (Simpson, 2003). Most of the research has evolved from models developed for traditional, face-to-face students.

Lee & Choi (2011) reported that increasing numbers of students and faculty are drawn to online education because of the freedom of time and space this modality provides. Allen and Seaman (2013) reported that online education serves a vital role in higher education institutions. In 2002, fewer than 50% of higher education institution administrators reported that online education was critical to their long-term strategies (Allen & Seaman, 2013). In the latest report, the number had grown to 69.1% (Allen & Seaman, 2013). In addition, for each year the report was conducted, online enrollments have increased at rates in excess of overall higher education rates (Allen & Seaman, 2013). The number of students taking at least one course online grew to 6.7 million in 2012 (Allen & Seaman, 2013). This is an increase of 570,000 students taking online courses since 2002; approximately 32% of higher education students now take at least one course online (Aslanian & Clinefelter, 2012). With the recent historic growth in online learning Allen and Seaman (2013) has begun to ask the question when will online enrollment beginning

to level off or even decrease? Institutions may not know the answer to the previous question; however understanding the risk factors associated with student persistence, demographics of student groups, and enrollment trends are important to community or technical colleges, where the common policy of open admission inherently attracts a higher population of at-risk and underprepared students (Allen & Seaman, 2013; Crawley, 2012; Bean & Metzner, 1985; Lee & Choi, 2011).

Statement of the Problem

Higher education institutions are receiving growing demands to offer distance education, especially online modalities (Parsad & Lewis, 2008). To meet their educational goals, students, specifically nontraditional students, often choose to take online courses for the inherent flexibility of time and location (Lee & Choi, 2011). In addition to flexible schedules, students choose online education for convenience, work requirements, and program requirements (Noel-Levitz, 2009). According to Crawley (2012), nontraditional students enroll in online classes because of the complexity of their lives. However, as online enrollments continue to grow, community colleges experience higher attrition rates compared to the rates found in face-to-face courses, thus affecting student persistence rates (Lee & Choi, 2011). Table 3 shows the number of students who have successfully completed an online course, compared to those who completed a face-to-face course at Moraine Park Technical College. There is almost a 15-point negative difference between online and face-to-face completion.

Table 3

Online MPTC Student by Success and FTE Counts: Duplicated

Academic Year 2014	Online Student Count	Face-to-Face Student Count
Pass	1,925 (69.72%)	15,237 (85.78%)
Fail	490 (17.74%)	1,540 (08.67%)
Withdraw	376 (13.61%)	985 (05.54%)
Total	2,761	17,762

Source: Wisconsin Technical College System – Client Reporting

Purpose of the Study

The purposes of this quantitative study were (a) to examine nontraditional students who were enrolled in online courses in order to discover the factors that may contribute to a student's intent to persist and (b) to share those factors with college administrators and faculty. This study focused on discerning the student persistence factors that technical college administrators can influence, as well as on identifying the factors outside of the academic institution that may influence a nontraditional student to persist. In addition to looking at these factors, the researcher sought to develop a potential model to identify which factors may motivate a nontraditional student's decision to persist and to determine how the factors are related. Using the results of this study, institutions may be able to implement procedures and practices to increase student persistence rates.

Research Questions

The research questions for this study provided the framework to investigate nontraditional students' persistence in online courses:

Research Question 1: Can online program students' intent to persist be predicted from a combination of 1) GPA and the self-perceptions of, 2) Academic advising concern (perception of

advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Research Question 2: What differences, if any, exist between online program students' intent to persist and face-to-face students' intent to persist from a combination of, 1) GPA and the self-perceptions of 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Definitions and Terms

For this report, the following definitions were adopted:

Academic advising: A process to provide encouragement, student support, and information needed to be successful as a registered student (Bean & Metzner, 1985; Metzner, 1983).

Attrition/dropout rate: The rate at which students leave school for reasons other than graduation. The reasons to leave school could be either voluntary or involuntary (Bean & Metzner, 1985; Simpson, 2013).

Duplicated: A student can be counted multiple times, no matter how many courses the student may be enrolled in during an academic year. For example, if a student is enrolled in two courses, the student is counted twice (Wisconsin Technical College System, 2014c).

FTE or full time equivalent: A numerical value that shows how many headcount students (headcount) a college would have had if each student earned exactly 30 credits during an academic year (Wisconsin Technical College System, 2014c).

Traditional course: A course that is offered and completed via a face-to-face method in a classroom on campus (Wisconsin Technical College System, 2014c).

Nontraditional students: A student attending college who meets at least one of the following criteria: age 25 or older, family responsibilities (raising/caring for a family), or employment responsibility (e.g., working to support life needs; Bean & Metzner, 1985; Metzner, 1983).

Persistence: The behavior of a student who decides to continue to pursue his or her educational goals from course to course through graduation (Bean & Metzner, 1985; Metzner & Bean, 1987; Stravredes, 2011).

Persistence rate: A measure that describes how many college students return from one semester to the next (Stravredes, 2011).

Retention: A measure that reflects the percentage of students who successfully meet all program requirements and successfully graduate (Stravredes, 2011).

Traditional student: A student attending college who is under the age of 24, attending school a full-time, and working part-time or less (Bean & Metzner, 1985; Metzner, 1983).

Success: Students completing one or more college courses with a grade C or better (Moraine Park Technical College, 2014b).

Unduplicated: A student is counted once no matter how many courses the student may be enrolled in during an academic year. For example, if a student is enrolled in two courses, the student is only counted once (Wisconsin Technical College System, 2014c).

Delimitations

The research procedure utilized a survey sent to program students enrolled in FLEx degree programs at one of 16 Wisconsin Technical Colleges during the spring semester of academic year 2013, with no restrictions on credits earned or years completed. The findings are limited to the responses of students enrolled in the FLEx programs. The responses may differ from those of students attending other technical college programs. This delimitation was selected because the intention of this research was not to generalize the findings to a larger population—for example, to the populations of four-year colleges or universities.

Limitations

As stated, generalizability to other institutions was not the objective of the research; rather, this study focused on nontraditional students' intent to persist in online courses at only one of the 16 Wisconsin Technical Colleges. In addition to the single-institution study, there were limitations related to the location of the study and the limited sample size; therefore, the analysis provides limited statistical power. Further, all participants of this study volunteered. In addition, the conclusions of the study are based on the assumption that the students' responses to all questions were given honestly and willingly. According to Bigelow (2012), "There is little a researcher can do to mitigate the limitation for subject honesty, and voluntary participation renders it impossible to guarantee sample size" (p. 86).

Significance of the Study

Student success is an important outcome of student persistence and retention. However, when institutions experience low retention rates, the institutions will likely experience low persistence rates. Administrators, faculty, academic advisors, instructional designers, and other higher education professionals will benefit from continued research on improving student persistence factors related to online education in a technical college environment. A valuable

opportunity exists for researchers to increase student retention and knowledge transfer by linking research about the learning process with instructional strategies (Tennyson & Schott, 1997).

The WTCS typically offers an open-door admissions policy with minimal enrollment restrictions in classes, and Moraine Park Technical College is no exception (Moraine Park Technical College, 2015). After completing a brief application, a student is allowed to register for coursework unless there is a specific prerequisite for a course (Moraine Park Technical College, 2014e). This open enrollment policy can often allow students who are underprepared academically or technically to begin coursework.

Two-year colleges tend to have a higher average student age compared to the 18- to 24-year-old age range seen at traditional four-year institutions (Bean & Metzner, 1985). A greater number of students at two-year colleges commute and attend part-time, compared to students at four-year institutions (Cohen, 2003). Many other external factors compete with academics among students at two-year colleges (Cohen, 2003). This study of nontraditional student success may provide institution leaders with a better understanding of the resources required to address student persistence, ultimately allowing for better resource allocation. For example, if an institution is able to reduce its dropout rate, the institution will then experience improvement in the return on investment through a better alignment of resources (Martinez, 2003). In addition, continued student attendance and high program graduation rates have a positive impact on recruitment of new students, on enhancements of ongoing programs, and on acquisition of additional financial resources (Lee & Choi, 2011). Most importantly, if a nontraditional student is not able to complete a course or program of study successfully, he or she may have difficulty receiving a promotion, earning a higher salary, or reaching a career goal (Tinto, 2012.

In this study, the purpose was to explore facets of institutional support, curriculum design, and environmental factors in online education of nontraditional students as outcomes in

student persistence. Understanding these facets and how they interact with student persistence may help education organizations increase student retention. Maybe more importantly, this research will provide higher education organizations with recommendations for practices and procedures to help nontraditional students persist in online programs.

During the 2013–2014 academic year, MPTC enrolled 19,133 students (unduplicated) in undergraduate degree courses with an FTE of 2,983.30. Of these students, 2,330 students (unduplicated) enrolled in online courses; 864 students (unduplicated) enrolled in interactive television (ITV) courses; and 18,527 students (unduplicated) enrolled in face-to-face courses. Student success in online courses was 69.72%, compared to face-to-face success rates of 85.78%. (Wisconsin Technical College System, 2014).

Researcher's Perspective

At the time of this study, the researcher was a dean at a Wisconsin Technical College. The researcher's area of responsibility involved overseeing online programs and course offerings. In addition to the daily administrative duties of online education, the researcher taught various business and management-related courses in an online format. In addition to instructing courses online and daily administration of online programs, the researcher completed a Master's degree largely via an online format. Through his administrative and instructional experience, the researcher often found himself questioning what factors caused some students to continue successfully while others dropped out. Student persistence thus became a topic of discussion each term.

As nontraditional students continue to attend two-year colleges, other researchers will seek to discover what processes can be implemented to help students persist. Assistance is often thought to be found in the classroom; however, sometimes the need for assistance may be found

outside the classroom, centering on factors other than academic variables. The researcher sought to gain insight into the factors that motivate nontraditional students to persist.

CHAPTER TWO: LITERATURE REVIEW

The purpose of this chapter is to identify relevant information and models of student persistence for nontraditional students. Only 15% of students attending undergraduate programs are considered traditional students (Bichsel, 2013). Traditional students tend to live on campus and attend school full-time (Bichsel, 2013). Yet in 2011, close to 32% of all higher education students took at least one course via an online modality (Bichsel, 2013).

The invention of the Internet has given students the ability to obtain an education without regard to time or even location, but the Internet has presented challenges for colleges providing online education (Levey, 2003). As online education started to become more popular in higher education, many institutions moved into the online education market without a long-term strategic plan (Lorenzo, 2010). Now over two thirds of current academic leaders believe that online education is critical to the long-term success of their organization (Bichsel, 2013). "The challenge to colleges in the 21st century is not to decide why they should have an online distance learning program, but [to] decide how to design and implement such a program" (Levy, 2003).

Overview

The modality of distance education has been used in higher education for over 40 years; however, the first online class was offered in 1994 (Berg & Mrozowski, 2001; Levey, 2003). "[The World Wide Web] has caused the biggest change in education and learning since the advent of the printed book a little over 500 years ago" (Draves, 2000). With the evolution of technology academic leaders and higher education institutions are looking at recent case studies regarding student dropout and striving to find ways to improve student retention (Barefoot,

2004). Organizations, including higher education, are structured perfectly by training and policy to acquire the results that they receive (Bickel and Stroh, 2010).

According to Robinson (2000), academic leaders have the ability to create positive work cultures that can generate support and success as the organization adopts new technologies. Throughout the U.S., student retention rates represent a critical measurement of institutional effectiveness, because college funding is often affected by lower retention percentages (Derby & Smith, 2004). Student retention can be measured, but measuring student success is more difficult—students do not always declare their intentions when taking a course.

Tinto (2012), a recognized researcher and author in the area of student persistence, claimed that knowing the reasons why a student will leave an institution is not always the same as knowing why a student decides to stay. For this reason, institutional administrators should look for factors that determine student persistence and success. The reasons for persistence and success among nontraditional distance students can be quite different from the reasons offered by students attending traditional courses. Noel-Levitz (2009) reported some of the top reasons a student makes the decision to attend online courses include convenience, work schedule, flexible pacing, and program requirements. Lee and Choi (2011) introduced the thought that even though dropout rates in online learning remained high, students were attracted "because they are not restricted by time and place" (p. 593). However, students' reasons for attending education online might also be the reasons why students experience greater difficulty persisting in school. Stravredes (2011) mentioned that often learners have employment obligations outside of school, children to care for, and other responsibilities that make it difficult to manage online learning. Therefore, being too flexible in course delivery can result in the student falling behind and playing catch up later, which can lead to a negative impact on persistence (Stravredes, 2011).

Literature Search Process

The primary method of searching for literature on the topic of online student persistence was through a keyword search using Colorado State University's access to the Academic Search Premier database, ProQuest's digital dissertation and PsychINFO databases, and ERIC. The keywords used in several combinations included *persistence*, *online*, *dropout*, *retention*, *community college*, and *technical college*. A "snowball" method of searching for information was chosen after the initial literature review. According to Ang (2013), the process of snowballing starts with the initial set of articles. The researcher examines the reference lists of each article for additional relevant articles. The literature process closes once the researcher examines all the potentially relevant articles.

Wisconsin Technical College System

The Wisconsin Technical College System (WTCS) is a public education system made up of 16 college districts throughout the State of Wisconsin, each responsible for providing education to its respective district (Wisconsin Technical College System, 2014c). Wisconsin was the first state to establish a statewide system of vocational, technical, and adult education (Wisconsin Technical College System, 2014a). The WTCS "provides education to individuals in the programs with specific occupational orientation below the baccalaureate level" (Wisconsin Technical College System, 2014c, p. 1). State statutes indicate that the purpose of the WTCS is to provide "occupational education and training and retraining programs, including the training of apprentices; and customized training and technical assistance to business and industry to foster economic development and expansion of employment opportunities" (Wisconsin Technical College System, 2014c, p. 1). In addition, the WTCS focuses on "providing educational opportunities for high school age students, providing college transfer, community services, self-enrichment activities, and basic skills education, and providing education and

services addressing barriers to participation in technical education created by stereotyping and discrimination" (Wisconsin Technical College System, 2014c, p. 1).

Wisconsin Technical College System Board

The WTCS System Board is made up of 13 members representing various education sectors throughout Wisconsin. The Board's role is to establish policy direction for technical college programs across the state (Wisconsin Technical College System, 2014c). The State Board has "statutory authorization to determine the organization, plans, scope, and development of technical colleges; to appoint a president; to approve qualifications of educational personnel and courses of study; and approve district proposals for facilities development and land acquisition" (Wisconsin Technical College System, 2014c, p. 2).

Moraine Park Technical College

Moraine Park Technical College is a public, two-year institution comprising three campuses in east central Wisconsin, representing over a quarter of a million people. The district served is approximately 2,450 square miles covering, or partially covering, up to 10 counties (Moraine Park Technical College, 2013). The main campus is located in Fond du Lac, with additional campuses in West Bend and Beaver Dam (Moraine Park Technical College, 2013). In addition to offering courses at district high schools, the college also operates two regional centers. One center is located in Ripon, Wisconsin, and the other center is located in Jackson, Wisconsin. Moraine Park Technical College employed 418 employees during the 2012–2013 academic year—373 full-time and 45 part-time (Moraine Park Technical College, 2013).

In 2012–2013, Moraine Park Technical College served almost 20,000 students by offering more than 100 career options (Moraine Park Technical College, 2014c). The average student age during the 2012–2013 academic year was 30, with a median age of 33 and a modal age of 23 (Moraine Park Technical College, 2014b). Of the 19,358 students served in the 2012–

2103 academic year, 3,354 students were enrolled in an Associate of Applied Science degree program; 1,218 students were enrolled in a technical diploma program; 271 were enrolled in an apprenticeship program; and the remaining 14,648 students were enrolled in a non-program, career prep, or similar type coursework (Wisconsin Technical College System, 2014b). During the same timeframe, 1,086 degrees were awarded, including 482 Associates of Applied Science degrees, 568 technical diplomas, and 37 apprenticeship degrees (Wisconsin Technical College System, 2014b). After graduation, 56% of graduates from 2011–2012 were employed in the district, 20% were employed in Wisconsin but outside of the Moraine Park District, and 4% were employed out of state (Moraine Park Technical College, 2014b). Ninety-two percent of Moraine Park Technical College graduates found employment within six months of graduation (Moraine Park Technical College, 2014c).

"Moraine Part Technical College has been reaccredited through 2015 by the Higher Learning Commission through participation in the Academic Quality Improvement Program" (Moraine Park Technical College, 2014b). In addition to Higher Learning Commission accreditation at the institutional level, 11 programs have been individually accredited or approved, including Alcohol and Other Drug Abuse, Barber/Cosmetologist/Nail Technician, Barber/Cosmetologist Apprenticeship, Clinical Chiropractic Specialist, Health Information Technology, Medical Assistant, and Medical programs (Moraine Park Technical College, 2014c).

District Board and Presidents' Cabinet

Moraine Park Technical College is governed by a 9-member District Board representing all 10 state counties (Moraine Park Technical College, 2014a). The Board membership consists of two employers, two employees, one elected official, three additional members, and one school district administrator from a public school district (Moraine Park Technical College, 2014b).

The District Board follows a governance style of policy process development (Moraine Park Technical College, 2014b).

"The district president is responsible for local administration, including setting academic and grading standards, hiring instructional and other staff, and providing auxiliary services and budget management" (Wisconsin Technical College System, 2014c, p. 2). A cabinet of nine employees oversees day-to-day management of Moraine Park Technical College. The membership of this cabinet consists of the President, Vice President of Finance and Administrative Services, Vice President of Information Technology, Vice President of Human Resources, Vice President of Student Affairs, Vice President of Academic Affairs, Director of College Advancement, Executive Assistant to the President and District Board, and the Director of Marketing and Communication (Moraine Park Technical College, 2014b). Each management staff member of the Presidents' Cabinet has his or her own respective work teams (Moraine Park Technical College, 2014b). The online and curriculum team for Moraine Park Technical College reports to the Dean of the Beaver Dam Campus and is responsible to the Vice President of Academic Affairs. Academic advisors, counselors, and recruiters are part of the student affairs team (Moraine Park Technical College, 2014b).

Moraine Park Technical College Funding

The college has the ability to levy local property taxes within its district (Moraine Park Technical College, 2014c). Even though revenue is raised through local property tax, it does not comprise the majority of the institution's income. In 2012–2013, a local tax levy accounted for 48% of the college's revenue, followed by federal funds at 17%, tuition and fees at 13%, debt proceeds at 9%, contracts/other at 6%, state aid at 4%, and state grants at 3%. The total revenue for 2012–2013 was $74,582,000 (Moraine Park Technical College, 2013).

Moraine Park Technical College Online Course Offering

At the time of this writing, Moraine Park Technical College offered more than 50 Associates of Applied Science degrees and technical diploma programs (Moraine Park Technical College, 2014c). In addition, the college offered almost 60 certificates and apprenticeships in seven academic areas: business, technology, and digital arts; consumer and hospitality services; engineering; environmental sciences and trades; general studies; health sciences and human services; and manufacturing (Moraine Park Technical College, 2014d). Over 20 of these programs, certificates, or apprenticeships could be taken and completed online (Moraine Park Technical College, 2014c). In 2012–2013, Moraine Park Technical College offered over 300 online courses with over 4,000 online unduplicated students (Wisconsin Technical College System, 2014b). Flexible learning experiences, also called FLEx degrees, were available via accelerated on-campus coursework presented via a blend of face-to-face and self-paced online learning (Moraine Park Technical College, 2014b). Nontraditional students tend to be interested in pursuing FLEx degrees due to the diversity of course format offerings (Moraine Park Technical College, 2014b). The FLEx degrees at Moraine Park Technical College were designed to serve students who were unable to meet their educational goals via the traditional, on-campus, face-to-face course offerings (Moraine Park Technical College, 2014b). This did not mean that students did not have the opportunity to attend face-to-face, but if they did, it was most likely through an accelerated or blended course offering (Moraine Park Technical College, 2014b). The intent of the FLEx program was to offer higher education to students who had busy schedules and were attempting to balance their personal life, work life, and academic life (Moraine Park Technical College, 2014b).

Moraine Park Technical College Students

According to the 2012–2013 District Fact Sheet (Moraine Park Technical College, 2013), Moraine Park Technical College served 19,358 students. Of these students, 1,537 were incarcerated (Moraine Park Technical College, 2013). Eighty-five percent of all students attending were White (Moraine Park Technical College, 2013). Hispanic was the next highest ethnicity at 4.9% (Moraine Park Technical College, 2013). The largest age group served was 25 to 39 (29.4%) (Moraine Park Technical College, 2013). The second largest age range was 50 to 55 (21.1%; Moraine Park Technical College, 2013). More men (52.3%) attended Moraine Park Technical College than did women (47.7%; Moraine Park Technical College, 2013. Twenty-four percent of all students had not completed a 12th grade education (Moraine Park Technical College, 2013).

Technical College versus Community College

According to Fike and Fike (2008), community colleges often have higher numbers of older adults, students of color, underprepared students, and part-time students than do traditional four-year institutions. Community and technical colleges tend to offer an open enrollment policy, unlike most four-year higher education institutions. Colleges with open enrollment policies often experience a lower persistence rate than do four-year universities with closed enrollment policies (Fike & Fike, 2008). Open enrollment attracts students with varying degrees of skill and different abilities to succeed in higher education (Cohen, 2003). ACT (2008) reported that student persistence in freshman and sophomore semesters at public community colleges ranged from 51% to 53.7%, respectively. These same values compare to four-year public institutions that reported a national average of 65.7% persistence in 2008 (Act, 2008).

