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Retention and Persistence in Higher Education: An Exploratory Study of Risk Factors and Milestones Impacting Second Semester Retention of Freshmen Students

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Retention and Persistence in Higher Education: An Exploratory Study of Risk Factors
and Milestones Impacting Second Semester Retention of Freshmen Students

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Abstract

This study investigated individual factors and milestones which may assist institutions in predicting first to second semester retention rates of freshmen students. While the data examined were limited to the student population enrolled at a rural community college, implications from the study could be meaningful for all institutions of higher education. The investigators examined extant data to determine whether exam scores, graduating high school GPAs/rank, and Pell Grant eligibility could be used as predictor variables in identifying students at-risk of leaving the institution. In addition, key milestones (time of registration, participation in a first year experience (FYE) course, declaring a major) were also examined to determine whether these events predicted retention. The study utilized a mixed methods approach analyzing quantitative data through linear regressions and Chi Squares that were obtained through agency records and closed-ended survey questions, while qualitative data was acquired through open-ended survey questions. Participants included 97 first-time freshmen enrolled at a southwest Missouri rural community college during the Fall 2015 semester and 1,150 students enrolled at the college between Fall 2011 and Fall 2013. The Fall 2015 first-time freshmen were asked to complete an online 24-item survey designed to extract both quantitative and qualitative data. The researchers found that ACT and Compass scores (with the exception of Compass Writing), and High School GPA/rank were strong predictors in determining first to second semester retention; however Pell Grant eligibility was found to be insignificant. Although the key milestones of time of registration, participation in a FYE course, and declaring a major were found to be insignificant in predicting retention rates of freshmen students, the

qualitative data gathered suggested that the examined milestones had merit for a retention model.

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Tyson Holder

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Chapter I

Introduction

Tracking successful student retention to graduation has been an important element for institutions of higher education for nearly 50 years (Bloom and Webster, 1960; Ikenberry, 1961), but despite the many student success intervention programs, resources, and funding allocated to create interventions, six-year graduation rates have changed very little (Noel-Levitz, 2015). Historically, multiple factors such as the level of students' college preparation (Conley, 2005), the availability of student support services (Brock, 2010), and the degree of student engagement in meaningful educational activities (Astin, 1999) have been identified as key areas for addressing retention initiatives. While these factors have been shown to play a positive role in supporting student retention, the six-year college student retention rate has not changed appreciably across several decades of time. According to Habley, Bloom and Robbins (2012), first to second semester college student retention rates from 1975 to 2010 have remained relatively stagnant over the past three decades. Historical trends for community college student retention in particular reveal the shortfall in retaining students. According to the American College Testing summary tables (2014), almost one-half of enrolled students drop out of two-year public institutions between their first and second semester of college.

Importance of Increasing Retention Rates among Higher Education Institutions

Because state and federal policy makers have called for stringent student learning outcome assessments and the need for colleges to develop strong evaluation practices in order to demonstrate overall educational effectiveness, establishing strong retention and graduation rates remain crucial for institutions of higher education (Cook & Pullaro,

2010). The effect of year-to-year retention to graduation with regard to stability of student enrollments, institutional budgets, and public perception of quality dictates the need for institutional leaders to work toward increasing retention rates (Braxton, Doyle, Hartley, Hirschy, Jones, & McLendon, 2014). Despite the positive public metrics of high student retention rates for institutions of higher education, a strategic focus on student success and the benefits derived from persistence to college graduation may make the strongest case for college leaders to improve their institution's retention rates.

Benefits of Obtaining a College Degree

Individuals who complete a college degree have higher lifetime earnings, a better understanding of civic issues, and a general higher quality of life. According to the College Board (2013), "The financial return associated with college credentials and the gaps in earnings by education level have increased over time" (p. 5). The Lumina Foundation (2014) reported that individuals with a bachelor's degree earn 84% more than those without a degree over their lifetime. Baum, Ma and Peysa (2013) noted that the evidence still strongly supports the conclusion that the long-term benefits of investing in postsecondary education exceed the costs for individual students who often bear the majority of the expense. Their data showed that traditional-age students who completed an Associate's degree earned a higher salary to compensate for the years they were unemployed when they reached age 34 and those who completed a Bachelor's degree earned a higher salary to compensate for the years they were unemployed when they reached age 36 (p. 8).