There are many similarities between the community college system and the technical college system, including the objective of attracting part-time students. However, there are also

notable differences. Community colleges usually offer a broader range of training geared toward transferring students to a four-year institution; technical colleges, in contrast, offer specific studies in occupationally specific degree programs (Rice, 2007). Students at technical colleges are training to perform industry tasks (Grayson & Media, 2014). According to the U.S. Department of Education, technical colleges offer hands-on experience related to careers of interest, while community colleges offer more transfer options (Grayson & Media, 2014). Depending on the institution, both community colleges and technical colleges may offer certificates, diplomas, and Associate's degrees.

Distance Education

Face-to-face education, sometimes referred to as traditional classroom delivery, is taught on-site at an educational campus, whereas distance education allows students to complete learning outside of the classroom using various print or electronic media and formats (Ghosh, 2011). Earlier forms of distance education such as self-study and correspondence education served as alternatives to traditional face-to-face courses (Allen & Seaman, 2011).

Distance education is a rapidly growing field in higher education (Lee & Choi, 2011). The distance education format has changed how teachers and students interact and even how students interact with each other (Dykman & Davis, 2008). As technology has evolved, so has the way an institution offers distance education. With technology, students and instructors now have the ability to access an online classroom virtually anytime from virtually any location (Dykman & Davis, 2008). Trow (2000) predicted that the future of education in higher education would consist of some combination of face-to-face and online learning, a prediction that seems to have come true. However, no matter what role technology plays in education for nontraditional students, educators should continue to find ways to help students persist.

History of Distance Education

Modern distance education can be traced back to the mid-19th century in Europe and the United States (CDLP, 2014b). Educators of this time were attempting to find a way to provide open education to individuals who were unable to attend via a traditional format (CDLP, 2014b). Educators took advantage of the postal system and used correspondence to move through a course (CDLP, 2014b). Isaac Pitman, a notable early pioneer of distant education, was an educator in Bath, England, during the 1840's and taught shorthand by having students copy sections of the Bible and return them for critique via the postal system (CDLP, 2014b).

A movement in American adult education, known as the Chautauqua movement, gained strength around 1882 (CDLP, 2014b). However, even as early as 1874, Bachelor and graduate level degrees were being conferred through distance education (CDLP, 2014b). The discussion of how adults learn successfully grew during the 1910s and early 1920s when adult education became a recognized part of the American formal educational system (Dame, 2012). This was a time when questions regarding the quality of distance education became a concern to some. Around 1915, the National University Extension Association accredited colleges and university distance programs, and the National Home Study Council was created in 1926 to establish guidelines and standards for distance education (Dame, 2012).

During the 1900s, educators started to utilize the telephone system as another modality for distance education (CDLP, 2014b). This was the time in history when long-distance telephone service became more reliable and accessible (CDLP, 2014b). However, it was not until the advent of teleconferencing in the 1980s that teachers were able to instruct large numbers of students at one time (Crawley, 2012). As technology advanced during the 1980s and 1990s, distance education often included telecourses and correspondence courses (Crawley, 2012).

When the "Internet could support text, graphics, audio, and video" (Crawley, 2012, p. 1), colleges started to use the Web to offer education.

Types of Distance Education

Allen and Seaman (2007) defined distance education as education that is taught off-site, often through a media source that may include the use of Internet. CDLP (2014a) mentioned two categories for delivering distance learning. The first category is synchronous delivery, which is education conducted in real time, where the instructor(s) and students participate in the education process through chats, Web conferencing, and interactive telecourses (Crawley, 2012). The second category is asynchronous delivery. In this format, the interaction between student and teacher is delayed—in other words, not immediate (Crawley, 2012). Students typically will not be working on their assignments simultaneously.

There are several forms of distance education; online education is just one. Earlier forms of distance education included alternatives to the traditional face-to-face course offering, such as self-study and correspondence. Even though Schlosser and Simonson (2006) claimed distance education is "a generic, all inclusive term used to refer to the physical separation of teachers and learners" (p. 65), CDLP (2014a) listed several popular types of distant learning: audiotape, videotape, radio course, telecourse, videoconference, e-mail, and Internet.

Online Education

According to Simonson, Smaldino, Albright, and Zvacek (2009), "Students prefer to learn in a classroom, but demand to be permitted to learn at a distance" (p. 6). Distance education, especially online education, is an attractive alternative for adult students who are looking for flexibility to balance the requirements of life outside of school. Globalization and open national borders have prompted the advent of learners who do not want to be place- and

time-bound (Dabbagh, 2007). Online courses allow students to engage in their preferred environment from almost anywhere and at almost any time (Dabbagh, 2007).

What is Online Education?

The online learning environment is considered flexible, economical, and more supportive of time constraints than is traditional learning (Bambara, 2007). The flexibility of online learning allows individuals to complete coursework when their schedules would not permit them to complete a face-to-face course (Appana, 2008). Table 4 shows a comparison of the differences in instructional delivery.

Table 4
Types of Instruction by Delivery

Method	Amount of Content Delivered Online	Description
Online	80+%	Most, if not all, of the content is delivered online. Face-to-face meetings typically will not occur.
Hybrid/ blended	30% to 79%	This is a blend of face-to-face and online. Substantial part of the course is delivered online, including discussions, and typically will involve some face-to-face meetings.
Web facilitated	1 to 29%	A course that uses Web-based technology to facilitate what is essentially a face-to-face course. May use the course management system to post a syllabus and assignments, etc.
Traditional	0%	A course with no online technology used. All content is delivered in writing or orally.

Note: Adapted from "Making the Grade: Online Education in the United States," by I. E. Allen and J. Seaman, 2006. Retrieved from http://www.onlinelearningsurvey.com/reports/making-the-grade.pdf

Characteristics of Online Students

Traditional Online Learners

Traditional learners are those between 18 and 24 years of age, who typically want residential campus experiences (Crawley, 2012). Traditional students are usually not full-time online students (Crawley, 2012). Traditional students may take several courses online, but most often will not be taking an entire program online (Crawley, 2012). Traditional students may be driven more by social integration outside of the classroom, compared to nontraditional students (Tinto, 2012). Often, traditional students will attend college after high school graduation, moving into a dorm or apartment on campus (Hermon & Davis, 2004). In addition to living on campus, a traditional college student is often financially dependent on parents and enrolled full-time (Pelletier, 2010). Traditional learners make up only about 16% of all students enrolled in two-year colleges and four-year universities (Falk & Blayclock, 2012).

Nontraditional Learners

Bean and Metzner (1985) noted that one of the most common variables in the study of nontraditional student retention is age: Nontraditional students are over the age of 24. However, this is not the only defining variable of nontraditional students. Other variables include family and work responsibilities that may interfere with student success (Stravredes, 2011). The factors that affect traditional students are not generally the same factors that affect nontraditional students (Calcagno, Crosta, Bailey, & Jenkins, 2006). Understanding nontraditional students' needs should be considered important to institutional leaders, because these students will likely require additional services that are different from those required by traditional students (Crawley, 2012).

Bean and Metzner (1985) recognized that age alone did not reflect what the academic community should consider nontraditional. "Traditional and nontraditional students cannot be easily classified into simple dichotomous categories" (Bean & Metzner, 1985, p. 488). An exact formula determining the difference between nontraditional and traditional students may be difficult to find; however, a formula may include variables such as age, residence, full- or part-time attendance, ethnicity, gender, and socioeconomic status (Bean & Metzner, 1985). According to Fike and Fike (2008), community colleges typically enroll a higher number of students who are over age 24, underprepared, racially diverse, part-time, low income, and first generation. Even though traditional students attend college for both social and academic reasons, nontraditional students typically enroll in school for vocational reasons (Tinto, 1975).

Higher dropout rates among students enrolled in distance courses have long been considered a problem and a concern for educators (Lee & Choi, 2011). Institutional administrators are recognizing that nontraditional students are likely to present with additional variables that can make the students' chances for success less likely compared to the chances of traditional students (Tinto, 2012). Further, nontraditional students attending courses via distance education modalities are likely to experience additional stressors that may make their success more difficult (Lee & Choi, 2011). It is not surprising that online students are more likely to drop a course because of financial constraints, pressures at work, or family concerns (Carr, 2000). A common thought is that technical difficulties, student isolation, social distances, and the lack of traditional structure often inherent in online courses may be contributing factors to low completion rates and high dropout rates (Jaggers, 2001).

Dependent Variable—Student Persistence

Student dropout rates continue to be one of the greatest challenges for higher education organizations (Clay, Rowland, & Packard, 2009). Farmer (2009) noted that 20% to 50% of all online students drop out of school, and for the majority of those that do, dropout occurs in the first year or two of their higher education career (Barefoot, 2004). Prospective students and potential college staff may perceive higher dropout rates as a reflection of a low quality course or program (Lee & Choi, 2011). Whether the cause of student dropout is due to low course quality or the result of student-related factors, college leaders must realize that when a student drops out of online education, he or she will likely experience lower self-confidence and will most likely not re-enroll (Poellhuber et al., 2008).

With the diversity of characteristics and needs that make up the population of online students, it is even more critical to understand online students and develop approaches that facilitate their ability to persist (Stravredes, 2011). "Persistence rates help an institution understand factors that affect learners' ability to persist" (Stravredes, 2011, p. 22). As reported in a study published in 2014 regarding e-learning at community colleges, the greatest challenge for administrators was making sure there was an adequate amount of student services for distance learners (Lokken & Mullins, 2014). Student dropout rates for online courses have been reported at over 50% (York, 2003).

According to Simpson (2003), the most critical dropout time occurs between the student's decision to enroll in college and shortly after the start of the course. During this time, the student learns that if he or she is unable to keep up with the assignments because of personal issues, he or she may decide that attending school right now is not the best option and drop out (Stravredes, 2011). Park and Choi (2009) suggested higher education institutions should look at ways to provide support structures to online students whose family support is low.

Students who drop out or who will not re-enroll the following semester are classified as students who do not persist (Tinto, 1993). A student who drops out of school is categorized differently than a student who decides to transfer or "stop out." Bonham and Luckie (1993) reported that a student who drops out of school will not return to achieve his or her original goal; however, a transfer student will attend school at a different institution, and a student who "stops out" may do so multiple times. Student persistence "originates with the student and is a constructive way of assessing educational decisions" (Ghoston, 2012, p 31).

Carr (2000) suggested that students withdraw from online education for a variety of reasons. These reasons include the structure of the course, the characteristics of the student, and the impact of the education on the student's environment outside of the institution (Carr, 2000). What causes one student to drop out may be the same reason another student decides to continue. Tinto (2012) inferred that a primary reason for student persistence is what the student expects of himself or herself. If this inference is correct, then if a student is motivated to succeed and experiences success, the student will find a way to persist.

Higher education institution administrators may believe that factors affecting student dropout rates are traditionally outside the control of the organization. Morgan and Tam (1999) sought to determine the factors that cause a student to drop out or withdraw from coursework. Through a study of self-reported data, Morgan and Tam (1999) concluded that there are four barriers to student success: (a) poor family support (situational), (b) student study problems (dispositional), (c) late academic materials (institutional), and (d) course content (epistemological). These factors should not be overlooked by the organization—systems should be put into place to address students' concerns (Stravredes, 2001).

Employment during college can have a positive effect on satisfaction and help a student cover basic essentials while relieving a financial burden (Callender, 2008). Nontraditional

students often have work factors that affect success. According to Bean and Metzner (1985), there is a relationship between the number of hours a student works per week and persistence in higher education. The International Journal of Business Administration reported in 2014 that a students' GPA was found to decrease after working 11 hours a week (Tessema, Ready, & Astani, 2014).

Horn and Premo (1995) found seven risk factors that increased the risk of a student's nonpersistence: (a) students who decide to delay college attendance after graduation from high school; (b) students who attend college on a part-time basis; (c) students who are financially independent; (d) students who have children; (e) students who are working full-time when attending college; and (f) students who were high school dropouts and completed secondary education with a GED. Workman and Stenard (1996) identified five needs typical of online students that had an impact on student persistence:

- consistency and clarity of the institution's online programs, polices, and procedures;
- a learner's self-esteem;
- the students' ability to identify with the institution;
- the need to develop interpersonal relationships with peers, faculty, and staff; and
- the students' ability to access academic support services.

According to Bean and Metzner (1985), a student's intent to persist is closely related to the student's motivation and intention to attend higher education and achieve his or her original goal. Students will drop out because of loss of willpower and events beyond the institution's control. Visser (1998) referred to motivation as the key to student persistence. Bean (1983) suggested that intent to persist is an important variable to predict dropout. Additionally, Bean (1985) claimed that intent to leave was the strongest predictor of persistence. Bean and

Metzner's (1987) model showed that psychological outcomes were a positive predictor of intent to persist and that intent to persist was the best predictor of dropout rate. Anderson (2003) suggested that institutions should strive for ways to increase students' motivation to learn in order to increase their ability to persist in the face of adversity.

Academic learning skills may not be as important as self-efficacy and stress management skills in student persistence (Zawacki-Richter, Bäcker, & Vogt, 2009). These authors pointed out that students who display higher levels of self-efficacy and stress management skills tended to have an increased likelihood of persisting over students who received just academic skill training. This finding may support Dweck's (1999) view that student success is possible through the student's ability to be resilient and persistent in overcoming educational setbacks.

Independent Variables

In this study, the independent variables that were researched can be found in literature (Bean & Metzner, 1985; Metzner, 1983; Metzner & Bean 1987) and documented in the nontraditional student attrition model (Bean & Metzner, 1985). Bean and Metzner's (1985) research investigated factors that may affect retention of nontraditional students at community colleges by studying variations of academic background and by defining environmental and psychological variables. Not all variables researched and published by Bean and Metzner (Bean & Metzner, 1985; Metzner, 1983; Metzner & Bean, 1987) were included in this study. Specific independent variables for this study were (a) academic advising (b) education usefulness, (c) student satisfaction, (d) goal commitment, (e) academic stress, (f) outside encouragement from parents/spouse, employer, and friends, (g) financial certainty, and (h) GPA. The variables discussed in the following sections were categorized as internal or external, in accordance with the idea that there are "factors, both external and internal to the institution that can affect the ability of a learner to persist" (Stravredes, 2011, p. 28).

Academic Advising

This variable measures college students' usage and evaluations of academic advising services (Stahl & Pavel, 1992). In Bean's (1983) study, "Academic advising was significantly related to intent to leave only for the part-time students" (p. 275). According to Stahl and Pavel (1992), "Commuter dropout students have expressed dissatisfaction with academic advisement or indicated improved advisement services might have kept them in college" (p. 7).

According to Simpson (2013), several activities can assist advisors in improving student persistence, grouped into three general categories: informing, commending, and exploring. Informing is the process of providing students accurate information in a timely fashion. Commending is the process of laying out options available for the student, but being able to suggest which one of those options is the most appropriate (Simpson, 2013). The third potential advisor activity is exploring, the process of helping students to clarify the options that are open to them (Simpson, 2013).

As mentioned, online students may have lower retention rates compared to the rates of face-to-face students because of technical difficulties, isolation, social distance, and lack of structure (Jaggers, 2011). Advisors might be able to address these factors and thus play an integral part in persistence early-alert systems. Crawley (2012) drew attention to the importance of a student early-alert system. During 2005–2008, students who had direct contact with an advisor were more likely to persist (46%) and earned a GPA 0.26 points higher than the students who had only indirect contact with an advisor (Crawley, 2012).

Advisors can focus on certain factors that are not outside the educational organization's control, such as presenting study skills in student orientations (Nash, 2005). New student orientation can provide critical information to help a student succeed. In fact, 46% of students

who withdrew from an online course stated that they would have benefited from a formal online orientation, compared to 25% who stated they would not have benefited (Nash, 2005).

Online students who are at risk of dropping out might find it difficult to use on-campus support services due to time and distance restraints, especially in institutions where support services are only open during "typical" business hours during the day, rather than during evenings and weekends (Jaggers, 2011). Crawley (2012) suggested that education organizations could incorporate support services into course materials to help students take advantage of such assistance. In addition, Rice (2007) suggested that advisors could help students prepare their own individual academic plans. These plans help students to "chart course sequencing and make personal and financial plans to meet a specific educational target" (Rice, 2007, p. 107). Rice (2007) expressed the importance of holding a student–advisor meeting to discuss the progress of the plan. This meeting would provide a venue for the advisor to congratulate the student on his or her success, as well as to make plan adjustments that are needed because of institutional or student changes" (p. 107).

Education Usefulness

There are many challenges that nontraditional students must overcome to reach their educational goals. These challenges include finding time to study, overcoming challenges at work or at home, or even finding enough money to pay for college (Metzner & Bean, 1987; Stavredes, 2011). Nontraditional students who have perceptions that their education will positively affect their career development will be more likely to value their education and persist in their programs (Bean & Metzner, 1985). Nontraditional students are looking for a value-acquired system—that is, they seek the beneficial results of achieving their educational goals rather than focusing on the stress of overcoming potential barriers (Stavredes, 2011).

In Metzner and Bean's (1987) conceptual model of nontraditional undergraduate student attrition, the variable of utility was shown to have the "greatest effect on intent to leave and reflects students' interest in practical outcomes of their education at the university such as better employment opportunities and job-related skills" (p. 27). Metzner and Bean (1987) suggested that utility is "related to student's clarity of goals and level of educational aspiration, facilitation of these goals within the education environment, and encouragement and motivation to achieve these goals" (p. 27). If students see the rewards of attending college and achieving their education, they are more likely to succeed (Metzner & Bean, 1987).

Student Satisfaction

Online program students expect the pedagogy to match their learning styles, requiring the college to consider course structure and support of adult learners (Stavredes, 2011). "Students who were more satisfied with their role as a student were less likely to intend to leave the university" (Metzner & Bean, 1987, p. 27). By providing the chance for students to apply new skills in real situations, students can feel that the skills and knowledge obtained are useful, and thus they will be motivated to persist (Park & Choi, 2009).

Levy (2007) showed a positive correlation between an online student's persistence and the student's satisfaction with courses and faculty. In addition, part-time students mentioned dissatisfaction with intellectual stimulation was a reason to drop out (Haas, 1974). However, in Metzner and Bean's study (1987), students who were enrolled in more credits showed less satisfaction "perhaps due to more stress from greater time and energy requirements for school" (Metzner & Bean, 1987, p. 28). "Satisfaction was important in reducing the intent to leave, but satisfaction had only a slight effect on reducing dropout" (Metzner & Bean, 1987, p. 32).

According to Park & Choi (2009), student dropouts "had significant differences in perceptions of learner satisfaction and relevance from persistence learners" (p. 215). The longer

an online student stayed actively working toward his or her goals, the more satisfied he or she tended to be. Ivankova and Stick (2007) reported satisfaction rates at 92.3% in students who reached graduation, 71.8% in students who matriculated, 57.7% in beginning students, and 20% for students who were inactive.

Goal Commitment

Students who enroll in higher education have different end goals. Whatever the final educational goal, it is the level of commitment to that goal that assists students in succeeding (Metzner & Bean, 1987). Müller (2008) wrote that persistent students are more likely to view their own formal education as an important element of progress toward their goal attainment, thus motivating them to value the career and financial outcomes that come from completion of their formal education.

The students' level of commitment can affect student persistence positively or negatively (Metzner & Bean, 1987). Osborn (2001) studied student persistence and found that a student's motivation had a significant impact on persistence. In addition, Castles (2004) found that online student motivation was a key indicator for a student to drop out or to stay in school. According to Bean and Metzner (1985), "Students' educational goals at the time of matriculation include the highest level of college education sought, the amount of importance ascribed to obtaining a college education, and the likelihood of completing an educational goal at the present institution" (p. 495).

Academic Stress

Higher education students experience different levels of stress and from different stress sources. Stress has been shown to have an impact on a nontraditional student's likelihood of dropping out of school (Metzner & Bean, 1987). The student's emotional response to overcoming stress is important. Stavredes (2001) believed that "emotional response to learning

can have a huge impact. Positive emotions can cause more attention to be focused on the learning goal" (p. 50). Further, Stavredes (2011) mentioned that if students should "begin their academic work and find that they are not able to keep up with the workload due to personal issues, they may decide that this is not the right time for them to pursue their education and drop out" (p. 29).

The type and location of stress that a traditional student experiences is different from the stress characteristics experienced by a nontraditional student (Bean & Metzner, 1985). The level of stress for nontraditional students can come "from the time and energy requirements of attending college," specifically referring to the amount of credit hours, or from "being employed for more hours per week, studying more, and being unable to enroll in desired courses" (Metzner & Bean, 1987, p. 28). Nontraditional students are often commuters, taking coursework part-time. "Commuter students experience stress from external environment as well as from college requirements and often talk of the many demands on their time by family, employment, and coursework" (Stahl & Pavel, 1992, p. 9). Commuter stress of nontraditional students attending community college can be related to conflicts at home, conflicts with friends, illness, employment concerns, and financial concerns (Ghoston, 2012).