In addition to higher salary, college graduates also have a lower percentage of unemployment than those who only held a high school diploma. In 2012, the

unemployment rate for individuals aged 25-34 with a Bachelor's degree was 7.1 percentage points lower than individuals who earned a high school diploma, and 4.0 percentage points lower for those with an Associate's degree (College Board, 2012). Additionally, there are also lucrative social and community outcomes realized through lower crime rates among those holding a bachelor's degree, a higher tax pool, and U.S. global competitiveness. For these reasons, higher education remains the best avenue to prosperity, opportunity, and a stronger nation (Lumina Foundation, 2005).

Why the Issue of Retention Remains Prevalent

Given the extended efforts devoted to improving student retention rates at many postsecondary institutions across the country, what are the reasons unacceptably high numbers of students leave their academic programs at these institutions prior to degree completion? Student retention has been one of the most prominent concerns in higher education for decades. Despite the number of programs developed and resources expended, issues concerning retention remain prevalent for a host of reasons, beginning with inconsistent definitions of retention and attrition, as well as what specific variables should be measured and in what manner (Center for the Study of College Student Retention, retrieved from www.ccsr.org/retention_issues_definitions.html). There are also a variety of institutional and student concerns regarding retention challenges, including a lack of collaboration among academic divisions or departments within postsecondary institutions, diminishing resources and ineffective training for institutional staff and faculty members (Barr and McClellan, 2011). Student readiness for college-level coursework, accurate initial course placement, and the availability of student financial aid can also play a major role in a student's ability to persist (Lotowski,

Robbins, and North, 2004). Although institutions may offer a variety of supportive programs, these services have proven to be insufficient, as students may not be aware of the services provided or they may be hesitant to participate (Tinto, 2012). Finally, because of the unique culture of community colleges and the open admissions process, two-year institutions often face additional challenges when attempting to increase student retention rates (Council of Graduate Schools, 2012).

Inconsistent Definitions of Retention and Attrition

Pascarella and Terenzini (1991, 2005) stated that faculty members on campuses with increased retention outcomes utilized effective educational practices. Both the terms retention and persistence have been used by many authors as if they were interchangeable, but across stakeholders the terms may carry quite different meanings. According to Hagedorn (2005), retention is a measure of success considered at the institutional level, while persistence is an individual or student level measure of success that may take place across several institutions. The Integrated Postsecondary Education Data System, also known as IPEDS, is nationally recognized as a primary source for defining retention (Noel Levitz, 2008). According to IPEDS (2015), retention is defined as:

a measure of the rate at which students persist in their education program at an institution, expressed as a percentage. For four-year institutions, this is the percentage of first-time bachelor's (or equivalent) degree undergraduates from the previous fall who are again enrolled in the current fall. For all other institutions this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by

the current fall (retrieved from

<http://nces.ed.gov/ipeds/glossary/index.asp?id=772>).

Noel Levitz serves as one of the most noted educational consultants in the world, bringing together unchallenged expertise in research and best practices to address college enrollment challenges (Levitz, 1998; 2015). According to Noel Levitz (2008), persistence is defined as the following: “enrollment headcount of any cohort compared to its headcount on its initial official census date” (p.3). Persistence is generally measured by determining the number of students who persist each semester or term to completion. While both definitions broadly refer contextually to the idea of students persisting to degree completion, the way retention is defined by the federal government attempts to measure a multi-linear process with a one-dimensional linear formula (Habley, Bloom & Robbins, 2012).

The federal government has established one standard national retention definition that must be reported annually by all colleges which tracks full-time students in a degree program to determine if the student has completed the program. In addition, institutions are required to report their first-year retention rates annually to the Integrated Postsecondary Education Data System (IPEDS) which measures the percentage of first-year students who persisted in or completed their educational program one year later. One major issue is that these definitions do not include students who may have initially enrolled as part-time students and transitioned to full-time status, or those who intentionally attend part-time, which in many cases is over 50% of the population of the community college student body (Center for the Study of College Student Retention, retrieved from www.ccsr.org/retention_issues_definitions.html). The federal definition

also excludes students who may be attending college merely to improve their job skills or because of an interest in a hobby or personal development, which is another large demographic at community colleges.