Encouragement

According to Rice (2007), "encouragement plays an important role in the persistence of nontraditional students" (p. 36). Adult students are more likely to drop out of online courses when they have a low level of support from their families or workplace (Park & Choi, 2009). Metzner and Bean (1987) showed outside encouragement had a "small but significant negative effect on intent to leave" (p. 26). In this context, outside encouragement refers to the support of close friends and other influential individuals who encourage the student to continue his or her studies.

Bean and Metzner (1985) suggested, "It is outside encouragement that replaces normative support in the model of Spady (1970) and Tinto (1975)" (p. 505). For many nontraditional students, "External encouragement is more important for nontraditional students because of their reference group of peers, friends, family, and employers" (p. 506). Persistent students tend to have more supportive partners and healthier relationships, compared to nonpersistent students (Kemp, 2002).

Financial Certainty

"With the skyrocketing cost of higher education, a faltering economy, and a high unemployment rate, many students who want to continue their education beyond high school are facing greater challenges than ever before" (Crawley, 2012, p. 93). A major challenge is finding funds to pay for education at a time when "a certificate or degree is even more important for entry into an increasing number of careers" (Crawley, 2012, p. 93). Even with 75% of college students working while attending school (Chaloux, 2010), concern for financial security is always present. The real-life challenge of paying for the education and facing the potential of debt is a difficult decision a student must make (Yorke & Longden, 2004).

According to Simpson (2003), the fees for attending online education, as well as the impact of fees on dropout rates, are seldom mentioned in literature. "It would seem that course fees act as a disincentive to enroll but once they are paid, it is difficult to find any evidence of their role in retention" (Simpson, 2003, p. 32). The negative effects of financial concern can outweigh any benefit the student might gain from the educational experience (Braxton & Mundy, 2001, 2002). The cost of education remains a major concern. Simpson (2003) said, "There may be a case for experimenting on the relationship between fees and retention" (p. 32).

GPA

Davis (2003) noted a significant relationship between student persistence into the next academic year and the student's cumulative grade point average (GPA). French, Immekus, and Oaks (2003) found a relationship between GPA and students' interaction with ongoing enrollment. Tinto (1975) stated, "With respect to grade performance, many studies have shown it to be the single most important factor in predicting persistence in college" (p. 104).

In a study of student retention at a private university, Pota-Merida (2009) found a correlation between student retention and GPA. The study showed that academic incompatibility was related to GPA and student dropout rate. According to Kember (1995), academic integration involves the contact between the school and a student, which can be academic, administrative, or even social. In a study at a community college, Lint (2011) found that academic incompatibility was also a predictor of student persistence.

In Metzner and Bean's (1987) model of nontraditional undergraduate student attrition, two compensatory effects were found relating to GPA. The first effect showed that a nontraditional student affected by environmental variables could still persist even with a low GPA (Metzner & Bean, 1987). The second compensatory effect indicated that psychological outcomes could compensate for a lower GPA when a student perceived a high level of utility, goal commitment, or satisfaction (Metzner & Bean, 1987, Bean & Metzner, 1985). Bean and Metzner (1985) suggested that academic variables may have a direct effect on GPA, which may increase the student's decision to persist. In addition, the student's external environment can cause a decrease in his or her interaction with other students and instructors, which may lead to a decrease in persistence. Metzner and Bean (1987) suggested that both environmental and academic variables affect psychological outcomes. "None of the environmental or social integration variables was significantly related to GPA" (Metzner & Bean, 1987, p. 27). Instead,

Bean and Metzner (1987) claimed, "Academic performance seems to be a function of academic preparation and motivational factors such as desired level of education and class attendance" (p. 27).

Models of Student Persistence

Longitudinal Model of Individual Departure

According to Stavredes (2011), Tinto's longitudinal model of individual departure "has been the most widely discussed model" relating to student attrition in higher education (p. 23; see Figure 1). Tinto's model attributed a student's decision to continue education or to drop out to several factors, including pre-entry attributes, the student's goals and commitments, and the integration of academic and social institutional experiences (Tinto, 1993). Tinto attempted to show that the goal commitment of the student leads to higher grades and further intellectual development, which should lead to decreased student dropout rates. In this model, Tinto proposed that institutional commitment increases interaction with other students and faculty, leading to a decrease in the number of student dropouts. Tinto's model was based on traditional undergraduate students at a four-year college and a university, utilizing face-to-face courses.

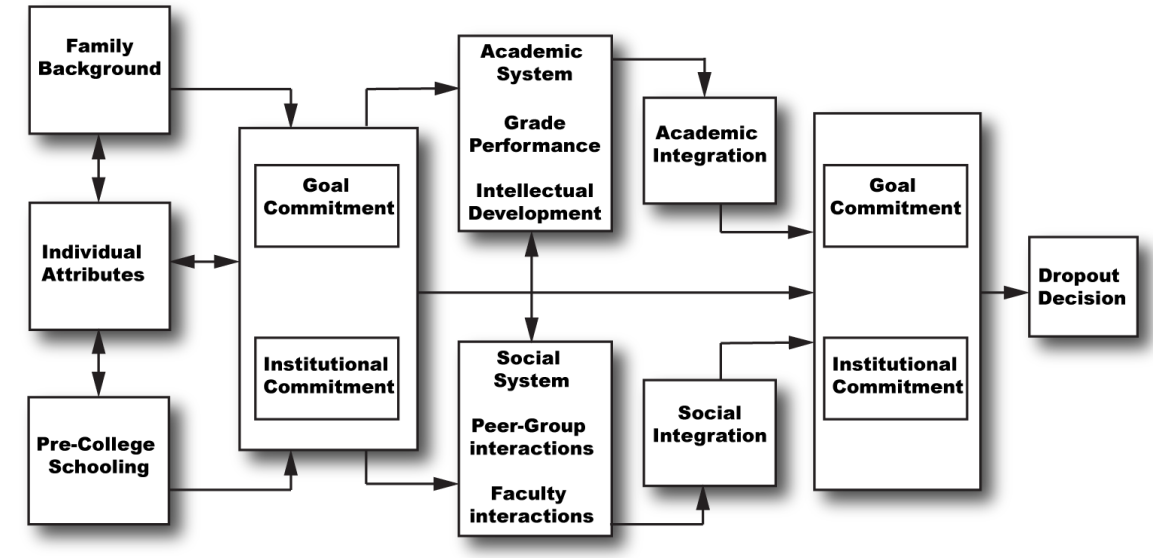

Figure 1. Longitudinal model of individual departure

Note: Adapted from "Dropout from higher education: A theoretical synthesis of recent research," by V. Tinto, 1975. *Review of Educational Research, 45*(1), 89-125.

Tinto (1993) believed that institutions play a major role in bringing students into higher education by creating experiences where students can integrate into the college environment through academic and social systems and by assisting the student to develop a positive and realistic expectation—both actions should lead to persistence. Tinto attempted to show that "a strong student commitment to their goals along with a positive experience at the institution leads to greater academic integration within the institution" (Stavredes, 2011, p. 24).

Later Tinto (2000) expanded an earlier model to posit a relationship between learning and persistence. In this expanded model, Tinto (2000) mentioned that "classrooms" can be thought of as a community within the broader institution. Tinto suggested the interactions that occur between other student peers and faculty within a classroom can lead to academic and social integration discussed in his earlier model (Tinto, 2000).

Conceptual Model of Nontraditional Student Attrition

A literature review regarding student retention showed multiple models have been developed, each displaying unique explanations of student retention. The theory developed by Bean and Metzner's (1985) conceptual model of nontraditional student attrition differed from more traditional student retention models—the authors placed less emphasis on a student's socialization into the college/campus environment. In this model, the researchers noted other factors that can compensate for lower levels of social integration for nontraditional students in the effort to retain students (Bean & Metzner, 1985). Bean and Metzner's (1985) conceptual model of nontraditional student attrition was chosen to provide the conceptual framework for this study (see Figure 2).

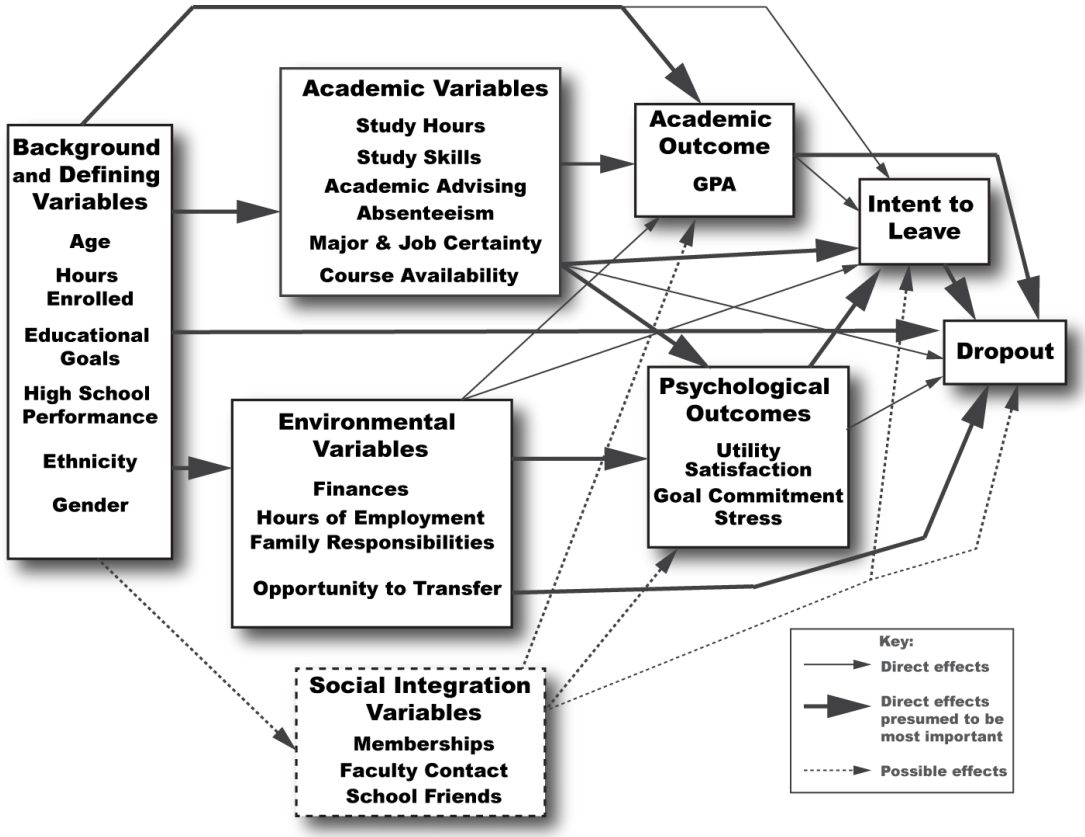

Figure 2. Conceptual model of nontraditional student attrition

Adapted from "The estimation of a conceptual model of nontraditional undergraduate student attrition," by B. S. Metzner and J. P. Bean, 1987. *Research in Higher Education*, *27*(1), 15-38.

Even though their model grew out of Tinto's (1975) longitudinal model of individual departure model, Bean and Metzner "argued that nontraditional students are not influenced by the social environment of the institution and are mainly concerned with academic offerings of the institution" (Stavredes, 2011, p. 25). In contrast, Tinto (1975) suggested that students are more likely to drop out if they are unable to integrate socially into the college's community. Bean and Metzner (1985) believed older students typically have a different support structure than do their younger peers. These students focus on support from outside the academic environment, often looking to family, friends, and peers (Stavredes, 2011). Bean and Metzner's (1985) model

considered age as one of the most common variables in nontraditional attrition. Their model involved nontraditional students older than age 24, commuters, part-time students, and students who possessed a combination of these attributes. Bean and Metzner (1985) noted that nontraditional students, especially those of nontraditional age, were more likely to look toward academic goals, rather than toward social offerings and environment for student persistence. The following are variables in Bean and Metzner's (1985) persistence model:

1. Academic variables, such as student study habits and the availability of courses
2. Background and defining variables: student age, race or ethnicity, educational goals, previous GPA
3. Environmental variables, such as student employment and hours worked, family responsibilities, support/encouragement outside the institution, and personal finances
4. Psychological variables, including stress, self-confidence, and motivation

Bean and Metzner (1985) found a relationship between environment and academic performance, as well as between psychological variables and academic performance. Positive environmental variables such as encouragement from family and peers may be enough for nontraditional students to compensate for low academic performance (Metzner & Bean, 1987). Negative environmental variables such as low support from peers or employment concerns often lead to college attrition (Metzner & Bean, 1987). The other interaction occurred between academic performance and psychological outcomes. This interaction implied that a student with a strong commitment to attaining his or her education often persists, even with low academic performance (Metzner & Bean, 1987). Bean and Metzner also found high academic performance did not compensate for a low psychological outcome and actually created a greater likelihood of student dropout.

The Model

Boyles (2000) developed a model to accommodate e-learning, called simply *the model* (see Figure 3). Boyles's model was based on the model developed by Metzner and Bean (1987), with a few additional variables. Boyles presented three sets of variables: background and defining, environmental, and academic. In addition to the three categories of variables, the model also contained seven singular variables: academic self-confidence, academic integration, academic outcome, institutional size social integration, psychological outcomes, and utility (Berge & Huang, 2004).

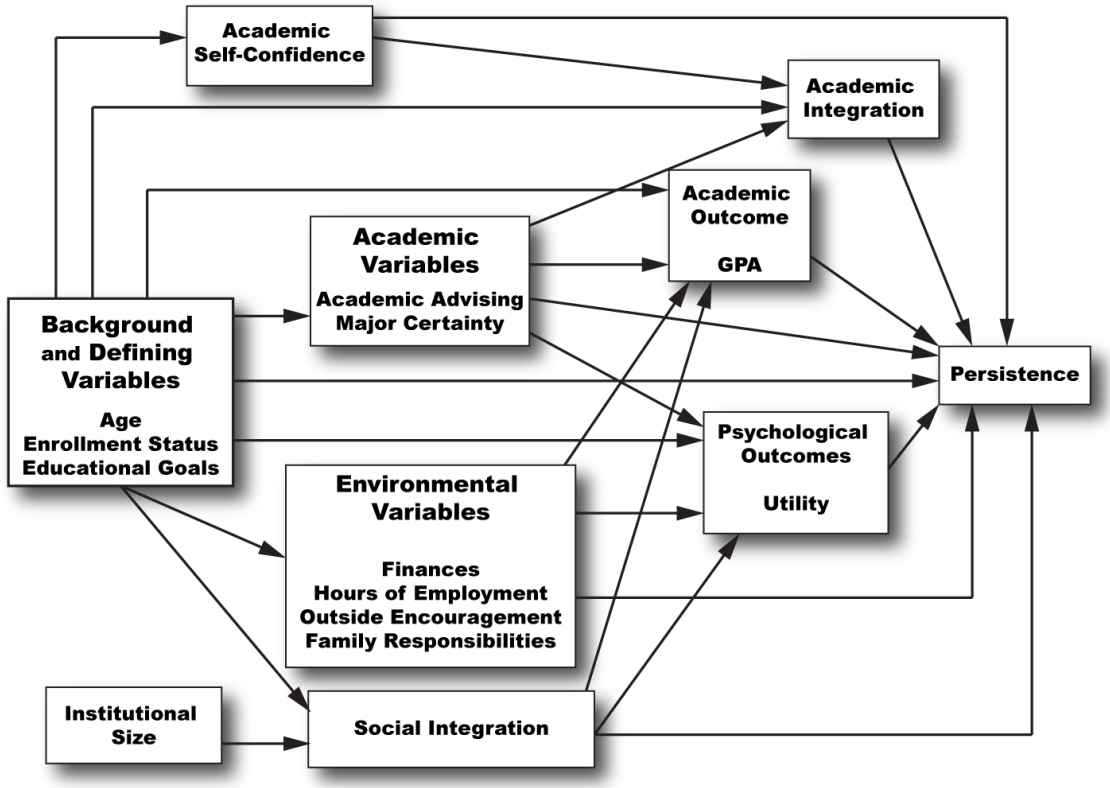

Figure 3. The Model.

Note: Adapted from "Exploration of a retention model for community college student" (Doctoral dissertation), by L. W. Boyles, 2000. The University of North Carolina at Greensboro. University Microfilms No. 99-72048.

Student Progress in Distance Education

Kember (1995) created a model to attempt to explain student persistence in online education courses. Kember's (1995) model of student progression indicated that a student chooses one of two paths. The first path is one of social integration to academic integration, and the second path is external attribution to academic incompatibility. Both paths lead to the outcome of learning, represented by the determination of their GPA. For the student to continue, the individual will weigh the cost of continuing against his or her GPA. Based on that evaluation, a student will decide to continue with his or her education or drop out.

This model was also based on Tinto's student integration model (Lee & Choi, 2011). As mentioned, Tinto (1995) suggested that a student was more likely to drop out when he or she was unable to establish a relationship within the college community or possessed different views, values, or intellectual norms than did the institution.

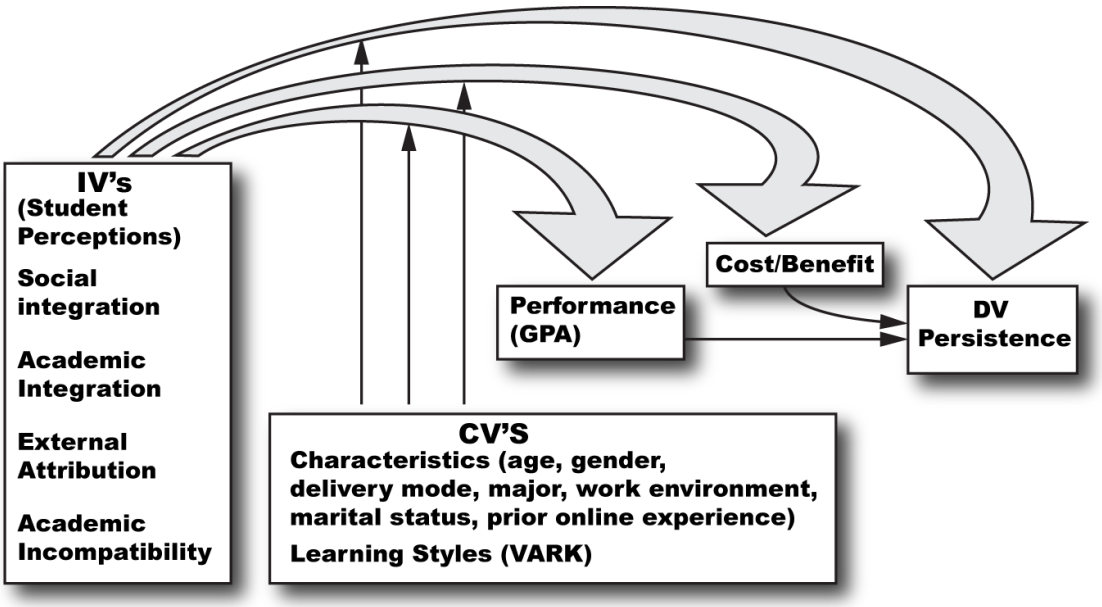

Figure 4. Kember's model of student progress in distance education.

Note: Adapted from "Open learning courses for adults: A model of student progress" by D. Kember, 1995. Englewood Cliffs, NJ: Educational Technology Publications.

Kember (1995) suggested three negative social integration components: insufficient time, unexpected events, and distractions. Kember believed students who were not able to achieve social integration were more likely to attribute personal integration failure to factors that were external and beyond his or her control.

Summary

Even though institutional administrators likely realize that "no retention strategy is likely to fit all students and all circumstances at all times" (Simpson, 2003, p. 23), they no doubt understand that nontraditional students are less likely to reach academic goals than are traditional students (Bean & Metzner, 1985). If administrators knew which students would be most likely to drop out, institutional strategies could be developed to provide support. The same case would be true if administrators knew why students drop out of online classes. The answers to these questions could refine practices to affect dropout rates. However, Woodley (1987) mentioned the reasons why a student drops out are multicausal and require multiple partial solutions. Because of the diversity of characteristics and needs of online students, it is important to investigate their needs and develop approaches that can support them in their efforts to persist (Stravredes, 2001).

Tinto (1993) contended that it is important for students to become involved and engaged in other areas of college life, such as campus organizations, activities, and athletic events. These socialization integration activities have led to traditional student retention. Bean and Metzner (1985) contended that socialization integration was not as important as other factors for nontraditional students. However, later Tinto (2000) expanded his earlier model to include a relationship between learning and persistence. Subsequently, Tinto (2000) claimed that "classrooms" are communities within the broader institution. Tinto (2000) suggested the

interactions that occurred between other students and faculty within a classroom could lead to academic and social integrations discussed in his earlier model.

Research regarding student retention has traditionally concentrated on the analyses of student attrition behaviors, persistence patterns, graduation rates, and psychological and social dynamics (IRP, 2003). However, other internal and external variables of the institution can affect student success. As nonempirical literature and presentations on online education for two-year colleges flourish (Hart, 2012), empirical research must also address factors that commonly cause a nontraditional student to drop out. "An early identification of the student who may not succeed in an online course can allow application of evidence-based interventions by the educator to strengthen student persistence" (Hart, 2012, p. 38). This research was needed to provide evidence to either support or discredit the beliefs of higher education practitioners involved in online education. Based on the literature review, it is clear that a better understanding is needed of how academic, background, environmental, and psychological variables affect nontraditional students' persistence in attending online higher education.

CHAPTER THREE: METHODOLOGY

Introduction

This study used Bean and Metzner's (1985) conceptual model of nontraditional student attrition to investigate student persistence with nontraditional students who were attending undergraduate online studies at a technical college in Wisconsin. The researcher chose a quantitative approach to research factors that can cause an online student to persist. The context and focus of this study comprised students enrolled in programs that offered a flexible learning experience (FLEx programs) at a technical college in Wisconsin. This chapter provides the research design, the independent and dependent variables, the research procedures, and the instrument used for the study.

Review of the Research Questions

Research Question 1: Can online program students' intent to persist be predicted from a combination of 1) GPA and the self-perceptions of, 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Research Question 2: What differences, if any, exist between online program students' intent to persist and face-to-face students' intent to persist from a combination of 1) GPA and the self-perceptions of, 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement

from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Research Design

In a research project, "The knowledge that is produced through research is a function of the questions the researcher asks and the methods the researcher used to answer those questions" (Merriam, 1991, p. 43). The framework used for this study was postpositivism, which is concentrated on quantitative methods. This type of method is able to produce data that are considered to be objective, implying "that the behaviors are easily classified or quantified, either by the participants themselves or by the researcher" (Gliner, Morgan, & Leech, 2009, p. 8). Postpositivism "is an 'orientation,' not a unified 'school of thought,' for there are many issues on which postpositivists disagree" (Phillips & Burbules, 2000, p. 25-26). However, postpositivists are "united in believing that human knowledge is not based on unchallengeable, rock-solid foundations—it is conjectural" (p. 26) and thus "always subject to reconsideration" (p. 30).

Postpositivism "is a nonfoundationalist approach to human knowledge that rejects the view that knowledge is erected on absolutely secure foundations—for there are no such things; postpositivist[s] accept fallibilism as an unavoidable fact of life" (Phillips & Burbules, 2000, p. 29). Fallibilists accept that even the "best methods for securing knowledge are apt occasionally to fail" (p. 29). Postpositivists account for knowledge by testing for "assertion for ourselves or examine with a critical eye the test that have already been carried out" (Phillips & Burbules, 2000, p. 30). In this framework, the researcher looks for evidence that points toward the results, and eventually a decision is made on the claims, "but with the realization that at some later date we might come across pertinent evidence or criticism that forces us to change our mind" (Phillips & Burbules, 2000, p. 29).

This research study used a quantitative nonexperimental approach to the collection and analyses of the data. This method allowed the researcher to study the relationships between the dependent variable and the independent variables. In this type of research, the researcher does not manipulate the independent variables (Gliner et al., 2009). There is a limit to what can be said about causation in a nonexperimental study. However, these studies are still able to lead to a "solid conclusion about the differences between groups and about associations between variables. Furthermore, if the focus of your research is on attribute independent variables, a non-experimental study is the only available approach" (Morgan, Leech, Gloeckner, & Barret, 2010, p. 3). The research questions were based on Bean and Metzner's (1985) nontraditional student attrition model.

This study used two separated statistical analyses to answer the research questions. For the first research question (the association question), the researcher used associational analysis. "The statistics in this group examine the association or correlation between two or more variables" (Gliner et al., 2009, p. 275). The second research question (the difference question) used difference analysis. According to Gliner et al. (2009), "Difference statistics and questions are used to compare a few groups…in terms of each group's average scores on the dependent variable" (p. 275).

Population and Sampling

The study population comprised students who were enrolled in undergraduate FLEx program offered through Moraine Park Technical College (MPTC) during the spring term of the 2012–2013 academic year. MPTC's Institutional Research Department e-mailed students a link to the Survey Monkey survey instrument via the official MPTC student e-mail account system. Data were collected over three weeks from students enrolled in FLEx degree programs who either took their courses via a face-to-face format or through online delivery. A total of 693

students were invited to participate. Of those invited, 114 completed the online survey. Forty respondents, or 35%, identified as students who were primarily taking coursework via a traditional or face-to-face offering. The other 74 students, or 64% of respondents, identified as online students.

Participation in this research project was voluntary. The voluntary aspect of the research was clearly stated in the survey cover letter, which was sent to participants' MPTC student e-mail accounts. This research project did not present a risk, psychological or otherwise, for any of the participants, nor did they experience any physical harm. The Institutional Research Department coded each participant before retrieving students' GPA scores. The Institutional Research Department did not share specific student identification information with the researcher.

Nontraditional Student Attrition Model Overview

Bean and Metzner's (1985) model included an examination of the intent of a student to leave college or to drop out. Four sets of variables were presented in the nontraditional student attrition model to measure why a student may choose to persist (Bean & Metzner, 1985). The first set of variables focused on the idea that students with low academic performance would likely drop out at higher rates than would those with higher academic performance. The second set of factors that affected persistence was primarily influenced by psychological outcomes but most likely included academic variables. The third set of variables that was predicted to affect persistence was the group of background and defining variables. Lastly, Bean and Metzner (1985) believed that environmental variables would have a "substantial" (p. 490) direct effect on dropout decisions.

The nontraditional student attrition model (Bean & Metzner, 1985) is a path model in which the "indirect effects of a variable on dropout can be calculated, and the statistical

significance of these effects can be tested" (p. 490). Bean and Metzner (1985) described an example:

> Although high school grades may not have a significant direct effect on dropout, high school grades would be expected to have significant direct effect on college grades, and college grades, in turn, would be expected to have a significant direct effect on dropout. Thus, high school grades could have a significant indirect effect on dropout. (p.490)

In this model, Bean and Metzner (1985) identified indirect effects to understand in more detail the interrelationships between the variables. Subsequently, the authors calculated both the direct and indirect for each of the independent variables with the intention of finding those variables having the greatest impact on the dependent variable. Intent to leave was the most influential variable in determining if a nontraditional student would leave college (Bean & Metzner, 1985, Metzner & Bean, 1987). However, in this research study, the term *intent to persist* was used in place of *intent to leave*. "Using the term intent to persist rather than intent to leave make the results of this study more readable and clearer in it meaning" (Rice, 2007 p. 47).

In a study of student persistence in a Wisconsin Technical College, Rice (2007) suggested that future studies be designed around significant sets of variables "rather than casting a wide ranging net in order to find variables that positively affect intent to persist" (p. 117). For this study, the researcher studied a total of eight independent variables. Table 5 shows the list of the dependent variables and independent variables, survey questions, and response scales.

Table 5

Research Variables, Questions, and Scales

Dependent Variable	Survey Question	Level
Intent to persist	Do you expect to be enrolled in courses at MPTC next semester?	Definitely no – 1 Very slight chance – 2 Uncertain, probably not –3 Uncertain probably yes – 4 Quite a good chance – 5 Definitely yes – 6
Independent Variable	**Survey Question**	**Level**
Academic advising (concern)	To what extent has your academic advisor shown concern for you as an individual?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Academic advising (appointment)	To what extent has it been difficult for you to get an academic advising appointment?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Education usefulness	How useful do you think your education at MPTC will be for getting future employment?	Little or no use – 1 Some use – 2 Quite a bit of use – 3 A great deal of use – 4 A very great deal of use – 5
Education usefulness	How useful do you think your education at MPTC will be for getting work you would really like?	Little or no use – 1 Some use – 2 Quite a bit of use – 3 A great deal of use – 4 A very great deal of use – 5
Education usefulness	How useful do you think your education at MPTC will be for getting a well-paying job?	Little or no use – 1 Some use – 2 Quite a bit of use – 3 A great deal of use – 4 A very great deal of use – 5
Student satisfaction	I find real enjoyment in being a student.	Strongly disagree –1 Disagree – 2 Neither agree nor disagree – 3 Agree – 4 Strongly agree – 5

Goal commitment	How important is it for you to attend college?	Extremely unimportant – 1 Very unimportant – 2 Neither unimportant nor important –3 Very important – 4 Extremely important – 5
Goal commitment	How important is it for you to complete a college degree?	Extremely unimportant – 1 Very unimportant – 2 Neither unimportant nor important –3 Very important – 4 Extremely important – 5
Academic stress	To what extent do you feel stress from the amount of time required for school?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Outside encouragement (parents/spouse)	To what extent do your parents or spouse encourage you to continue your studies at MPTC?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Outside encouragement (employer)	To what extent does your employer encourage you to continue your studies at MPTC?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Outside encouragement (friends)	To what extent do your close friends encourage you to continue your studies at MPTC?	Not at all – 1 To a small extent – 2 To some extent – 3 To a great extent – 4 To a very great extent – 5
Financial certainty	How certain are you that you can find the money to go to school next semester?	Very uncertain – 1 Fairly uncertain -2 Neither certain nor uncertain -3 Fairly certain – 4 Very certain - 5
GPA	N/A	N/A

In this study, a higher intent-to-persist score indicated a student would be more likely to remain enrolled the following term. Intent to persist "will be used to describe the degree to

which degree-seeking students' intent to continue school" (Rice, 2007 p. 47). Intent to persist is one of the most significant variables affecting a students' action to drop out of school (Bean, 1982; Metzner & Bean, 1987).

Data Collection Procedures

Potential participants were registered degree-seeking students at Moraine Park Technical College. Participants received an e-mail request to complete the survey through the college-approved e-mail system. The standard Colorado State University Recruitment and Consent Form was placed within the main body of the e-mail with the invitation letter (see Appendix A).

The research did not cause any psychology risk, physical pain, or harm to participants. No names or other individually identifying information were collected from this research sample. The Office of Institutional Research Office of Moraine Park Technical College coded each participant in order to retrieve GPA data on the respondents. The Office grouped the data from the respondents into sample stratifications based on whether the students were active or inactive and enrolled face-to-face or online. All data were kept confidential by the Office of Institutional Research, and no information related to specific individuals was shared with the researcher.

Instrument

The nontraditional student attrition questionnaire, developed by Metzner (1983) and Bean (Metzner & Bean, 1987) and used with permission (see Appendix B), was the instrument for the study (see Appendix C). This questionnaire was originally used to develop a formalized model of nontraditional student attrition. Metzner (1983) conducted the evaluation of validity using a two-step process. The first step included the participation of two faculty members with an expertise in evaluating and developing surveys (Metzner, 1983). These faculty members, who also had a familiarity with student attrition, evaluated the questionnaire (Metzner, 1983). Next, the survey questions were evaluated using a pilot study of 20 students who fit the study

population but were not included in the study sample (Metzner, 1983). After they had answered the survey questions, Metzner (1983) interviewed the pilot group members in an effort to determine question interpretation, clarity, and witness the experiences of the respondents who completed the questionnaire. The nontraditional student attrition questionnaire served as the data collection instrument for this study. The questions used for data collection and analysis were based on the variables studied. Variables and their correlating question(s) were defined and labeled according to Metzner's (1983) research and documentation.

Reliability

Reliability represents the idea that the instrument consistently measured what it was supposed to measure (Field, 2013). Reliability is synonymous with consistency (Huck, 2008). In practice, reliability is the degree to which a participant will provide the same response when asked the same question (Agresti & Finaly, 2009). "The more questions that pertain to a particular theory, the greater the reliability will be (the higher the alpha)" (Rice, 2007, p. 53).

Metzner (1983) used Cronbach's alpha to measure the degree of internal consistency and correlation between the questions. Alpha reliability of .70 or higher is considered acceptable in a test of reliability (Field, 2013). Table 6 lists the corresponding alpha scores of the constructs utilized in this research as documented in the nontraditional student attrition questionnaire, as reported by Metzner and Bean (1987). Other variables researched for this project were not part of a construct.

Table 6

Study Constructs

Variable	No. of Items	Alpha	Mean	SD
Academic Advising	2	.85	2.01	1.61

Utility	3	.92	3.94	1.05
Goal Commitment	2	.94	4.15	.86

Note: Adapted from "The estimation of a conceptual model of nontraditional undergraduate student attrition" by B. S. Metzner and J. P. Bean, 1987. *Research in Higher Education*, *27*(1), 15-38.

Validity

Establishing construct validity is a process related to research quality. Assessing construct validity can involve, for example, determining if the questions used on a survey instrument align well with a theory or discerning if the survey instrument can account for interrelationship(s) among a set of predefined variables (Kubiszyn & Borich, 2003). "Validity refers to the degree to which a test measures what it is supposed to measure, and, consequently, permits appropriate interpretation of scores" (Gay, Mills, & Airasian, 2009, p. 154). According to Gliner et al. (2009), "Validity is the general term most often used by researchers to judge the quality or merit" (p. 101).

Gay, Mills, and Airasian (2009) stated that content validity "can be checked by asking experts to judge whether your items cover all aspects of the domain you intend to measure and whether they are in appropriate proportions relative to that domain" (pp. 209-210). During the development of the instrument, to confirm content validity, two outside faculty members with experience in survey research and knowledge of student attrition reviewed the document, along with a student pilot group to gain "clarity, relevancy, and completeness" (Metzner, 1983, p. 108). "Content validity was considered to be high for the items employed in this study" (Metzner, 1983, p. 108).

Construct validity is considered "the most important form of validity because it asks the fundamental validity question: What is the test really measuring?" (Gliner et al., 2009, p. 157). Kerlinger (1973) mentioned that construct validity is more difficult to measure than reliability. "For construct validity to be present, scores on measures that should be theoretically related are similar (convergent validation), while scores on less conceptually related measures are dissimilar (discriminate validity)". Bailer (1978) suggested "construct validation is often said to be the strongest kind of validation procedure" (p. 60). In addition, "Factor analysis can be utilized by the research to "provide evidence based on internal structure when a construct is complex and several aspects (or factors) of it are measured" (Gliner et al., 2009, p. 168). "Factor analysis is perhaps the most powerful method of construct validation (Kerlinger, 1973).

Metzner (1983) utilized factor analysis to develop construct validity for the instrument used to measure nontraditional undergraduate student attrition. The "factor loading ranged from .55 to .96, with a mean loading of .78" (Metzner, 1983, p. 109). The average validity was found to exceed what other researchers recommended (Trochim, 2001). According to Metzner (1983), "The measures possessed a high degree of convergent validity" (p. 109). Table 7 shows a comparison between Metzner's (1983) factor loading and the factor loading for this study. Table 8 provides the description of each construct measured in this study.

Table 7

Construct Factor Loading

	Metzner (1983)		Current Study	
Variable	Factor Loading	Coefficient Alpha	Factor Loading	Coefficient Alpha
Academic advising	Not itemized	.85		-0.26
Education Usefulness	.82/.81/.79	.92	.92/.94/.92	.92
Goal commitment	.90/.92	.94	.96/.96	.91

Note: Comparison between Metzner's (1983) constructs and those studied in this project

Table 8

Variable Definitions

Variable	Definition (Metzner, 1983)
1. Academic advising – concern	Student's perception on the quality of academic advising (Metzner, 1983, Metzner & Bean, 1987)
2. Academic advising – appointment	"The frequency of students' contact with an academic advisor or academic counselor." (p. 122)
3. Financial certainty	"The degree to which students are certain that they will be able to finance their continuation in college." (p. 126)
4. Student satisfaction	"The degree which a student enjoys the role of being a student." (p. 139)
5. Education usefulness	"Students' perceptions about the utility of their college education for future employment opportunities." (p. 137)
6. Goal commitment	"The importance a student ascribes to obtaining a college education." (p. 133)
7. Outside encouragement - friends	"The degree of encouragement that students perceive their close friends to offer toward continued enrollment at the college" (p. 131).
8. Outside encouragement – employer	The degree of encouragement that students perceive their employer to offer toward continued enrollment at the college (Metzner, 1983, Metzner & Bean, 1987).
9. Outside encouragement – parent/spouse	"The degree of encouragement that students perceive their parents or spouse to offer toward continued enrollment at the college" (p. 129).
10. Academic stress	"The extent to which a student experiences psychological stress from the amount of time and energy involved in college attendance." (p. 140)

Note: Adapted from "An application and evaluation of a model of student attrition using freshman at a public urban commuter university," by B. S. Metzner, 1983. (Doctoral dissertation). Indiana University. Terre Haute, Indiana.

Data Analysis

The purpose of this quantitative study was to examine the relationships between students' intent to persist and combinations of advising, education usefulness, student satisfaction, goal commitment, stress, outside encouragement, finances, and GPA. The researcher used the principles described in *IBM SPSS for Introductory Statistics: Use and Interpretation* (Morgan, Leech, Gloeckner, & Barrett, 2010) for analyses and interpretations. This project used descriptive statistics to illustrate the characteristics of the sample groups (online and face-to-face students). "Descriptive statistics can help to provide a meaningful and convenient way of characterizing and portraying important features of the data" (Minium, Clarke, & Coladarci, 1999, p. 2). According to Trochim (2001), a descriptive study is designed to describe what currently exists or what is occurring.

Pearson's correlation coefficient (r) was used to interpret the relationship of the dependent variable to the independent variables. Pearson's correlation coefficient (r) reflects the strength or "magnitude of the relationship" (Minium, Clarke, & Coladarci, 1999, p. 115). When there is no relationship, $r = 0$; a perfect positive relationship between the independent and dependent variable is shown by $r = +1$; -1 reflects a perfect negative relationship. A correlation coefficient close to 1 indicates a linear relationship between independent and dependent variable, whereas a correlation near 0 shows that there is no linear relationship (Minium, Clarke, & Coladarci, 1999).

A multiple regression analysis was performed as part of this study. According to Gliner et al. (2009), "Multiple regression is a frequently used statistical method for analyzing data when there are several independent variables and one dependent variable" (p. 329) and is often used for associational approaches. The "multiple regression attempts to predict a normal (i.e., scale) dependent variable from a combination of several normally distributed and/or dichotomous

independent/predictor variables" (Morgan et al., 2007, p. 134). Garson (2001) mentioned that when performing a multiple regression analysis, continuous data are preferred, as they do not limit the variance; however, ordinal data can also be used.

In a multiple regression, the dependent variable can be referred to as a *criterion* or *outcome* variable, whereas the independent variables are referred to as *predictor* variables (Gliner et al., 2009). In this study, the independent variables were GPA, academic advising, education usefulness, student satisfaction, goal commitment, academic stress, encouragement, and financial certainty. The dependent variable was the student's intent to persist.

Multiple regression analysis and backward elimination were selected to facilitate the development of a model in which predictor variables contribute significantly to the independent variable (a student's intent to persist) and to eliminate those dependent variables not influencing the independent variable. As mentioned, the statistical objective of this study was to remove in a systematic manner any variable that did not contributing to the model (Byerly, 1970). Backward elimination is a method that a researcher can use to develop a model and "to reduce sources of error in prediction" (Reinard, 2006, p. 361). This method "is commonly used when the goal is to find the best set of predictors for a dependent variable" (Scurlock, 2008, p. 85).

In a backward elimination method, all dependent variables are placed into the model (Agresti & Finlay, 2008); then SPSS is used to "test whether any of these predictors can be removed from the model without having a substantial effect on how well the model fits the observed data" (Field, 2009, p. 272). "With this method, the first entry is controlled by the researcher based on an understanding of theory and past research" (Reinard, 2006, p. 361). Using the backward elimination method, the first dependent variable removed from the model is the variable that has the least impact on how the model fits the data (Field, 2013). According to Reinard (2006), "Many researchers find that the backward elimination approach is least likely to

produce difficulties" (p. 361). Thus, using the backward elimination method implies that contributing predictor variables are selected from a larger set of variables through a statistically recognized method (Duncan, 1966).

This study also utilized the *t*-test. The *t*-test is "used to determine whether two groups of scores are significantly different at a selected probability level" (Gay, Mills, & Airasian, 2009, p. 335). A *t*-test is intended "to compare the actual difference between the means of the groups with the difference expected by chance" (p. 335). The researcher set the significance level of .05 for the study. By setting this significance level, the researcher accepted a 5% risk of making a Type I error, which was the risk of rejecting the null hypothesis when it was actually true.

Summary

This chapter provided an overview of the methodology, design, data collection, and analysis for the research project. The intent of this study was to study student persistence of online nontraditional learners at a Wisconsin Technical College, guided mostly by the work of Bean and Metzner (Bean, 1982; Bean & Metzner, 1985; Metzner & Bean, 1987). Participants in this study were students who attended a technical college in the State of Wisconsin. The research employed a nonexperimental, quantitative design. All quantitative data were collected through a survey sent via the MPTC student e-mail system. The results of the study are reported in Chapter 4 of this dissertation.

CHAPTER FOUR: RESULTS

Overview

In this chapter, the findings of an investigation of nontraditional students attending undergraduate studies at a technical college in Wisconsin are reported. The study utilized variables found in the conceptual model of nontraditional student attrition (Bean & Metzner, 1985). The researcher used a quantitative approach to examine factors that may predict online students' intent to persist in their studies. The data used for this study were from a survey that was conducted of degree-seeking students attending at least one course in a FLEx program. A FLEx program is designed to serve students who are unable to meet their educational goals via traditional methods (Moraine Park Technical College, 2014d). The intent of a FLEx degree is to offer a two-year education to students who are attempting to balance their personal lives, work lives, and academic lives (Moraine Park Technical College, 2014d), which account for many of the variables Bean and Metzner (1985) described in their model.