Just as the task of measuring retention remains a complex process, understanding attrition, whether forced or voluntary, is also a multi-faceted phenomenon. According to the American Institutes of Research (2012), attrition is defined as follows:

the departure from all forms of higher education prior to completion of a degree or other credential. Attrition can involve a high school graduate who drops out before receiving an associate's degree, or an associate's degree or certificate completer graduate who continues to take courses but does not finish an additional credential (Ascend Learning, p.2).

Studying attrition along with retention is an economic priority for all institutions due to the overall costs of formal education. There is an emphasis in the research literature on several variables which may contribute to a student's withdrawal from an institution that transcend academics, including financial difficulties/challenges, personal or family obligations, or the completion of a personal goal. As Sheldon (1982) stated, attrition can be considered positive, (students left after meeting their objectives), neutral, (job or scheduling conflict), or negative, (students are unprepared or insufficiently motivated). Therefore, the mere use of dropout rates to explain the extent of attrition at the community college can become convoluted, (ERIC digest.org, 1984), especially if the large demographic of non-traditional students attending community colleges and their varied reasons for attendance is considered.

Confounding the use of these formal definitions in practical terms, local institutional stakeholders may also have varying definitions of what retention means in their particular circumstances. Some departments within the college may define retention as a student's ability to perform at the level required in order to be successful while other departments view the definition as the ability to persist to degree completion. And both of these definitions ignore the fact that students attend college for a variety of reasons, including many who do so with no intention of ever acquiring a degree or other certification. Variations in the definition of retention often results in conflicting intra-institutional views and practices. Progress could be more accelerated if all stakeholders were in agreement when specific retention definitions were determined to assist with developing compatible intervention strategies. Institutions that do not clearly identify those students who are not pursuing a traditional higher education run the risk of misstating the magnitude of their retention issues, resulting in greater resource expenditures and added frustration among all institutional stakeholders (Center for the Study of College Student Retention, retrieved from www.ccsr.org/retention_issues_definitions.html).

Institutional Challenges Involving Retention

Whether individual student goals are vocational, personal or educational, institutions of higher education play a critical role in helping students achieve their objectives. Despite their employees' best efforts, a lack of communication between departments is one of the primary reasons why retention remains a hotly debated issue in higher education. Oftentimes, academic and student affairs departments are viewed as separate entities with separate functions and roles, resulting in limited interaction

between the two divisions. Ultimately, this separation may negatively impact retention due to the availability of competing services (i.e. tutoring, supplemental instruction, etc.), limited sharing of expertise across programs and departments, and ineffective institutional policies (Bailey and Alfonso, 2005).

In addition to a lack of communication, institutions also confront the challenge of limited resources. The recent emphasis on performance-based funding has held higher education administrators' accountable to a higher standard based on a business model (Barr and McClellan, 2011). Institutions are required to show that the services they provide to students are producing results, encouraging institutions to become more effective. The issue of limited resources is complicated further by recent reductions to higher education funding. In order to provide the same quality of services with limited funding, shared services across departments have become the norm (Barr and McClellan, 2011). This consolidation of services increases individual workloads, negatively impacting the amount of time that faculty, staff and administrators are able to devote to various responsibilities, consequently there is an increase in the likelihood that ineffective models and practices will persist. Increased staff workloads decrease the time that can be devoted to researching promising trends and examining new ways of addressing retention issues and ineffective practices.

Progress toward addressing student retention has also been delayed due to the limited training that faculty and staff receive. Many faculty members are considered experts within their field of study but receive limited, if any, training regarding effective instructional approaches. This pedagogical gap often causes a separation between how material is taught in the classroom and how individual students learn. Students who are

performing poorly or students who are doing exceptionally well are monitored; but the vast majority of students who score in the middle performance levels are left alone. This results in many students falling, unnoticed, through the cracks (Campbell and Campbell, 1997).

Faculty members may also be unaware of the importance of co-curricular activities that engage students beyond the traditional classroom setting. Since faculty-student co-curricular engagement is generally not a factor that is considered in tenure decisions, many institutions have limited involvement with faculty engagement programs and faculty have little motivation to pursue them independently. This co-curricular lead results in an often-stated issue of faculty who are perceived as intimidating or unapproachable, which negatively affects a student's ability to communicate issues and concerns as they arise. The perception that faculty are unapproachable, diminishes the likelihood that a student will be proactively connected with resources early-on. This could evolve into a situation that escalates and subsequently requires control which becomes the only viable option.