Two research questions were used to direct this quantitative research study in identifying academic and non-academic variables that influence the persistence of non-traditional students at a Wisconsin Technical college. This chapter reports the results of the following questions:

Research Question 1: Can online program students' intent to persist be predicted from a combination of 1) GPA and the self-perceptions of, 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Research Question 2: What differences, if any, exist between online program students' intent to persist and face-to-face students' intent to persist from a combination of, 1) GPA and the self-perceptions of 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

Demographics

The population of this study consisted of 114 undergraduate students enrolled in FLEx degree programs during the spring semester of the 2012–2013 academic year. Each respondent was asked to self-identify as taking courses either online or face-to-face. Of the 114 respondents, 74 (64%) identified themselves as online students; 40 (35%) identified as face-to-face students. The age range of the population was 19 to 67 years, with an average age of 38. Eighty-one of the respondents were female, and the remaining 33 were male. Table 9 provides the age bracket frequencies and percentages for the sample.

Table 9

Respondent Age

What was your age at your last birthday?		
	Frequency	Percent
≤19	2	1.7
20-24	10	8.7
25-29	15	13.1
30-34	22	19.2
35-39	17	14.9
40-44	13	11.4
45-49	14	12.2
50-54	9	7.8
55-59	7	6.1
≥ 60	5	4.3
Total	114	100.0

The respondents were also asked to indicate their current marital status. Sixty-one (53.5%) were married, and 53 (46.5%) were unmarried. In addition to marital status, participants were asked to identify the number of children or relatives, not including spouses, with whom they were currently living and for whom they had responsibility. Of the 114 responses, 50 (43.9%) responded "none," 29 (25.4%) responded "one," 18 (15.8%) responded "two," 9 (7.9%) responded "three," and 8 (7.0%) responded "more than three."

Of the 114 respondents, 87 reported they were employed at least one hour per week. Forty-five people (39%) were employed 40 or more hours per week. Sixty-three students

(55.3%) of the sample were employed 30 or more hours in a week. Eighty-seven respondents (76.3%) indicated they would likely be returning to MPTC the following semester. The remaining 27 respondents (23.6%) reported a likelihood of not returning to MPTC the following semester. Table 10 shows the frequencies of responses for the survey question, "Do you expect to be enrolled in courses at MPTC next semester?"

Table 10

Respondent Intent to Persist

Student Persistence		
	Frequency	Percent
Definitely no	17	14.9
Very slight chance	5	4.4
Uncertain, probably not	5	4.4
Uncertain, probably yes	4	3.5
Quite a good chance	6	5.3
Definitely yes	77	67.5
Total	114	100.0

Research Question 1

Population and Descriptive Statistics of Online Students

Of the 74 respondents identified by MPTC's Institutional Research Office as online students, 52 (70.3%) were female, and the remaining 22 (22.7%) were male. Table 11 displays the age frequencies and percentages of the online students in this study by age category. The average age was 38.29 years, and the age range was 19 to 67 years.

Table 11

Online Respondents Age

What was your age at your last birthday?		
	Frequency	Percent
≤19	1	1.70
20-24	6	8.70
25-29	9	13.10
30-34	17	19.20
35-39	9	14.90
40-44	9	11.40
45-49	9	12.20
50-54	7	7.80
55-59	4	6.10
≥ 60	3	4.30
Total	74	100.00

Of the online students, more participants were married than were unmarried, 42 (56.8%) compared to 32 (43.2%), respectively. Of these online students, 64.8% were living with at least

one child or another relative for whom they were responsible (other than a spouse). Twenty-six (35.1%) reported they did not live with another individual for whom they were responsible (other than a spouse). Twenty-one (28.4%) reported they lived with one relative or child, 13 (17.6%) reported two people, 7 (9.5%) reported they lived with three people, and 7 (9.5%) reported they lived with and were responsible for more than three relatives and/or children, other than a spouse.

A majority (59 participants, 79.7%) indicated they worked an average of at least one hour or more per week. Thirty-four (45.9%) of the 74 reported that they worked an average of 40 or more hours per week. The third most frequent category of hours worked was 30 to 39 hours, with 9 respondents (12.2%). Fifteen (20.3%) of the online students reported that they were not employed.

Table 12 provides a descriptive analysis of each variable studied for each online students' responses, including number of items, minimum (Min), maximum (Max), mean (*M*), and standard deviation (*SD*).

Table 12

Descriptive Statistics for Variables of Online Students

Variable	No. of Items	N	Min.	Max.	*M*	*SD*
Persistence	1	74	1	6	4.780	1.911
GPA	1	74	1	4	3.566	0.670
Academic advising - concern	1	72	1	5	1.541	0.963
Academic advising - appointment	1	72	1	5	2.805	1.390
Education usefulness	3	74	1	5	3.698	1.032
Course satisfaction	1	74	1	5	4.013	0.851
Goal commitment	2	74	1	5	4.473	0.716
Academic stress	1	74	1	5	3.391	1.004
Outside encouragement - parents	1	72	1	5	3.722	1.280
Outside encouragement - employer	1	73	1	5	2.493	1.528
Outside encouragement - friend	1	74	1	5	3.256	1.414
Financial certainty	1	74	1	5	3.767	1.136

When asked about plans to re-enroll in courses at MPTC the following semester, 56 (75.6%) of the respondents indicated an intention to re-enroll in at least one course. Eighteen students (24.3%) reported an intention of not re-enrolling in at least one course. Table 13 shows the category with the highest frequency was “definitely yes,” at 48 (64.9%).

Table 13

Online Students' Intent to Persist

Student Persistence				
	Frequency	Percent	Valid Percent	Cumulative Percent
Definitely no	11	14.9	14.9	14.9
Very slight chance	3	4.1	4.1	18.9
Uncertain, probably not	4	5.4	5.4	24.3
Uncertain, probably yes	3	4.1	4.1	28.4
Quite a good chance	5	6.8	6.8	35.1
Definitely yes	48	64.9	64.9	100.0
Total	74	100.0	100.0	

Analysis by Pearson Correlation

To investigate if there was any significant association between the intent to persist (DV) of online students and each independent variable, Pearson correlations were computed utilizing SPSS to determine if linear relationships existed. The relationship with the strongest correlation was education usefulness, with a moderately positive association of .009. The correlation with the least strength was outside encouragement from friends at .709. Table 14 displays the relationships found between each independent variable and student intent to persist (DV).

Table 14

Pearson Correlation Between Intent to Persist and Independent Variables

Variable	Pearson Correlation
GPA	–.061
Academic advising - concern	–.154
Academic advising - appointment	.078
Education usefulness	.300**
Course student satisfaction	.170
Goal commitment	.121
Academic stress	–.084
Outside encouragement - parent/spouse	.078
Outside encouragement - employer	.044
Outside encouragement - friends	.208
Financial certainty	.191

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Analysis by Multiple Regression—External and Internal College Variables

The intent of this research project was to investigate if any combination of the independent variables could predict online students' intent to persist. The research variables included factors that were internal and external to the control of the college. The independent variables were utilized as predictors of students' intent to take future classes at Moraine Park Technical College. The statistical multiple regression process was chosen to check the assumptions. Next, two or more independent variables were considered with one dependent variable (Gliner et al., 2009). "Multiple regression attempts to predict a normal (i.e., scale)

dependent variable from a combination of several normally distributed and/or dichotomous independent/predictor variables" (Morgan, Leech, Gloeckner, & Barrett, 2007).

Because the research project was designed to determine which combination of variables could predict persistence, the decision was made to use backward elimination in SPSS. "Backward elimination begins by placing all the predictors under consideration in the model. It deletes one at a time until reaching a point where the remaining variables all make significant partial contributions to predicting *y*" (Agresti & Finlay, 2008, p. 442). When utilizing a backward elimination, SPSS includes all the explanatory variables into the initial model (Agresti & Finlay, 2008). First, SPSS will produce only one model of all the variables and then "make significant partial contributions at some fixed *a*-level, according to usual *t*-test or *F*-test, then that model is the final one. Otherwise, the explanatory variable having the largest *P*-value, controlling the other variables in the model, is removed" (Agresti & Finlay, 2008, p. 442). The process is repeated "until each remaining predictor explains a significant partial amount of the variability in *y*" (Agresti & Finlay, 2008, p. 443).

The first online student model, as described above, placed all the independent variables into the model. In the first model, the variables used were (a) GPA, (b) academic advising - concern, (c) academic advising – appointment (d) education usefulness, (e) student satisfaction, (f) goal commitment, (g) academic stress, (h) outside encouragement – parent/spouse, (i) outside encouragement – employer, (j) outside encouragement – friends, and (k) financial certainty. SPSS was used to apply the backward stepwise method to determine variables that made "a statistically significant contribution to how well the model predicts the outcome variable" (Field, 2013, p. 322). The 10^{th} model conducted included one variable, which explained the most variance. See Table 15 for the complete model summary of all 10 regression models.

Table 15
Online Student Regression Model Summary - External and Internal College Variables Student Regression

Model Summary

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate	Durbin-Watson
1	.439[a]	.192	.034	1.882	
2	.439[b]	.192	.051	1.866	
3	.438[c]	.192	.067	1.850	
4	.435[d]	.189	.079	1.837	
5	.431[e]	.186	.091	1.826	
6	.425[f]	.181	.100	1.816	
7	.421[g]	.177	.111	1.806	
8	.417[h]	.174	.122	1.795	
9	.401[i]	.160	.121	1.795	
10	.360[j]	.130	.103	1.814	
11	.335[k]	.112	.099	1.818	2.058

a. Predictors: (Constant), Financial Certainty, Outside Encouragement (Parents/Spouse), Goal Commitment, Academic Advising - Appointment, Academic Stress, Student Satisfaction, GPA, Outside Encouragement (Employer), Academic Advising - Concern, Education Usefulness, Outside Encouragement (Friends)
b. Predictors: (Constant), Financial Certainty, Outside Encouragement (Parents/Spouse), Academic Advising - Appointment, Academic Stress, Student Satisfaction, GPA, Outside Encouragement (Employer), Academic Advising - Concern, Education Usefulness, Outside Encouragement (Friends)
c. Predictors: (Constant), Financial Certainty, Outside Encouragement (Parents/Spouse), Academic Stress, Student Satisfaction, GPA, Outside Encouragement (Employer), Academic Advising - Concern, Education Usefulness, Outside Encouragement (Friends)
d. Predictors: (Constant), Financial Certainty, Outside Encouragement (Parents/Spouse), Academic Stress, Student Satisfaction, GPA, Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
e. Predictors: (Constant), Financial Certainty, Outside Encouragement (Parents/Spouse), Academic Stress, Student Satisfaction, Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
f. Predictors: (Constant), Financial Certainty, Academic Stress, Student Satisfaction, Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
g. Predictors: (Constant), Financial Certainty, Student Satisfaction, Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
h. Predictors: (Constant), Financial Certainty, Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
i. Predictors: (Constant), Outside Encouragement (Employer), Education Usefulness, Outside Encouragement (Friends)
j. Predictors: (Constant), Outside Encouragement (Employer), Education Usefulness
k. Predictors: (Constant), Education Usefulness
l. Dependent Variable: Persistence

After entering the predictor variables into a backward stepwise regression, those that made a unique contribution to the prediction of student's intent to persist were retained in the model of choice. The eighth model, the model of choice, included four predictor variables: (a) education usefulness, (b) employer encouragement, (c) financial certainty, and (d) friend encouragement. This model displayed an *R*-value of .417 and adjusted R^2 value of .122. The unstandardized partial regression coefficients (*B*), the standard errors of *SEB*, and standardized partial regression coefficients (β) between the independent variables and the dependent variable of intent to persist for the eighth model are shown in Table 16.

Table 16

A Multiple Regression Summary for Predictors of Online Student Persistence

Variable	*B*	*SEB*	β
(Constant)	1.521	1.060	
Education usefulness	0.630	0.228	0.341**
Outside encouragement - employer	–0.262	0.171	–0.201
Outside encouragement - friend	0.229	0.178	0.168
Financial certainty	0.206	0.203	0.120

Note: *(N=68)*
*p < .05; **p < .01, *B* = unstandardized regression coefficient*; SEB* = Standard error of the coefficient*;*
β = standardized coefficient

The means, standard deviations, and intercorrrelations can be found in Table 17. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.058. There were no concerns with multicolinearity; all variables had a correlation less than .7, and all tolerance values were greater than .1 (Laerd Statistics, 2015). The combinations of the independent variables to predict student persistence was statistically significant, $F(4, 64) = 3.318$, $p = .016$, adj. $R^2 = .122$. The only variable that added statistical significance to prediction was education usefulness, $p < .01$. According to Cohen (1998), an R of about .417 indicated a medium to large effect.

Table 17
Online Students: Means, Standard Deviations, and Intercorrelations for Student Persistence and Predictor Variables

Variable	*M*	*SD*	Education usefulness	Employer Encourage-ment	Friend Encourage-ment	Financial Certainty
Student Persistence	4.780	1.915	0.335**	–0.12	0.202*	0.195
Predictor Variable						
Education Usefulness	3.725	1.036	--	0.335**	0.268*	0.136
Outside encouragement - employer	2.382	1.466	0.335**	--	0.416**	0.040
Outside encouragement - friend	3.294	1.404	0.268*	0.416**	--	0.221*
Financial Certainty	3.794	1.113	0.136	0.040	0.221*	--

*$p < .05$;**$p < .01$. N=68

Analysis by Multiple Regressions—Internal College Variables

A second regression analysis was conducted of online students at MPTC utilizing the variables of the study over which the college had direct influence. The statistical process of multiple regression was utilized to check the assumptions and then evaluate the variables. This step was conducted to determine which combination of variables best predicted the student intent to persist; as in the previous analysis, the backward elimination method was utilized.

Three models resulted from the SPSS analysis. In the first model, all the independent variables were placed into the model. In the first model, the variables were (a) student satisfaction, (b) academic advising concern, (c) academic advising appointment and (d) education usefulness. The second model was chosen with independent variables student satisfaction and education usefulness. The third model included one variable, which explained the most variance. See Table 18 for the complete model summary of all three regression models.

Table 18

Online Student Regression Model Summary—Internal College Variables

Model Summary					
Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate	Durbin-Watson
1	.366[a]	.134	.081	1.857	
2	.365[b]	.133	.094	1.844	
3	.352[c]	.124	.098	1.841	
4	.323[d]	.104	.091	1.848	2.058

a. Predictors: (Constant), Education Usefulness Construct, Academic Advising - Concern, Student Satisfaction, Academic Advising - Appointment
b. Predictors: (Constant), Education Usefulness, Academic Advising - Concern, Student Satisfaction
c. Predictors: (Constant), Education Usefulness, Academic Advising - Concern
d. Predictors: (Constant), Education Usefulness
e. Dependent Variable: Persistence

After entering the predictor variables into a backward stepwise regression, those that made a unique contribution to the prediction of student intent to persist were retained in the model of choice. The third model, the model of choice, included two predictor variables: (a) academic advising concern and (b) education usefulness. This model displayed an *R*-value of .352 and an adjusted R^2 of .098. The unstandardized partial regression coefficients (*B*), the standard errors of *SEB*, and standardized partial regression coefficients (β) between the independent variables and the dependent variable of intent to persist for the sixth model can be found in Table 19.

Table 19
A Multiple Regression Summary for Predictors of Online Student Persistence: Internal College Variables

Variable	*B*	*SEB*	β
(Constant)	3.023	1.251	
Academic advising - concern	–0.281	0.228	–0.140
Education usefulness	0.558	0.212	0.315*

Note: *p<.05;**p<.01, N= 71, *B* = unstandardized regression coefficient*; SEB* = Standard error of the coefficient*; β* = standardized coefficient

The means, standard deviations, and intercorrrelations are shown in Table 20. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.058. There were no concerns with multicolinearity; all variables had a correlation less than .7 and all tolerance values were greater than .1 (Laerd Statistics, 2015). The combinations of the independent variables to predict student persistence was statistically significant, $F(2, 68) = 3.388$, $p = .011$, adj. $R^2 = .098$. The only variable that added statistical significance to the prediction was education usefulness, $p < .05$. According to Cohen (1998), the *R* of about .352 indicated a medium effect.

Table 20
Online Students: Means, Standard Deviations, and Intercorrelations for Student Persistence and Predictor Variables

Variable	*M*	*SD*	Academic Advising - Concern	Education Usefulness
Persistence	4.760	1.938	–0.045	0.323**
Predictor variable				
Academic advising - concern	1.549	0.967	--	–0.054
Education usefulness	3.694	1.038	–0.054	--

*$p < .05$; **$p < .01$. N=71

Research Question 2

Population and Descriptive Statistics

The total population of face-to-face students identified by MPTC's Institutional Research Office numbered 40 (35%). Of the 40 face-to-face students, 19 (47.5%) were married, and 21 (52.5%) were unmarried. Table 21 shows the comparison of marital status between online and face-to-face students. This table shows 56.8% percent of the online students were married, versus 47.5% of face-to-face students who were married.

Table 21

Comparison of Marital Status

What is your present marital status? (select one response)					
		Online Students		Face-to-Face Students	
		Frequency	Percent	Frequency	Percent
	Married	42	56.8	19	47.5
	Unmarried	32	43.2	21	52.5
Total		74	100.0	40	100.0

There was not a wide difference in average age between online and face-to-face students. The average online student age was 38.29, compared to 38.22 years for the face-to-face students. As seen in Table 22, the largest age category for face-to-face students was the 35 to 39 group (20.00%), and the largest age category for online students was 30 to 34 year olds (22.97%).

Table 22

Comparison of Age

What was your age at your last birthday?				
	Online Students		Face-to-Face Students	
	Frequency	Percent	Frequency	Percent
≤19	1	1.35	1	2.50
20-24	6	8.10	4	10.00
25-29	9	12.16	6	15.00
30-34	17	22.97	5	12.50
35-39	9	12.16	8	20.00
40-44	9	12.16	4	10.00
45-49	9	12.16	5	12.50
50-54	7	9.45	2	5.00
55-59	4	5.40	3	7.50
≥ 60	3	4.05	2	5.00
Total	74	100.00	40	100.00

With regard to the number of children and/or relatives for whom the student was responsible, online students were more likely to care for others in the home than were face-to-face students. Table 23 displays the numbers of children or relatives for whom students were responsible. Sixty percent of face-to-face students reported having no responsibility to care for others in the home, compared to 35.1% of online students. However, 64.86% of online students reported responsibility for at least one child or relative, compared to 40% for face-to-face students.

Table 23
Comparison of Number of Children or Relatives (not Including Spouse) Responsible for in the Same Residence

How many children or relatives (not including your spouse) are living with you for whom you are responsible? (select one response)

	Online Students		Face-to-Face Students	
	Frequency	Percent	Frequency	Percent
None	26	35.1	24	60.0
One	21	28.4	8	20.0
Two	13	17.6	5	12.5
Three	7	9.5	2	5.0
More than three	7	9.5	1	2.5
Total	74	100.0	40	100.0

Table 24 provides comparisons between online and face-to-face students for each variable. Student intent to persist did not vary greatly between online (4.78) and face-to-face students (4.90). Financial certainty produced almost identical means: online students showed a mean of 3.767, and face-to-face student showed a mean of 3.769. One of the greatest differences between means was found for academic stress. For academic stress, the mean for online students was 3.391; the mean for face-to-face students was 2.875.

Table 24

Comparison of Descriptive Statistics for Variables of Face-to-Face and Online Students

Variable	No. of Items	N	Min.	Max.	M	SD	Std. Error of Skewness	Kurtosis	St. Error of Kurtosis
Student Persistence									
Online	1	74	1	6	4.78	1.911	.279	-.247	.552
Face-to-Face	1	40	1	6	4.90	1.945	.374	.066	.733
GPA									
Online	1	74	1	4	3.566	.670	.279	4.783	.552
Face-to-Face	1	40	1	4	3.603	.72	.374	7.931	.733
Academic Advising - Concern									
Online	1	72	1	5	1.541	0.963	0.283	3.832	0.559
Face-to-Face	1	40	1	5	1.45	.904	.374	5.216	.733
Academic Advising – Appointment									
Online	1	72	1	5	2.805	1.390	0.283	-1.278	0.559
Face-to-Face	1	39	1	5	2.94	1.413	.378	-1.418	.741
Education Usefulness									
Online	3	74	1	5	3.698	1.032	.279	-.824	.552
Face-to-Face	3	40	1	5	3.833	.971	.374	-.733	.733

Student Satisfaction									
Online	1	74	1	5	4.013	.851	.279	1.134	.552
Face-to-Face	1	40	1	5	4.150	.833	.374	.429	.733
Goal Commitment									
Online	2	74	1	5	4.473	.716	.279	1.457	.552
Face-to-Face	2	40	1	5	4.262	1.037	.374	2.752	.733
Academic stress									
Online	1	74	1	5	3.391	1.004	.279	-.400	.552
Face-to-Face	1	40	1	5	2.875	.991	.374	-.152	.733
Outside Encouragement - Parent/Spouse									
Online	1	72	1	5	3.722	1.280	.283	-.288	.559
Face-to-Face	1	40	1	5	3.600	1.464	.374	-1.081	.733
Outside Encouragement - Employer									
Online	1	73	1	5	2.493	1.528	.281	-1.409	.555
Face-to-Face	1	40	1	5	2.325	1.474	.374	-1.221	.733
Outside Encouragement - Friend									
Online	1	74	1	5	3.256	1.414	.279	-1.179	.552
Face-to-Face	1	40	1	5	3.27	1.467	-.300	-1.289	.733
Financial									
Online	1	74	1	5	3.767	1.136	.281	-.031	.555
Face-to-Face	1	39	1	5	3.769	1.157	.378	-1.202	.741

Table 25 shows a comparison of responses for intent to persist between online students and face-to-face students. Of the 74 online students, 24.32% were not likely to re-enroll the following semester. For face-to-face students, 22.5% were not likely to re-enroll. Face-to-face students were more likely to indicate they would "definitely" be re-enrolling in course work the following semester, 72.5% compared to 64.9% for online students.