Student Success Theories

College leaders must ensure that students are provided with an opportunity to establish a strong rapport with faculty and staff to ensure that they connect to the campus beyond typical classroom settings. Today's college students are demonstrating academic weaknesses at a higher percentage than in previous years (Lumina Foundation, 2014), now placing the administrators on college campuses in the position to ensure that developmental courses are offered for first-year students and support services are implemented to provide a safety net and support system for continuing students.

Retention support programs that specifically address academic performance are connected to Tinto's Theory of Student Development Departure (Lotkowski, Robbins and Noeth, 2004). Tinto's theory identifies the importance of precollegiate experiences which influence a student's initial enrollment commitment along with meeting expected academic goals. His theory firmly outlines that a student's level of commitment can be based on such exposure and might define student engagement on campus. According to Tinto, this level of engagement will affect the student's enrollment decision.

Several student development theories include strategies to encourage student engagement and degree completion. Astin's Involvement Theory posits that the more the student is involved in academic and non-academic activities beyond the classroom, the more he or she will learn (Preceden, 2011). Chickering's seven vectors of identity development focus on the following: developing competence, managing emotions, moving through autonomy toward independence, developing mature interpersonal relationships, establishing identity, developing purpose and developing integrity (Williams, 2014). Chickering's work is most noted for its use in student services. The research of Tinto, Astin, and Chickering contain common threads in which they each identify stages that students encounter during their personal pursuit of achieving lifelong success. However, without the proper implementation of suggested interventions to improve student development, institutions will remain challenged with combatting student attrition.

Even when promising intervention practices are identified and implemented, institutional stakeholders often struggle to communicate those interventions to students. This lack of student awareness decreases the likelihood that a student will utilize support

services which could provide assistance with academics and college readiness, including guidance related to issues of poor attendance, prioritization of tasks, time management, etc. When interventions are highly publicized, another barrier for institutions includes combatting the stigma associated with seeking help. Students often decline to seek support services such as tutoring due to the fear of admitting that they are struggling academically. Ryan, Gheen, and Midgely (1998) found that students who have lower levels of self-efficacy were less likely to ask for assistance when needed and believed that other people would view them as being 'dumb' (p. 532) if they admitted that they were having difficulty. In many cases, students thought that if they simply 'held in there', or 'tried harder' (p. 533), that things would get better. Oftentimes this stigma resulted in students that desperately needed assistance being deprived of needed academic support.

What many students do not realize is that they all arrive at college with varying levels of preparedness. Some have received an excellent primary and secondary education, including the time management skills and study habits necessary to be successful in college; others, however, find that their previous education did not prepare them to be successful college students. Whether through formal or informal first-year or remedial courses, it is crucial that institutions identify underprepared students and provide them with the academic and readiness supports necessary for success while remaining cognizant of students' educational goals (Conley, 2005).

Even when all parties involved have implemented best efforts and practices, there is still the question of financing higher education. All of the intervention programs, student awareness and faculty and staff support will do little if a student cannot afford to pay his or her tuition bill. Many/most students need some financial aid to complete their

college education; without it, they frequently have little choice but to withdraw (Conner and Rabovsky, 2012).

Role of Community Colleges

The issue of increasing student retention rates is particularly important at community colleges. Community colleges were borne out of a need to provide education to the nation as a whole. Historically, higher education served those with the privilege of status and finances to attend college; however, as the 20th century progressed, more high school students planned to attend college than ever before. Demand for skilled workers put pressure on communities to educate the local populace; that meant that education beyond high school had to appeal to the community, i.e. establish colleges within local communities (Vaughn, 2006). Three criteria had to be satisfied to increase enrollment in higher education; affordability was critical, geographic accessibility was important, and enrollment had to be open to those who did not have stellar high school grades (Selsor, 2011). The most important aspect of this fundamental change in American higher education was that the institution had to reside within the community served.

Differences in Institutional Characteristics among Two and Four-Year Institutions

While four-year colleges and universities have selective admission policies, community colleges practice open admission, accepting anyone who desires to attend college. The qualification requirements for admission to a community college are minimal and students are only required to earn a high school diploma or a high school equivalency certificate based on the General Educational Development (GED) test if they want to take courses for credit. Community colleges also offer non-credit courses for which anyone is eligible. Community colleges are unique in that they offer basic skills or

developmental courses and English language courses for students who need to gain requisite knowledge before enrolling in credit-bearing college-level coursework. Course placement is usually determined when students complete placement assessments upon admission to the community college.

Students typically attend four-year institutions on a full-time basis and are of traditional-age, i.e. 18-22 years and come from diverse geographic locations. In addition to traditional students, community colleges cater to independent, first-time older adult students. Most community college students are likely to be in-state residents and attend college on a part-time basis, which indicates that they are enrolled in less than 12 credit hours per semester. Both community colleges and four-year institutions offer liberal arts and sciences curriculums; however, local needs drive the mission of the community college which is manifested in a comprehensive curriculum that includes a focus on vocational and technical training that enables a student to enter into the workforce immediately upon program completion. The terminal degree for community colleges is an Associate's degree, which can usually be completed within two-years of full-time attendance and is defined as the completion of 12 credit hours per term. Unique to community colleges are one-year certificate programs, which allow students to specialize in a technical or trade program such as welding, automotive technology, etc. These programs do not require students to satisfy general education requirements, thereby decreasing the time to degree completion. Students who wish to attain a baccalaureate degree would then transfer to a four-year college or university and can usually complete degree requirements within four to six years.

Traditionally, community colleges cater to commuter students who live in the local community, while four-year institutions support full-time residential students who require on-campus housing. Faculty workload at four-year institutions includes teaching, research and service, while many community college faculty members are often practitioners who also teach. Faculty-to-student ratios in community colleges are generally smaller than their four-year counterparts, averaging between 25 and 40 students, whereas freshman and sophomore classes at four-year institutions are likely to be much larger, thereby requiring the use of graduate teaching assistants. Perhaps the most striking difference between community colleges and four-year institutions is the cost of tuition. Students who attend four-year schools can expect to pay at least twice as much as community college students (Vaughn, 2006).

Rural Community Challenges

Rural communities in the United States have traditionally been characterized by low population density, limited job opportunities, low per capita income, and high rates of illiteracy (Gillett-Karam, 1995). Miller and Kissinger (2007) stated that 85 percent of the nation's geography consists of rural areas. These rural communities include 65 million American inhabitants. As the American economy progressively becomes more competitive and immersed in the need for technology-based skills, overstated stigmas that are attributed to the workforce of rural communities increasingly adds pressure to institutional and community stakeholders. Community residents may be asked to learn new skills or acquire additional credentials to keep pace with industry needs. The increased demand for knowledge acquisition contributes to the increase in college enrollment of non-traditional students in rural community colleges. Many of these non-

traditional returning students also balance employment responsibilities and parenthood. The student may also lack a high school diploma or equivalent, limited financial literacy and ability to pay, and may be a first generation college student (first person in his or her family to go to college or obtain a college degree) (NCES, 2002). The distance from the institution, lack of transportation and housing concerns (opportunity costs) may also hinder student success.

Rural Community Student Demographics

Students attending local high schools in rural communities are at a high risk of dropping out of school before graduation, thus decreasing college enrollment rates (Johnson & Strange, 2009). The Alliance for Excellent Education (2010) suggests that more than one-fifth of the nation's 2,000 poorest performing high schools are located in rural areas, and of those students who attend rural high schools, one out of five live in poverty. Considering the obstacles associated with rural secondary education, rural community colleges also endure significant challenges to retain students. The overall percentage of students served by rural institutions dictates the need to expand retention initiatives. During the 2007-2008 academic year, Rural Community Colleges served 3.4 million students or 37 percent of the 10.2 million total enrolled nationwide (Rural Community College Alliance, 2012).

Rural Community Colleges as National Resource

Rural Community College leaders have a pronounced opportunity to build regional economic advantage through community partnerships and culturally sustainable initiatives. As a mecca for teaching new skills to young adults and helping older adults to redefine their skill set, the rural community college is a crucial component in the viability

of rural American communities. Although a majority of rural community colleges are located in areas with a heavy agriculture industry, The Rural Policy Research Institute (2006) found that less than one percent of rural community members received direct income from the products of agriculture. By restructuring academic programs and focusing on wealth creation, in addition to public investments in rural regions, community colleges stand to contribute in increasing the affluence and equity of the nation.