Table 25

Comparison of Student Persistence

Student Persistence				
	Online Students		Face-to-Face Students	
	Frequency	Percent	Frequency	Percent
Definitely no	11	14.9	6	15.0
Very slight chance	3	4.1	2	5.0
Uncertain, probably not	4	5.4	1	2.5
Uncertain, probably yes	3	4.1	1	2.5
Quite a good chance	5	6.8	1	2.5
Definitely yes	48	64.9	29	72.5
Total	74	100.0	40	100.0

Analysis by Pearson Correlation

To investigate if there were any significant associations between intent to persist (DV) of face-to-face students and the independent variables, Pearson correlations were computed utilizing SPSS. Assessing associations between variables can reveal linear relationships (Field, 2013). The strongest relationship discovered, with a moderate positive correlation, was student

satisfaction at .031. The correlation with the least strength was academic stress at .610. Table 26 displays the relationships found between each independent variable and student intent to persist (DV).

Table 26

Comparison of Pearson Correlation Between Intent to Persist and following Variables

	Pearson Correlations	
Variable	Online Students	Face-to-Face Students
Academic advising – appointment	.78	-.31
Academic advising - concern	–.154	–.251
Academic stress	–.084	–.060
Education usefulness	.300**	.066
Financial certainty	.191	.281
Goal commitment	.121	–.171
GPA	–.051	.078
Outside encouragement - parent/spouse	.078	.211
Outside encouragement - employer	.044	.083
Outside encouragement - friend	.208	.207
Student satisfaction	.170	.342*

*$p < .05$; **$p < .01$.

Analysis by Independent t-Test

The *t*-test analysis found that the significantly different variable between face-to-face and online students was academic stress, $t(112) = 2.634$, $p = 0.010$ for face-to-face students ($M = 2.87$, $SD = 0.991$) compared to online students ($M = 3.39$, $SD = 1.004$). The effect size *d*,, difference between two means and divided by a standard deviation, was approximately .517. According to Cohen (1998), this is considered a medium effect. Several other variables did not significantly differ between the two student groups. Table 27 displays the complete results of the *t*-tests.

Table 27

T-Test—Comparison of Face-to-Face and Online Students

Variable	*M*	*SD*	*t*	*df*	*p*
Persistence			.308	112	0.759
Face-To-Face	4.90	1.945			
Online	4.78	1.911			
Academic advising - concern			0.493	110	0.623
Face-To-Face	1.450	0.904			
Online	1.541	0.963			
Academic advising - appointment			–0.515	109	0.608
Face-To-Face	2.948	1.413			
Online	2.80	1.390			
Education usefulness			–0.935	112	0.352
Face-To-Face	3.883	0.971			
Online	3.698	1.032			
Student satisfaction			–0.822	112	0.413
Face-To-Face	4.150	0.833			
Online	4.013	0.851			

Variable	*M*	*SD*	*t*	*df*	*p*
Goal commitment			1.273	112	0.205
Face-to-Face	4.262	1.037			
Online	4.473	0.716			
Academic stress			2.634	112	0.010
Face-To-Face	2.875	0.991			
Online	3.391	1.004			
Encouragement - parent/spouse			0.460	110	0.647
Face-To-Face	3.600	1.464			
Online	3.722	1.280			
Encouragement - employer			0.566	111	0.572
Face-To-Face	2.325	1.474			
Online	2.493	1.528			
Encouragement - friend			–0.065	112	0.948
Face-To-Face	3.275	1.467			
Online	3.256	1.414			
Financial certainty			–0.009	110	0.993
Face-To-Face	3.767	1.157			
Online	3.769	1.136			
GPA			–0.275	112	0.784
Face-To-Face	3.603	0.721			
Online	3.566	0.670			

(N = 40 face-to-face students and 74 online students)

*$p < .05$; **$p < .01$.

Note: M = Mean. SD = Standard Deviation. Persistence ranged from 1 (definitely no) to 5 (definitely yes). Academic Advising - Concern ranged from 1 (not at all) to 5 (to a very great extent). Academic Advising – Appointment ranged from 1 (not at all) to 5 (to a very great extent). Education Usefulness ranged from 1 (little or no use) to 5 (a very great deal). Course Student Satisfaction ranged from 1 (strongly disagree) to 5 (strongly disagree). Goal Commitment ranged from 1 (extremely unimportant) to 5 (extremely important). Academic Stress ranged from 1 (not at all) to 5 (to a very great extent). Parents/spouse Encouragement ranged from 1 (not at all) to 5 (to a very great extent). Employer Encouragement ranged from 1 (not at all) to 5 (to a very great extent). Friend Encouragement ranged from 1 (not at all) to 5 (to a very great extent). Financial Certainty ranged from 1 (very uncertain) to 5 (very certain). GPA ranged from 0 to 4.

Analysis by Multiple Regression—External and Internal College Variables

The intent of this research question was to determine if any combination of the independent variables could predict face-to-face students' intent to persist and to compare the results to online students. The research variables included factors that were internal and external to the control of the college. The independent variables were utilized as predictors in the equation with the students' intent to take future classes at Moraine Park Technical College. The statistical multiple regression process was chosen to check the assumptions and then to evaluate the variables. The association questions that consisted of two or more independent variables were considered one dependent variable (Gliner et al., 2009). "Multiple regression attempts to predict a normal (i.e., scale) dependent variable from a combination of several normally distributed and/or dichotomous independent/predictor variables" (Morgan et al., 2007). Backward elimination was utilized to determine which variables were most significant.

Nine models resulted from the SPSS analysis. See Table 28 for a summary of each model. In the first model, all of the independent variables were placed into the model. The variables in the first model were (a) GPA, (b) academic advising, (c) education usefulness, (d) student satisfaction, (e) goal commitment, (f) academic stress, (g) parents encouragement, (h) employer encouragement, (i) friends encouragement, and (j) financial certainty. The ninth model included two variables, which explained the most variance.

Table 28

Face to Face Student Regression Model Summary – External and Internal College

Model Summary					
Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate	Durbin-Watson
1	.581[a]	.338	.093	1.792	
2	.580[b]	.337	.124	1.761	
3	.574[c]	.330	.145	1.740	
4	.570[d]	.325	.167	1.717	
5	.562[e]	.316	.183	1.701	
6	.547[f]	.300	.190	1.693	
7	.533[g]	.284	.197	1.686	
8	.799[h]	.249	.183	1.701	
9	.464[i]	.215	.170	1.714	2.472

a. Predictors: (Constant), Financial Certainty, Outside Encouragement (Employer), Student Satisfaction, Academic Stress, Education Usefulness, Academic Advising - Concern, GPA, Academic Advising - Appointment, Outside Encouragement (Parents/Spouse), Outside Encouragement (Friends)
b. Predictors: (Constant), Financial Certainty, Outside Encouragement (Employer), Student Satisfaction, Academic Stress, Education Usefulness, Academic Advising - Concern, GPA, Outside Encouragement (Parents/Spouse), Outside Encouragement (Friends)
c. Predictors: (Constant), Financial Certainty, Student Satisfaction, Academic Stress, Education Usefulness, Academic Advising - Concern, GPA, Outside Encouragement (Parents/Spouse), Outside Encouragement (Friends)
d. Predictors: (Constant), Financial Certainty, Student Satisfaction, Academic Stress, Education Usefulness, Academic Advising - Concern, GPA, Outside Encouragement (Parents/Spouse)
e. Predictors: (Constant), Financial Certainty, Student Satisfaction, Academic Stress, Education Usefulness, GPA, Outside Encouragement (Parents/Spouse)
f. Predictors: (Constant), Financial Certainty, Student Satisfaction, Academic Stress, Education Usefulness, Outside Encouragement (Parents/Spouse)
g. Predictors: (Constant), Financial Certainty, Student Satisfaction, Academic Stress, Outside Encouragement (Parents/Spouse)
h. Predictors: (Constant), Financial Certainty, Student Satisfaction, Outside Encouragement (Parents/Spouse)
i. Predictors: (Constant), Student Satisfaction, Outside Encouragement (Parents/Spouse)
j. Dependent Variable: Persistence

The seventh model included financial certainty, student satisfaction, academic stress, and outside encouragement – parents/spouse. Table 29 shows the unstandardized partial regression coefficients (*B*), the standard errors of *SEB*, and standardized partial regression coefficients (β) between the independent variables and the dependent variable of intent to persist.

Table 29

A Multiple Regression Summary for Predictors of Online Student Persistence

Variable	*B*	*SEB*	β
(Constant)	–2.414	2.159	
Financial certainty	0.350	0.248	0.191
Student satisfaction	0.939	0.340	0.427**
Academic stress	0.392	0.308	0.197
Outside encouragement – parents/spouse	0.292	0.194	0.233

Note: *$p < .05$;** $p < .01$, N = 38, *B* = unstandardized regression coefficient*; SEB* = Standard error of the coefficient*;* β = standardized coefficient

The means, standard deviations, and intercorrrelations are shown in Table 30. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.236. There were no concerns with multicolinearity; all variables had a correlation less than .7, and all tolerance values were greater than .1 (Laerd Statistics, 2015). The combinations of the independent variables to predict student persistence was statistically significant, $F(4, 33) = 3.274$, $p = .023$, adj. $R^2 = .197$. The only variable that added statistical significance to predict intent to persist was student satisfaction, $p < .01$. According to Cohen (1998), an R of about 0.533 indicates a medium effect.

Table 30
Online Students: Means, Stand Deviation, and Intercorrelations for Student Persistence and Predictor Variables

Variable	*M*	*SD*	Financial Certainty	Student Satisfaction	Academic Stress	Outside Encourage-ment - Parent/ Spouse
Persistence	4.97	1.881	0.279	0.355*	-0.074	0.245
Predictor variable						
Financial certainty	3.763	1.172	--	0.065	-0.132	0.253
Student satisfaction	4.157	0.855	0.065	--	-0.269	-0.140
Academic stress	2.842	0.945	-0.132	-0.269	--	-0.140
Outside encouragement - parents/spouse	3.60	1.498	0.253	-0.140	0.088	--

*$p < .05$; **$p < .01$. N=38

Analysis by Multiple Regression—Internal College Variables

In a similar approach as was used for the first research question, a regression analysis was conducted of face-to-face students in the sample using the study variables over which the college has direct influence. The statistical multiple regression process was utilized to check the assumptions and then evaluate the variables. This step was intended to determine which combination of variables best predicted student intent to persist; as in previous analyses, the decision was made to employ backward elimination.

Two models resulted from the SPSS analysis. The first model, as described above, placed all the independent variables into the model. In the first model, the variables used were (a) student satisfaction, (b) academic advising concern, (c) academic advising appointment, and (c) education usefulness. The second model was chosen with independent variables student satisfaction and academic advising. The third model included one variable, which explained the most variance. See Table 31 for the complete model summary of both regression models.

Table 31

Face to Face Student Regression Model Summary –Internal College

Model Summary

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate	Durbin-Watson
1	.471[a]	.222	.130	1.830	
2	.471[b]	.222	.155	1.804	
3	.466[c]	.217	.173	1.784	2.372

a. Dependent Variable: Persistence
b. Predictors: (Constant), Education Usefulness, Academic Advising - Concern, Student Satisfaction, Academic Advising - Appointment
c. Predictors: (Constant), Academic Advising - Concern, Student Satisfaction, Academic Advising - Appointment
d. Predictors: (Constant), Academic Advising - Concern, Student Satisfaction

The third model included academic advising – concern and student satisfaction. Table 32 shows the unstandardized partial regression coefficients (*B*), the standard errors of *SEB*, and standardized partial regression coefficients (β) between the independent variables and the dependent variable of intent to persist.

Table 32

A Multiple Regression Summary for Predictors of Face-to-Face Student Persistence

Variable	*B*	*SEB*	β
(Constant)	1.981	1.468	
Academic advising - concern	0.681	0.322	–0.317*
Student satisfaction	0.936	0.349	0.402*

Note: *$p < .05$; **$p < .01$, N = 39, *B* = unstandardized regression coefficient; *SEB* = Standard error of the coefficient; β = standardized coefficient

The means, standard deviations, and intercorrrelations are shown in Table 33. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.237. There were no concerns with multicolinearity; all variables had correlations less than .7, and all tolerance values were greater than .1 (Laerd Statistics, 2015). The combinations of the independent variables to predict student persistence was statistically significant, $F(2, 36) = 4.176$, $p = .023$, adj. $R^2 = .143$. Both independent variables added statistical significance to the prediction of intent to persist, $p < .05$. According to Cohen (1998), an *R* of about .434 indicates a small to medium effect.

Table 33
Face-to-face Students: Means, Standard Deviations, and Intercorrelations for Student Persistence and Predictor Variables

Variable	*M*	*SD*	Academic Advising - Concern	Student Satisfaction
Persistence	4.87	1.963	–0.245	0.346*
Predictor Variable				
Academic advising - concern	1.461	0.844	--	0.179
Student satisfaction	4.153	0.844	0.179	--

*$p < .05$; **$p < .01$. N = 39

Conclusion

The purpose of Chapter 4 was to present the results of the statistical procedures and display the descriptive statistics, reliability coefficients, content validity, and the statistics for Research Questions 1 and 2. According to Morgan, Reichert, and Harrison (2002), a researcher should display the findings in a transparent and nondeceptive manner. For this project, the researcher found contributing variables for this sample of Moraine Park Technical College students' intent to persist. However, the relationships of GPA, goal commitment, academic advising - appointment, and parent/spouse encouragement were found to be much weaker than were the variables of education usefulness, student satisfaction, academic advising - concern, employer encouragement, financial certainty, and friend encouragement.

This study focused on examining students' intent to persist through two main questions. The first question centered on online students at Moraine Park Technical College; the second question was designed to measure the possible differences between the intent to persist of face-to-face students compared to the intent to persist of online students.

Research Question 1

To address the first question, a regression analysis was conducted on four predictor variables. Utilizing multiple regressions with the independent variables revealed an adjusted R^2 value of .122, which means that 12.2% of the variance in the online student participant's intent to persist was explained by educational usefulness, outside encouragement from employer, outside encouragement from friends, and financial certainty. The only predictor that was statistically significant was education usefulness.

The predictor variables used in the above analysis included variables that cannot be controlled by the institution. Since the intent of this research was to assist Moraine Park Technical College administrators with developing initiatives to increase student persistence, a second regression was analyzed using variables over which the college may have direct impact. Utilizing multiple regressions with the independent variables revealed an adjusted R^2 value of .098, which means that 9.8% of the variance in the online student participant's intent to persist was explained by academic advising - concern and education usefulness. Again, the only predictor that was statistically significant was education usefulness.

Research Question 2

To address the second research question, *t*-tests were performed on the variables of GPA, academic advising – concern, academic advising – appointment, education usefulness, student satisfaction, goal commitment, academic stress, outside encouragement – parents/spouse, outside encouragement – employer, outside encouragement – friends, and financial certainty. No significant results were found for GPA, academic advising, education usefulness, student satisfaction, goal commitment, parent/spouse encouragement, employer encouragement, friend encouragement, and financial certainty. There was a significant finding for academic stress.

In addition to the *t*-tests, a regression analysis was performed with the 11 predictor variables for face-to-face students. Utilizing multiple regressions with the independent variables revealed an adjusted R^2 value of .197, which means that 19.7% of the variance in the face-to-face student participants' intent to persist was explained by financial certainty, student satisfaction, academic stress, and outside encouragement – parent/spouse. Student satisfaction was statistically significant.

As in the analysis for the first research question, the first regression analysis for the second research question included variables that cannot be directly controlled by Moraine Park Technical College. The second analysis performed included only variables that the organization may directly influence. The analysis of the predictor variables in this analysis contained two variables. Utilizing multiple regressions with the independent variables revealed an adjusted R^2 value of .143, which means that 14.3% of the variance in the online student participant's intent to persist was explained by academic advising concern and student satisfaction. Both variables added statistical significance.

Although the findings of this project are not necessarily appropriate to other educational organizations, the findings can still be valuable for educators and administrators at Moraine Park Technical College (MPTC). The findings found within this chapter may help to develop initiatives to improve student persistence. A more detailed discussion of the findings is presented in the next chapter.

CHAPTER FIVE: DISCUSSION

Introduction

The purpose of this quantitative study was to determine students' intent to persist in online education and to evaluate the importance of variables described in Bean and Metzner's (1985) conceptual model of nontraditional undergraduate student attrition. Insights gained from this research project may provide educational administrators, advisors, faculty, and other college professionals additional information to gain a better understanding of the phenomenon of nontraditional student persistence in online education. If institution administrators knew which students were less likely to persist, they would be able to allocate resources more efficiently. Consequently, these administrators would be able to create or update internal organizational practices and programs that can directly affect a student's decision to persist (Simpson, 2003).

Online education in community colleges across the U.S. is increasing. Crawley (2012) reported that in 2010, 67% of community colleges wanted to expand student access to e-learning, and 45% wanted to increase student enrollment. With the continued increase in online education, institutions will continue to struggle to find ways to improve persistence and completion rates compared to the rates found in their face-to-face course offerings. The Instructional Technology Council (2013) reported online completion rates at 8% lower than traditional course offerings. Therefore, the purpose of this study was to explore online student persistence of nontraditional students and determine which variables could help to predict a student's intent to persist.

This chapter provides a summary of the purpose, procedures, and findings. In addition, a comparison between the findings between this research project and literature is discussed. This

chapter closes with recommendations for future research studies and implications for the human resource development (HRD) field.

Research Purpose

Distance education has improved greatly over the past 40 years largely through evolving technology. "In the 1980s and 1990s, distance education was a combination of telecourses and correspondence courses. But once the Internet could support text, graphics, audio, and video, institutions chose web-based delivery to provide distance education" (Crawley, 2012, p. 1). As mentioned, higher education can offer many forms of distance education; this research project focused on online education and the nontraditional students who attend college via this method. Technology is allowing online education to grow at a rapid pace; Crawley (2012) stated, "On-line courses are experiencing annual double-digit enrollment increases at the same time that more students with multiple risk factors are coming to college" (Crawley, 2012, p. 34). Some of these student risk factors might cause a student not to persist (Bean & Metzner, 1985).

"Persistence refers to learners' action as they relate to continuing their education from the first year until completing their degrees" (Stravredes, 2011, p. 22). Writers for the College Board (2012) mentioned that a student who does not persist in higher education via an online format will drop out because of conflicting obligations related to work or family commitments. In addition, community colleges will see a higher ratio of adults aged 25 or older; this age group may be more likely to be underprepared, to receive financial aid, and to be enrolled part-time, compared to their university counterparts (Fike & Fike, 2008). "Students who choose to enroll in online courses tend to do so because they may not be able to attend college otherwise" (Chase, 2014, p. 62). Similarly, Noel-Levitz (2009) found that students who choose to enroll in online programs typically do so because they are unable to attend their coursework face-to-face because

of work schedules, the potential or perceived convenience of online coursework, or traditional and alternative program requirements.

Persistence has been and continues to be a great challenge for higher education (Clay et al., 2009). As mentioned in Chapter 2, the level of persistence not only affects the student, but can also affect the institution. Students and the public see persistence as an indicator of the quality of education that the college provides (Thompson, 1999). A lower persistence rate will likely generate a lower perception of education quality (Angelino, Williams, & Natvig, 2007; Lee & Choi, 2011). In addition to a lower perceived quality of education, an institution might not experience a growth in enrollment (Moody, 2004).

Review of Procedures

A postpositivism framework was employed for this study, concentrating on quantitative methodology. The researcher utilized Likert-type questions in a survey methodology to collect data from 114 students enrolled at Moraine Park Technical College in the State of Wisconsin. According to Simpson (2003), if an institution's administrators are aware of certain student characteristics, then a statistical regression analysis can be used to determine which factors might affect students' intent to persist.

The population for this survey was comprised of online and face-to-face students attending an undergraduate FLEx program at Moraine Park Technical College during the spring term of the 2013 academic year. The Institutional Research Department e-mailed a Survey Monkey link to students via the official MPTC student e-mail account. Students had three weeks to respond to the survey. Participation in this research project was completely voluntary. MPTC's Institutional Research Department coded each participant's record with his or her GPA and whether he or she was an online student or a face-to-face student. No personal identification information was shared with the researcher.

Discussion of Research Questions

The high-level research question of this study was used to determine which factors listed in the following research questions and described by Bean and Metzner (1985) might have influence on an online student's intent to persist at a two-year technical college located in Wisconsin. "Persistence rates reveal a more complete understanding of how all learners are doing because the comparison is specific to the institution based on the total population of learners" (Stravredes, 2011, p. 22). The research explored the following questions.

Research Question 1

The first research question involved determining which factors, if any, influenced online students' intent to persist: Research Question 1: Can online program students' intent to persist be predicted from a combination of 1) GPA and the self-perceptions of, 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty? All participants completed the same survey instrument. The participants answered questions specific to academic advising, education usefulness, student satisfaction, goal commitment, academic stress, encouragement, financial certainty, and student persistence (see Appendix C). To answer this research question, the researcher utilized a Pearson correlation technique to investigate if there was any significant association between online students' intent to persist and each independent variable. In addition, multiple regression analysis was used to determine which factors internal and external to the college could predict online students' intent to persist.

Research Question 2

The second research question was similar to the first question, measuring the same variables, but was designed to investigate differences between face-to-face students' intent to persist compared to online students' intent to persist. Research Question 2: What differences, if any, exist between online program students' intent to persist and face-to-face students' intent to persist from a combination of, 1) GPA and the self-perceptions of 2) Academic advising concern (perception of advising quality), 3) Academic advising appointment (frequency of contact with advisor or counselor), 4) Education usefulness, 5) Student satisfaction, 6) Goal commitment, 7) Academic stress, 8) Outside encouragement from parents/spouse, 9) Outside encouragement from employer, 10) Outside encouragement from friends, and 11) Financial certainty?

The participants answered questions specific to academic advising, education usefulness, student satisfaction, goal commitment, academic stress, encouragement, financial certainty, and student persistence. All participants completed the same survey instrument used to answer Research Question 1 (see Appendix C). To answer this research question, three different types of statistical analysis were utilized. The first analysis consisted of a Pearson correlation technique to investigate if there were any significant associations between the intent to persist of face-to-face students and each independent variable. The second analysis consisted of a *t*-test to determine if there were any significant differences between face-to-face students and online students. In addition, multiple regression analysis was used to determine which factors internal and external to the college could predict face-to-face students' intent to persist.

Review of Demographics

The factors that define a nontraditional student can be difficult to explain; however, many authors have attempted to compose a definition (Bean & Metzner, 1983; Metzner, 1983; Tinto, 1975). Some of the suggested characteristics of a nontraditional student include attending school

part-time, currently working, having responsibilities at home, female gender, and being married.. The most obvious characteristic of a nontraditional student is age 25 or older (Bean & Metzner, 1983; Metzner, 1983; Tinto, 1975). Participants in this study most likely fell into the broad definition of nontraditional students—the researcher surveyed students enrolled at a two-year technical college where program offerings are directed to nontraditional students.

The following is a summary of the findings of this survey of nontraditional students at Moraine Park Technical College. Of the 114 participants of this study, 74 participants were online students, and the remaining 40 were face-to-face students. Both categories seemed to display characteristics that are common to nontraditional students, as described by Bean and Metzner (1985). The average age for both categories was 38. Eighty-one were female; 33 were male.

A higher percentage of online students, 56.8%, were married, compared to 47.5% that were not married. Sixty-five percent of online students were currently responsible for at least one child or relative living in the same household, compared to 60% of face-to-face students reporting no responsibility. Of the total number of participants, 55.3% were employed 30 or more hours per week. Of the online student participants, 72% were female, and 28% were male. The online student age range was 19 to 67 years of age, with an average age of 38.29. Almost half of the students, 45.9%, were employed 40 or more hours a week, and 56.8% were married. In addition, 64.86% reported that they had responsibilities for at least one child or relative at home.

The previous results were compared to traditional students. The average age of 38 was virtually the same as online students' age, and the age range was 19 to 66. Face-to-face students were less likely to be married, compared to online students. There was also a significant

difference in the number of hours worked; 27.5% of face-to-face students reported that they were employed 40 or more hours a week, versus 45.9% for online students.

Review of Results

In additional to college-controllable factors, individual characteristics of a student play a role in a student's decision to persist (Bean & Metzner, 1985). Defining the many factors that affect a student's intent to persist might seem overwhelming. According to Chase (2014), "Persistence in college could be a function of the inputs to the system in some cases, and the preparedness of the institution to manage the needs of those inputs could be insufficient" (p. 18).

In this study, various models that might illuminate the phenomenon of student persistence were examined. The independent variables studied were (a) GPA, (b) academic advising - concern, (c) academic advising – appointment (d) education usefulness, (e) student satisfaction, (f) goal commitment, (g) academic stress, (h) outside encouragement – parent/spouse, (i) outside encouragement – employer, (j) outside encouragement – friends, and (k) financial certainty. There were four regression models generated and documented in Chapter 4, two models per research question. The first model for each research question analyzed factors that can be considered both internal and external to the college's direct oversight. The second analysis in each question focused on factors that the college might be able to directly control, such as academic advising, education usefulness, and student satisfaction.

Research Question 1: Regressions 1 and 2—Online Students

Prior to the regression analysis, the researcher conducted a Pearson correlation analysis of each variable for the online student participants. The dependent variable of education usefulness had the strongest statistical significance. The weakest correlation with intent to persist was encouragement from friends. In addition to the Pearson correlations, a regression analysis was conducted to determine which dependent variables could best predict a student's

intent to persist. According to Gliner et al. (2009), multiple regression is used to check assumptions and then to evaluate the research variables, in a process in which two or more independent variables are considered with one dependent variable. The backward elimination process was utilized to determine which variables made a significant contribution to the model. The model included variables that can and cannot be controlled by the institution. For this model, the dependent variables of education usefulness, outside encouragement – employer, outside encouragement – friends, and financial certainty were identified as contributors. However, only education usefulness was statistically significant in predicting intent to persist. The model produced an adjusted R^2 value of .122, which means that 12.2% of the variance in online student participants' intent to persist was explained by educational usefulness, outside encouragement – employer, outside encouragement – friends, and financial certainty.

The second regression also included online students, but looked at variables that MPTC can control. The model produced an adjusted R^2 value of .098. This means that 9.8% of the variance of online students' intent to persist can be explained by academic advising – concern and education usefulness. As with the first regression, education usefulness was the only dependent variable that added statistical significance.

Research Question 2: Regressions 3 and 4—Traditional Students

The intent of Research Question 2 was to determine if differences existed between face-to-face students and online students on variables that could predict a student's intent to persist. The first test was designed to analyze the difference in means. Results indicated that academic stress showed the greatest mean difference between the two groups, with online students at 3.391 and face-to-face students at 2.875. The intent to persist was similar between the two groups, with face-to-face students 22.5% likely not to persist, compared to 24.3.67 % for online students;

however, there was a wider range in students indicating they would likely be persisting. Face-to-face students were found to be 80%, compared to online students at 75.6.5%.

In a similar manner to the approach used to analyze Research Question 1, with regard to online students, the researcher applied a Pearson correlation to assess face-to-face students' intent to persist. For online students, education usefulness was found to have the strongest correlation, whereas with face-to-face students, student satisfaction was the only variable with a strong correlation. In a *t*-test, the dependent variable of academic stress was significantly different between face-to-face and online students.

The first regression for this research question was conducted in two phases. The first phase included all dependent variables that can be controlled by MPTC; the second phase included variables that are outside the control of the institution. The entire variable set consisted of (a) GPA, (b) academic advising - concern, (c) academic advising – appointment (d) education usefulness, (e) student satisfaction, (f) goal commitment, (g) academic stress, (h) outside encouragement – parent/spouse, (i) outside encouragement – employer, (j) outside encouragement – friends, and (k) financial certainty. The backward elimination process was utilized to determine which variables made a significant contribution to the model. The model included financial certainty, student satisfaction, academic stress, and outside encouragement – parents/spouse. This means that 19.7 %, (R^2) of the variance of face-to-face students' intent to persist can explained by the variables used in the model. The only variable that added statistical significance to the prediction was student satisfaction.

Another regression was produced to examine variables that MPTC can control for face-to-face students. The variables initially utilized through a backward elimination process were academic advising – concern and student satisfaction. This model displayed an adjusted R^2 value of .217. This means that 21.7% of the variance of face-to-face students' intent to persist can be

explained by the controllable variables of academic advising – concern and student satisfaction. Both variables added statistical significance to the model.

The following figure is a visual display of the exploratory model that was developed utilizing the previous research questions. The variables that provide significance to a student's intent to persistence are contained within the model and the following figure.

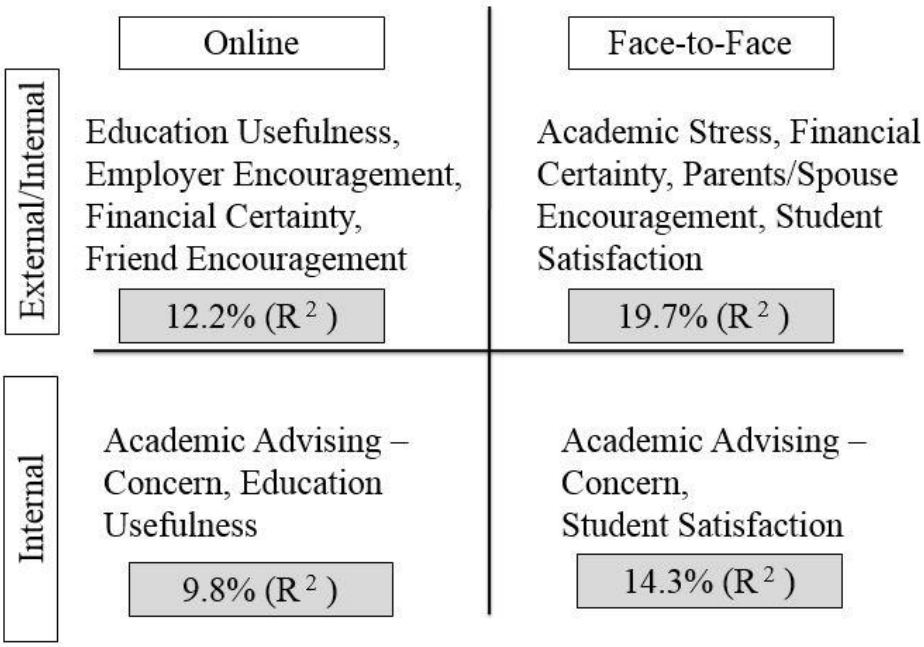

Figure 5. Hurtienne's non-traditional student persistence exploratory model

Discussion of Persistence and Internal College Factors

Education Usefulness

Knowles, Holton, and Swanson (2005) described needs of adult learners that might apply to online students. First, adults need to know they are learning something that will assist them when entering the workplace, being re-trained, or even receiving a promotion; specifically, if what they are learning going to have a positive impact on their future. If not, then why go through any level of increase stress to complete their education? In addition, adult learners prefer to learn expediently. They often approach learning as problem solving and will learn best

when the topic is of immediate value to themselves. Nontraditional students are more likely to persist if they feel their education will have a positive effect on career development (Bean & Metzner, 1985; Metzner & Bean, 1987). "Many online courses are designed based on the assumption that adults are self-directed; however, this not always the case" (Stravredes, 2011, p. 15).

It was not surprising to find that educational usefulness showed the strongest positive Pearson correlation for online students; however, it was surprising the same strength was not present for face-to-face students. Research shows not only do adult learners want to know why they are learning—they also prefer self-directed learning, and it is important to adults to use their own initiative in determining their own learning needs and goals (Knowles, Holton, & Swanson, 1998). By providing the chance for students to apply new skills in real situations, students can feel that the skills and knowledge obtained are useful, and thus they will be motivated to persist (Park & Choi, 2009). Education usefulness was an important variable in developing a predictive model for online students, including designing a model for variables that the college can influence; however, educational usefulness was not found to be equally important to face-to-face students and online students. This finding is contrary to Bean and Metzner's (1985) research and might be localized to MPTC.

Student Satisfaction

Researchers have found a positive correlation between an online student's persistence and the student's satisfaction with their coursework and instructors. Students who drop an online course often had a lower satisfaction level than adult students who persisted (Levy, 2007). Levy's comments are not supported by the findings in this study. Student satisfaction was found to have the strongest positive correlation with face-to-face students' intent to persist, but not with online students' intent to persist. In addition, student satisfaction was an important variable in

developing a predictive model for face-to-face students. Specifically, student satisfaction was a statistically significant predictor for face-to-face student persistence.

It is possible that student satisfaction and social integration (Tinto, 1975, 1993, 2000) may have a correlation. This study did not look at the relationship between the two, but it may help to explain the reason for this variable being a statistically significant predictor for face-to-face student persistence and not for the on-line students in this study. There are many factors that can impact a student's satisfaction at a college and more research is needed. In this study, this variable looked more globally at a student if they found satisfaction being a student. Such factors such as social integration, student life, faculty interaction, etc. all play a part into the perception of the student's satisfaction at a college.

Gibson (2010) wrote that the perceived quality of education, the acquired knowledge, and the educational experience are some of the most influential variables related to student satisfaction. Higher education should consider the priorities and learning styles preferred by nontraditional students. "Without understanding the priorities and satisfaction levels of students, institutions could address the wrong issues and ignore those that contribute to student persistence" (Chase, 2014, p. 10). It seems that student satisfaction is more likely to improve when there is a positive support structure (Willging & Johnson, 2009). Moving forward, continued research and knowledge gathering will need to be conducted to take a closer look to determine just how student satisfaction and student enjoyment may impact online student persistence; specifically if academic services or student services play a larger role in this initiative.

Academic Advising

There are many aspects to successful academic advising. This research project evaluated two aspects of academic advising services offered by the institutions. Online students may

experience isolation, increased social distance, and lack of structure (Jaggers, 2011). Academic advisors play an important role in persistence by establishing a professional relationship between the advisor and the advisee (Feghali, Zahib, & Hallal, 2011). Academic advisors can help make sure students are prepared for their next series of course work. "When institutions ensure students are prepared before starting their first online course and are supported academically and personally throughout their enrollment, institutions contribute substantially to the successful completion of online students' educational goals" (Crawley, 2012, p. 12).

According to the mean scores of both face-to-face and online students, participants felt that the academic advisors showed little or no concern for students. Even though this variable did not provide statistical significance to online or face-to-face predictive models, it did provide enough importance to be part of both predictive models that examined college-controllable variables. The compassion and support communicated from advisor to advisee could be improved through formal meetings, and ideally, online students should meet with an advisor to receive guidance before selecting a course (Simpson, 2003). "The quantity, timeliness, and quality of your interactions with learners are critical to helping them persist in the course and achieve the course outcome" (Stravredes, 2011, p. 151). This study did not find academic appointment as a major predictor for student persistence; the students from MPTC who participated in this study did not report difficulty in establishing a meeting with an academic advisor.

Discussion of Persistence and External College Factors

GPA

Researchers have found a significant relationship between student persistence and a student's cumulative grade point average (Davis, 2003). Tinto (1975) claimed that grade performance is "the single most important factor in predicting persistence in college" (p. 104).

In this study, the average GPA of online students was 3.566; the average of face-to-face students' GPA was slightly higher at 3.603; for both averages, there was not a significant correlation to student persistence. However, even though there was not a direct correlation with the participants of this study, it should be noted that Metzner & Bean (1987) found that nontraditional students with lower GPAs can still persist if they have support and encouragement. They also found certain psychological outcomes could compensate for lower GPA scores. Even though this study did not concentrate on academic incompatibility, there still might be a link between academic incompatibility and GPA, which then may affect student dropout rates (Pota-Merida, 2009). Future researchers should explore this topic further. However, this study did focus on educational usefulness and student satisfaction, both of which might be related in some form to academic incompatibility.

Goal Commitment

The variable of goal commitment was not found to be a significant contributing variable to this study. This finding may reflect the differences in each student's end goals. Some students might be course takers; others may seek to earn a certificate or even to complete a diploma or a degree. The level of commitment to their goals assists students in being successful (Metzner & Bean, 1987). Student motivation has a significant impact on student persistence and goal achievement (Castles, 2004; Osborn, 2001). This motivation may be the most important student trait leading to student success (Simpson, 2003). Students who believe they will be successful in a course are much more motivated to perform, and most likely will persist, compared to students with lower confidence (Pintrich, 2003). In this project, direct potential links between goal commitment and motivation were not studied; however, achieving education goals might be motivation for students to continue (Tinto, 1975, 1993).

Academic Stress

Academic stress was found to have a negative correlation to a student's intent to persist for both online students and face-to-face students. It was also found to be the only significantly different variable between face-to-face and online students (Cohen, 1998). Academic stress was also found to be an important variable in developing a predictive model for face-to-face students. This might be because both internal and external stress can influence students not to persist in their college education (Metzner & Bean, 1987). Further, students' emotional response to this stress has an influence on students' goal success (Stavredes, 2011). Surprisingly, academic stress did not play an important role in the predictive model for online student persistence developed in this study, despite Simpson's (2003) claim that the amount of course workload and the stress from the requirements might play a critical role in students' persistence. "The retention debate has tended to avoid questions of the difficulty of content and concepts in the course and concentrated on other possibilities for increasing retention such as course workload, course readability and course design and structure" (Simpson, 2003, p. 123).

In the future, MPTC administrators should seek to understand their students and to build a system to accommodate their needs (Bean & Metzner, 1985). Collegiate strategies should be implemented to help online learners overcome the potential stress, academic disappointment, and even anger (Simpson, 2012). MPTC academic advisors have the ability to stay in contact with high risk students to provide support services in the effort to aid in the successful completion of the students' educational goals. The college has a framework to aid with student success. Part of this framework includes rules and expectations that a student must follow to be successful (i.e. due dates, scoring rubrics, etc.). Faculties have the option of providing some flexibility to these rules depending on the situation, specifically environmental concerns. Currently, the college does not have a firm stance on just how much flexibility is appropriate. However, faculty should

be cautious in being too flexible, which can have a negative impact on persistence, while being too rigid may also produce a negative result (Stravredes, 2011).

Each student has their own set of barriers that they must overcome, whether they attend face-to-face or online programs. Moraine Park Technical College typically works with a larger non-traditional student population than their university partners. The levels and type of stress will not only vary between students, but also the type of higher education institution. An organization needs to look at ways that academic stress can be kept at a controllable level to have a positive effect on student persistence. This does not mean providing a completely open environment with open timelines for students to complete, it more likely means providing intervention strategies to assist students in dealing with the rigor of technical college and higher education requirements to keep each individual motivated to succeed. According to Bransford, Brown, and Crocking (1999), students' motivations will affect the amount of time they direct to their course work, and "a learner who is fully motivated will overcome barriers of situation and time, find ways of developing appropriate skills and be able to deal with the stress of study" (Simpson, 2012, p. 77).

Encouragement

For nontraditional students, encouragement plays an important role in persistence (Rice, 2007). "It appears that the most important single form of support for students is outside institutional control (and thus is possibly largely ignored by institutions)" (Simpson, 2012, p. 193). According to Bean and Metzner (1985), this encouragement can come from parents or from a spouse, an employer, or even from a close friend. "External encouragement is more important for nontraditional students because of their reference group of peers, friends, family, and employers" (Bean & Metzner, 1985, p. 506). Sometimes institutions see external encouragement as "a passing interest" (Simpson, 2012, p 192); however, Simpson (2013)

mentioned evidence that students rate outside encouragement higher than they rate institutional support.

Employer and friend encouragement contributed to the predictive model for online students, and parent/spouse encouragement contributed to the predictive model for face-to-face students. However, even though these variables contributed to the predictive models, they were not statistically significant. These contributing predictive variables support the assumption that nontraditional students experience both internal and external stress and that having a support structure helps students continue their education.

Students can seek such support from several external locations. According to Holder (2007), a student with a family that emotionally supports his or her educational goals will be more likely to persist than will a student with a family displaying a low level of support for education. Holder (2007) also found that a student who is employed by an employer that provides a flexible environment for education is more likely to persist. This flexibility at work may include a flexible work schedule or time during a work shift to work on academic requirements. Employer flexibility is important—approximately 75% of students attending college are also working (Chaloux, 2010).

Financial Certainty

A major challenge students face in persisting and meeting their educational goal is finding the funds to pay for the education (Chaloux, 2010). "Financial planning for college students has never been more important. Because of the gap between the typical student's ability to pay and the cost of attending college, many students leverage college with a substantial amount of debt" (Crawley, 2012, p. 96). It was not surprising that participants in this study had fairly similar views on financial certainty. Both face-to-face and online students' scores fell between *uncertain* and *fairly certain* in regard to finding enough money to go to school. A mean

score of 3.76 showed no difference in financial certainty between online students and face-to-face students. In the development of a predictive model for student persistence, the variable of financial certainty was included for both face-to-face and online students.

Students seem to be aware of the financial impact of attending school and the importance of having funds available for the next term. MPTC should continue to provide a financial aid orientation and additional services to new students to aid the student in making a more informed financial decision regarding school. "Institutions that offer financial planning services provide information about core issues: balancing work and school, contacting a financial planning professional, saving money, budgeting and record keeping, and tracking credit cards and credit scores" (Crawley, 2012, p. 96). According to York and Longden (2004), it is a major life challenge for students to choose between education and the potential of accruing debt.

Limitations of the Study

In addition to the delimitations and limitations mentioned in Chapter 1, a few additional factors could make the validity of this research vulnerable. Extreme caution should be used when generalizing the findings found within this study because of the following: (a) the study was limited to students attending a technical college in Wisconsin, (b) the data was collected during a three-week time span, and (c) participants were not allowed to elaborate or comment on their answers.