Problem Statement

Over the course of the last eight years, institutions of higher learning have undergone numerous budget cuts. Decreases in state and federal funding have forced universities across the United States to reexamine their values and increase individual, departmental, and institutional accountability. In order to receive continued funding, institutions need to prove that they are being effective. According to the American College Testing summary tables (2014), almost one-half of enrolled students drop out of two-year public institutions between their first and second semester of college. In addition, according to Habley, Bloom and Robbins (2012), first to second semester college student retention rates from 1975 to 2010 have remained relatively stagnant over the past three decades. Considering the investment college officials make in educating students, studying attrition along with retention is an economic priority for institutions.

Because the factors that influence a student's ability to persist and be retained can be multifaceted and complex, a comprehensive look at predictors which may impact a student's ability to persist and be retained is needed. Identification of predictors/milestones that may cause a student to succeed or drop out of an institution can

lead to the development of targeted interventions for institutions to become more proactive in their retention efforts.

Specifically examining the historical retention rates at a rural community college in southern Missouri, many of the factors mentioned above are plaguing the institution's ability to retain students from the fall to spring term. While the community college of interest utilizes a variety of support programs, the level of overall retention at the institution remains to be an issue. This problem was addressed by examining variables contributing to the lack of retention for first-time freshmen from the fall to spring term, and by developing interventions aimed at increasing the institution's retention rate.

Purpose of Project

Taking the complex nature of retention and persistence into account, the purpose of the current project was to examine individual factors which may assist institutions in predicting first to second semester retention rates of freshman students enrolled at a rural community college, located in Missouri. More specifically, the project examined whether exam scores such as ACT and Compass scores; graduating high school GPA/percentile; and Pell Grant eligibility accurately identified students at-risk of leaving the institution. In addition, key milestones during a student's freshman year (early registration, participation in a First-year Experience course, and declaring a major) were examined to determine whether these achievements predicted a student's ability to be retained and persist towards degree completion within the critical first-year of enrollment. Data was also gathered to expand on students' perceptions of the most effective milestones within the first semester related to their continuing enrollment.

Research Questions

In order to gain a deeper understanding of the contributing factors affecting retention at the rural community college, the following research questions were addressed:

- 1) Do entrance/placement examination scores predict first to second semester retention of freshmen students?
- 2) Does high school GPA or percentile predict first to second semester retention of freshmen students?
- 3) Does Pell Grant eligibility predict first to second semester retention of freshmen students?
- 4) Does registering prior to 30 days of the start of the term impact first to second semester retention of freshmen students when compared to those who registered within 30 days or after the start of the term of their first semester?
- 5) Does participation in a First-year Experience course impact first to second semester retention rates of freshmen students, when compared to those who did not participate in a First-year Experience course?
- 6) Does declaring a major impact first to second semester retention rates of freshmen students, when compared to those who were undecided during their first semester?

After reviewing the various relational perspectives, intervention strategies were recommended to assist the college in reducing attrition between the fall and spring semesters. The interventions designed were based on best practices identified from the

research literature and were proposed as policy changes to help drive persistence at the institution.

Significance of the Project

As a key indicator of institutional quality, the retention and persistence of students to meet degree attainment is a global concern. According to Noel Levitz (2015), degree completion rates for community college students are critically low. Approximately thirteen million students are enrolled in community colleges across the United States and 46 percent complete a degree after six years. Community colleges play a vital role for students classified as underrepresented in higher education. As the primary source of education for US residents, two-year institutions enroll higher percentages of first-generation students than four-year institutions, as well as higher percentages of low socioeconomic status and non-traditional students (beyond 18-24 years) (Council of Graduate Schools, 2014). The role of the community college is crucial to the growth and development of our economy by providing educational access, opportunities to immigrants, minority, and first-generation student populations (Advisory Committee on Student Financial Assistance, 2008). The implementation of a strategic plan will increase the number of skilled workers to businesses and industries and increase revenue through allocations received from international students (American Association of Community Colleges, 2014).