Recommendations for Further Study

There are several areas for future research. The results indicate a number of research areas could benefit from an increase in understanding of the relationships between academic advising, education usefulness, course satisfaction, goal commitment, academic stress, encouragement, financial certainty, and student persistence. "Due to the complexity of student persistence in adult online programs, as well as the sudden growth in online learning, it is critical

for administrators to understand more fully why a student chooses to persist or drop out" (Chase, 2014, p. 17). Higher education should understand the diversity of online learners and find methods to help them persist (Stravredes, 2011). The following recommendations for further study are based on the findings of this research study.

Participation in this research was voluntary. Of the total MPTC student population, 114 people participated in the survey. Future researchers might consider increasing the sample size and the scope of the population. The sample size in a research project is an important aspect of empirical studies that are designed to make inferences or correlations regarding a group. Increasing the sample size would increase the likelihood the data would be normally distributed and representative of the general population.

Broadening the variables and definitions may provide new results. This study analyzed and defined variables that were described by Bean and Metzner (1985). The researcher did not consider the impact of student participation through online orientation. However, Ludwig-Hardman and Dunlap (2003) found formal online orientations is a support service colleges can provide to help online students mitigate their isolation, avoid a possible lack of self-direction, and improve motivation.

Methodology

This quantitative study represented only a "snapshot" in time. Future researchers studying student persistence might benefit from a longitudinal study of nontraditional online students. Such a study could add knowledge to the field of higher education by determining which factors affect student persistence. This type of study might allow college administrators to determine if their current allocations of college resources make any significant differences in student persistence. In addition to quantitative approaches, an emergent qualitative study might help educators to discover new factors that current researchers have not yet discovered. Case

studies might help to reveal the challenges a nontraditional student experiences at a two-year college. Future researchers should consider a phenomenological study where the researcher can describe the "lived experience" of an online student to gain a more in-depth insight into the experience of a student completing their course work through an online format.

Moraine Park Technical College does not offer massive open online courses (MOOC) and such student persistence and/or retention in a MOOC was not researched in this study. However, the researcher recognizes that MOOCs are offered at other higher education institutions. MOOCs are web-based courses that were developed with the intention of being delivered online to a large number of participants (Pappano, 2012). A study conducted by the University of Pennsylvania reported that retention rates in MOOCs are as low at 4% and that 80% of those registered in a MOOC already have a higher education (Perne et al., 2013). Additional research may want to look at technical colleges that offer MOOCs and their correlation to student success.

Program Analysis

Previous research of students at two-year colleges has often focused on face-to-face students or online students in general. This research study was designed to examine a cluster of programs offered at a two-year technical college under the umbrella of its defined FLEx degrees. Future researchers may want to explore student persistence on a program-by-program basis to determine if there are different factors that affect persistence. For example, are there differences between online accounting students versus online informational technology (Web designer or Web developer) programs? It would also be interesting to know if there are differences in intent to persist between students working toward their certificates, compared to students seeking to earn a diploma or an Associate's degree.

Curriculum Development

Future researchers might want to investigate the impact of curriculum development on student persistence. This research project did not specifically focus on curriculum development; however, it did include educational usefulness. Educational usefulness reflects students' perceived ability to gain employment after graduation. Wisconsin Technical College System schools are directed to work through advisory committees and with local employers to ensure curriculum is relevant to employers' needs. In addition, researchers have pointed out that adult learners prefer to approach learning as a problem solving challenge and want to know that what they are learning is important to their career development (Bean & Metzner, 1985; Knowles, Holton, & Swanson, 1998, 2005). According to Smith (2008), "Most effective learning environments are those that are problem based and involve student in four distinct phases of learning" (p. 7). Those four phases of learning are activation or prior experience, demonstration of skills, application of skills, and integration of these skills into real-world activities.

Future researchers should look closer at which elements of online curriculum design may have an impact on student persistence, course completion, and student retention; specifically looking at areas such as learning activities and assessments. This research showed that there are different variables that play a part in student persistence between online and face-to-face non-traditional students. Can the same hold true for learning activities and assessment? Can we expect a student to be successful in an online course when they are participating in course activities that were developed for a face-to-face course offering? In addition, what role does the student's perception of education usefulness play a part in curriculum development of online courses, and how does a college explain the potential impact of completing a course or a degree online to the student? The technical college utilizes industry-validated curriculum for the

creation of programs. It would be interesting to see how industry validated curriculum may impact students' perception of educational usefulness.

Based on current and future research, curriculum developers for online programs might be required to meet different standards than would developers of a more traditional face-to-face course. Research and evaluation into groups such as Quality Matters or even Online Learning Consortium may aid MPTC in the development of these standards. A faculty members' role in online education and curriculum development "is to make sure the information is presented in a way that is relevant, understandable, memorable, and useful to the student (Smith, 2008, p 15). The information should be "short, directed learning segments – chunk-ability, ability to repeat and review content – repeat-ability, ability to stop and resume without having to start all over – pause-ability, and clear, direct instructions – understandability" (Smith, 2008, p. 14-15).

Implications for Practice

For decades, higher education administrators have looked for ways to improve student persistence. Technology has offered a new avenue for students to complete degrees; however, the discussion about assisting students to succeed in their educational goals remains active. The support strategies for nontraditional students are different from the support strategies for traditional students (Bean & Metzner, 1985). According to Crawley (2012), a "nontraditional online student may need and want services different from those preferred by the traditional 18-22-year-old students who want a typical residential campus experience" (p. 15).

While conducting a review of literature for this project the researcher found many studies conducted on the topic of student success, retention, persistence, etc. in online education. Each one of these studies looked at a small piece of the larger whole. Many of these studies seemed to focus their intent towards a traditional four-year education system versus a technical college educational system. This study is more unique as the research population was focused on a

technical college consisting of non-traditional students. As the base of knowledge increases regarding online student success, so must the factors of implications to specific types of higher education. Moraine Park Technical College has several differences from their four-year college university partners and just one of those major differences is the way Moraine Park Technical College develops curriculum outcomes. Curriculum at Moraine Park Technical College is developed using a performance based completion method. This style alone may cause an impact difference between four-year college students and technical college students.

When working with adult students, educational persistence should be considered a multicausal problem that requires multiple partial solutions (Woodley, 1987). "Students enrolled in online programs do not drop out for one specific reason, and as such, the theories regarding online student persistence link to student satisfaction are diverse and cover a variety of areas" (Chase, 2014, p. 27). For solutions to be enacted additional research needs to be conducted and administrators need to be "armed with information about online students' priorities and satisfaction levels, institutions can make adjustments and address issues in problem areas that have the greatest impact on the students' experience, thereby potentially resulting in higher levels of persistence" (Chase, 2014, p. 10).

Many internal and external factors compete with students being successful at a two-year college (Cohen, 2003). "With the number of online learners growing year after year, persistence is a pressing concern" (Chase, 2014, p. 20). Therefore, it is important that higher education further research and define all factors that affect nontraditional online student persistence at a two-year college, in the hopes of developing procedures and practices to increase student success. The steps, research, and development of operational procedures may enable institutions to determine more accurately what resources are required to affect persistence.

The amount of debt a student incurs through their studies can impact their life long after exiting school. Higher education institutions should have a positive impact on the amount of debt that college graduates are experiencing in the United States by studying the factors that impact student persistence and then developing effective response strategies to aid student success. If institutions are able to improve their education process to shorten the amount of time needed to successfully complete a program we should also see some sort of impact to the amount of college debit incurred by the student. In addition, if education institutions are able to keep students in school until they reach their educational goals they should see higher FTE numbers, thus having generating additional revenue through course registration. In addition, students that complete their educational goals will be more skilled for the workforce than they were prior to schooling. These skills will hopefully lead individuals to a more secure financial future for their family and community.

Implications for Human Resource Development

According to Swanson and Holton (2009), the field of Human Resource Development (HRD) focuses on the resource that humans are able to bring to organizational system success, as well as employees' personal success. Human resource development can be defined as "the process of developing and unleashing expertise for the purpose of improving individual, team, work process, and organizational system performance" (Swanson & Holton, 2009, p. 4).

HRD is a discipline rooted in multiple theories. However, although HRD utilizes many theories, not all these theories are foundational or core to HRD (Swanson & Holton, 2009, p. 128). HRD researchers believe that "arguments can be made that system theory is core to HRD" (Swanson & Holton, 2009, p. 76). "System theory is fundamentally a theory concerned with their interdependent relationships" (Swanson & Holton, 2009, p. 128). In system theory, researchers are interested in "understanding systems with a particular emphasis on the

interdependencies and dynamics of the parts, how they are organized, and how they work together to produce results" (Swanson & Holton, 2009, p. 128). In system theory, human resource development professionals focus on understanding the system with the intention of improving it (Swanson & Holton, 2009).

Organizational system theory can be described by relating it to the systems found in the human body. For example, the respiratory, cardio-vascular, and nervous systems are separate from each other, but each system works together to sustain life. Without one system, it is difficult if not impossible to survive. For HRD, a system is "a collection of elements where the performance of the whole is affected by every one of the parts and the way that any part affects the whole depends on what at least one other part is doing" (Swanson & Holton, 2009, p. 130). Higher education administrators, faculty, advisors, recruiters, information technology staff, and other employees are part of one organization, but inhabit separate systems within one organization. Each system in a college organization plays a part in the success of a student. Bickel and Stroh (2010) stated, "Organizations are perfectly structured to get the results that they get" (p. 6). If an organization wants to generate effective results, it should examine its structure and operation (Bickel & Stroh, 2010).

Conclusion

It is highly recommended that Moraine Park Technical College continue to research and support initiatives designed to improve online student persistence and educational effectiveness. MPTC administrators, as well as the administrators at other institutions, most likely realize that "no retention strategy is likely to fit all students and all circumstances at all times" (Simpson, 2003, p. 23). If institution administrators knew which students would be most likely to drop out, they could develop strategies to provide support. The same is true if administrators knew why students dropped out of online classes. The answers could refine practices to affect dropout

rates. However, Woodley (1987) noted that the reasons why a student drops out are multicausal and require multiple partial solutions.

The goal of this research study was to add to the body of knowledge of nontraditional student persistence, specifically for students attending online education. The foundational principles researched in the conceptual model of nontraditional student attrition (Bean & Metzner, 1985) focused on which variables could affect student persistence. Metzner (1987) thought nontraditional students have different struggles, compared to the struggles experienced by traditional college students.

With increases in online enrollment expected to continue (Chase, 2014), academic leaders are starting to acknowledge differences between nontraditional and traditional students entering their colleges (Allen & Seaman, 2013). Traditional higher education in the United States was designed around the needs of 18- to 21-year-old students (Price & Backer, 2012). When addressing the concerns of student persistence and educational continuance, administrators should look toward a multifocal approach, because there is typically not just one factor that contributes to students not continuing their education.

Some factors that affect student persistence might not be under the direct control of the institution—yet intuitions should still strive to find ways for students to persist (Simpson, 2012). However, any changes implemented to improve student persistence will likely involve changes in the institution and will therefore mostly likely be resisted "both consciously and unconsciously" (Simpson, 2013, p. 131). The rationale for any institutional change should be supported by empirical evidence and data relevant to the specific institution. This could be more difficult to accomplish than one might expect—national statistics on the topic are limited. "Individual schools do measure online course retention and program retention. Because each

institution is unique, findings are difficult to generalize beyond the single institution" (Crawley, 2012, p. 180).

In this study, not all variables examined showed a statistically significant relationship to persistence. Despite the findings in this study and despite the documentation in literature, further attempts should be made to explore and investigate the connections between common variables that may affect nontraditional students' intent to persist. Through continued research and additions to the body of knowledge, educational administrators, staff, and faculty will be better prepared to help students in meeting their educational goals through the development of institutional policies, services, and curricula designed for future online students.

These findings imply a difference exists between factors that cause an MPTC online student to persist versus factors that influence a MPTC face-to-face student to persist. Students' concerns regarding academic advising and education usefulness play a part in students' persistence and are controllable by the institution. Even though MPTC has an academic advising process in place, in addition to processes that contribute to development of curricula useful for employment, the institution must still strive for improvement and refinement.

Research regarding student retention has traditionally concentrated on the analyses of student attrition behaviors, persistence patterns, graduation rates, and psychological and social dynamics (IRP, 2003). However, other internal and external variables can affect student success and with the diversity of characteristics and needs that make up the population of online college students, it is critical to understand individual online students and develop approaches that support them to persist (Stravredes, 2011). This may mean that higher education institutions might consider developing a plan of support for online students and that the type of institutional approach and assistance may differ from student to student. As MPTC develops new research projects, the administrators will want to find a way to disseminate new insights to internal and

external stakeholders of online education. In summary, HRD practitioners, professionals, and academia are "only as strong as the research, theory, and models that are available to guide their practice" (Short, Keefer, & Stone, 2009, p. 422).

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APPENDICES

APPENDIX A

Letter to Participant

To: [Email]
From: "MPTCresearch@morainepark.edu via surveymonkey.com" <member@surveymonkey.com>

Subject: Response Requested: Student Persistence Survey
Body: Dear Participant,

My name is Matt Hurtienne and I am a researcher from Colorado State University in the School of Education department. We are conducting a research study on student persistence at a Wisconsin Technical College. The title of our project is Student Persistence in On-line at a Wisconsin Technical College. The Principal Investigator is Gene Gloeckner, Ph.D from the School of Education and the Co-Principal Investigator is Matthew Hurtienne.

We would like you to take an anonymous online survey. Participation will take approximately 10 to 15 minutes. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

The information you provide on this survey will be confidential. If you choose to participate, the Office of Institutional Research will obtain your Grade Point Average data and will link it to your survey information. The information will be given to the researchers without your name attached. Your survey response and GPA information will be listed in a manner such that no one will be able to identify you, or know whether you participated in this study or not. Nothing you list on the questionnaire will in any way influence your present or future status at Moraine Park Technical College. Should the data be published, no individual information will be disclosed.

We will not collect your name or personal identifiers. When we report and share the data to others, we will combine the data from all participants. While there are no direct benefits to you, we hope to gain more knowledge on factors that allow students to persist at a Wisconsin Technical College.

There are no known risks. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

To indicate your consent to participate in this research and for the Office of Institutional Research and the researchers to obtain your Grade Point Average (GPA), please click the following link to continue on to the survey:
http://www.surveymonkey.com/s.aspx

Please complete the evaluation by 5/31/2013.

APPENDIX B

Permission to Use the Survey

Matthew Hurtienne

From: Metzner, Barbara S. <bmetzner@iupui.edu>
Sent: Tuesday, April 30, 2013 1:21 PM
To: Matthew Hurtienne
Subject: Copyright Release

Mr. Matthew W. Hurtienne
700 Gould Street
Beaver Dam WI 53916

Dear Mr. Hurtienne:

Thank you for your recent email requesting a copy of the instrument that I used to gather data for validating the Bean and Metzner model of student attrition. I have sent you a copy of the survey and am pleased to grant permission for you to use any part of this questionnaire for your own quantitative research in your doctoral program.

Best wishes for success with your study.

Sincerely,

Barbara S. Metzner
741 Walkabout Circle West
Carmel IN 46032

bmetzner@iupui.edu

APPENDIX C

Survey Instrument

Student Persistance Evaluation

Welcome to the Student Persistence Evaluation

You are being invited to participate in a research study which compares perceptions of online and face-to-face students at Moraine Park Technical College (MPTC). Your individual response will remain confidential and will be used only in a summary of all responses. When the term "Last Semester" is used with the evaluation, refer to the statement as the last semester you were enrolled in courses at the college.

1. What is your gender? (select one response)

◯ Female ◯ Male

2. What was your age at your last birthday? (please specify)

3. What is your present marital status? (select one response)

◯ Married ◯ Unmarried

4. To what extent would you say your high school program of study was college preparatory? (select one)

◯ Not at all ◯ To a small extent ◯ To some extent ◯ To a great extent ◯ To a very great extent

5. How many credits were you enrolled in last semester? (specify below)

6. How many hours per week were you employed last semester? (select one response)

◯ Not employed ◯ 1-19 hours ◯ 20-24 hours ◯ 25-29 hours ◯ 30-39 hours ◯ 40 or more hours

7. How many children or relatives (not including your spouse) are living with you for whom you are responsible? (select one response)

◯ None ◯ One ◯ Two ◯ Three ◯ More than three

8. About how many hours each week did you spend studying outside of class last semester? Round to the nearest whole number. (please specify)

9. How many college student organizations do you presently belong to? (please specify)

Student Persistance Evaluation

10. Select only one response per statement below:

	None	One	Two	Three	Four	Five or more
How many times last semester did you communicate with an Academic Advisor or Academic Counselor?	◯	◯	◯	◯	◯	◯
How many of your best friends presently attend MPTC?	◯	◯	◯	◯	◯	◯
How many times last semester did you communicate with your instructors outside of the classroom?	◯	◯	◯	◯	◯	◯

11. What is your highest educational goal? (select one response)

◯ I don't have one ◯ Some college work ◯ Associate Degree ◯ Bachelor's Degree ◯ Master's Degree ◯ Doctorate

12. Select only one response per statement below:

	Not at all	To a small extent	To some extent	To a great extent	To a very great extent
To what extent were you able to take the courses you want at MPTC?	◯	◯	◯	◯	◯
To what extent has it been difficult for you to get an Academic Advising appointment?	◯	◯	◯	◯	◯
To what extent do you have good study skills?	◯	◯	◯	◯	◯
To what extent has your Academic Advisor shown concern for you as an individual?	◯	◯	◯	◯	◯
To what extend do you feel stress from the amount of time requested for school?	◯	◯	◯	◯	◯
To what extent do your parents or spouse encourage you to continue your studies at MPTC? (Use spouse if married)	◯	◯	◯	◯	◯
To what extent does your employer encourage you to continue your studies at MPTC?	◯	◯	◯	◯	◯
To what extent do your close friends encourage you to continue your studies at MPTC?	◯	◯	◯	◯	◯

13. Please indicate your level of agreement to the following statement. I find real enjoyment being a student.

◯ Strongly Disagree ◯ Disagree ◯ Neither Agree nor Disagree ◯ Agree ◯ Strongly Agree

14. Select only one response per statement below:

	Extremely Unimportant	Very Unimportant	Neither Unimportant nor Important	Very Important	Extremely Important
How important is it to you to attend college?	◯	◯	◯	◯	◯
How important is it to you to complete a college degree?	◯	◯	◯	◯	◯
How important is it to you to form close personal friendships with other MPTC students?	◯	◯	◯	◯	◯

Student Persistance Evaluation

15. Select only one response per statement below:

	Little or No Use	Some Use	Quite a Bit of Use	A great Deal of Use	A Very Great Deal of Use
How useful do you think your education at MPTC will be for getting future employment?	◯	◯	◯	◯	◯
How useful do you think your education at MPTC will be for getting work you would really like?	◯	◯	◯	◯	◯
How useful do you think your education at MPTC will be for getting a well-paying job?	◯	◯	◯	◯	◯

16. Select only one response per statement below:

	Very Uncertain	Fairly Uncertain	Neither Certain nor Uncertain	Fairly Certain	Very Certain
How certain are you that you can find the money to go to school next semester?	◯	◯	◯	◯	◯
How certain are you of your career plans?	◯	◯	◯	◯	◯

17. Select only one response per statement below:

	Definitely No	Very Slight Chance	Uncertain, Probably Not	Uncertain, Probably Yes	Quite a Good Chance	Definitely Yes
Do you expect to be enrolled in courses at MPTC next semester?	◯	◯	◯	◯	◯	◯
Do you expect to graduate from MPTC?	◯	◯	◯	◯	◯	◯

Thank you!

Thank you for participating in this evaluation. Your individual response will remain confidential.

APPENDIX D

IRB Exempt Letters

Colorado State University

Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX (970) 491-2293

Date: May 6, 2013

To: Dr. Gene Gloeckner, Education
Matthew Hurtienne, Education

Janell Barker

From: Janell Barker, IRB Coordinator

Re: Student Persistence in On-Line Learning

IRB ID: 065-14H **Review Date:** May 6, 2013

The Institutional Review Board (IRB) Coordinator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2): Research involving the use of educational tests,....survey procedures, interview procedures or observation of public behavior, unless: a) **information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects.**

The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the Exempt application**, including obtaining and documenting (signed) informed consent if stated in your application.
- **Any modification of this research should be submitted to the IRB Coordinator through an email prior to implementing any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB protocol will need to be submitted and approved before proceeding with data collection.
- **Please notify the IRB Coordinator if any problems or complaints of the research occur.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a similar study in the future.

From: Felton-Noyle,Tammy
To: Matthew Hurtienne
Subject: RE: Exemption Form Documentation
Date: Monday, February 16, 2015 3:30:50 PM

Afternoon Matt;

Thank you for contacting us. Exempt approvals are active for 3 years, so it appears that your protocol will "close" 5/6/2016. Our office sends out notices to you well in advance to minimize any unnecessary closures, though. If you are modifying your exemption at all, you can outline what changes you intend to make, otherwise you are okay to continue per the approved exempt protocol for a little over a year.

If you have any additional questions, feel free to contact me!

Best.

At your service,

Tammy L. Felton-Noyle, BA, CIP
Research Integrity and Compliance Review Office
Colorado State University
Phone: (970) 491-1655
Fax: (970) 491-2293
Website: http://ricro.colostate.edu

Online Protocol-Submission System: https://csu.keyusa.net
Twitter: @colostate_ricro

Please reference your protocol number in the subject line, thank you.