Glossary of Terms

Attrition is defined as the percentage of students who leave an institution without obtaining a degree (particularly highest during the first-year of a student's education).

(Definition taken from: V. Tinto: Rethinking Institutional Action)

Persistence is defined as the rate at which a student persists/makes progress towards degree completion. This term includes students who transfer across universities.

Persistence rates are determined by using the following formula: total enrolled in the term + total graduated / total cohort. (Definition retrieved from:

<http://www.emergingedtech.com/2013/01/4-exciting-automated-solutions-for-student-retention-and-persistence/>).

Retention is defined as the rate at which students return full-time to school from year to year at one institution. Retention rates are determined by taking the total enrolled/total population of an admitted cohort of students. For the purpose of this dissertation retention rates will be looked at from semester to semester. (Definition taken from: <http://www.emergingedtech.com/2013/01/4-exciting-automated-solutions-for-student-retention-and-persistence/>).

Chapter II

Literature Review

Introduction

Student success and persistence are important contributing factors for combatting decreasing enrollment and low retention rates within higher education. As a result, college administrators, faculty and staff members are obligated to respond to critical questions regarding low enrollment, retention, and attrition. Unfortunately, these critical issues are not only challenging to stakeholders working at four-year public and private sectors, but can be especially challenging for community colleges. Considering the role of community colleges, as well as their practice of open admission, community college leaders are seeking ways to revitalize their policies and procedures to attract students while decreasing attrition. According to Wild and Ebbers (2002), student retention is critical to the community college environment, making it necessary to identify the retention goals of the institution, the definitions for retention criteria and data needed to progress toward the goal of greater retention.

This literature review will examine both historic and current policies that have contributed to the challenges of retention, while also reviewing various student models and theories that have been key influencers in understanding why students remain enrolled or withdraw. In addition, institutional factors and a review of the effectiveness of student support programs will be examined, along with several variables that may contribute to an institution's ability to retain students, such as entrance examination scores and high school GPA, Pell Grant eligibility, late registration, declaration of a major, and first year experience opportunities. Finally, the literature review will explore

current trends and best practices for boosting retention and examine future considerations that institutions strive for when strategizing their retention efforts.

Current State of Access to Higher Education

Higher education institutions have aimed to combat college access issues for some time. In the 1960's, TRIO programs were established and funded by the federal government in an effort to address concerns related to the successful transition of students from high school to college. While affordability is still considered a major barrier, many researchers have recognized that academic readiness continues to be a major hurdle toward college degree attainment, especially for underrepresented minority groups (Gullat & Jan, 2003). Institutions are faced with meeting the community demand to prepare today's youth for college. This reinforces the increasing need to establish strong partnerships with local schools, businesses, and community organizations. The creation of TRIO programs represents such initiatives established to address the lack of academic preparation among underrepresented populations and provide college awareness services to the community.

In addition, higher education institutional leaders must effectively establish enrollment goals to encourage students to graduate from high school as a precursor for increasing college persistence. For community colleges practicing open admissions, it is critical to have a strategic plan established to address the needs of students who demonstrate the necessity for remedial courses, external family support systems, and assistance to navigate the college campus successfully. Completion of the first year in college is a critical benchmark for students. According to Choy (2002), approximately 16 percent of first-year students, who attend four-year institutions and universities dropped

out during their first year or failed to return during the second year. Choy further stated that students who withdrew demonstrated characteristics or behaviors that clearly separated them from students who remained enrolled.

Research indicates that students retained after their first year in college had the propensity to persist if the correct interventions were provided. Early interventions, coupled with support services established on college campuses, increases the likelihood of students persisting to degree attainment (Castleman & Long, 2013). One early intervention that K-12 schools should consider is the act of partnering with community organizations. By establishing partnerships with community groups and businesses, schools would be better equipped to assist prospective students in developing both the skillsets needed to be successful in postsecondary education, as well as fostering aspirations for college. These partnerships could also then serve to provide support for current students (Simonet, 2008). The Campus Compact also indicates that institutions must be deliberate and have a strong commitment to ensuring success for all students, particularly low-income students and students of color. According to Gullat and Jan (2003), national studies identify administrative leadership as an element that is vital to developing a results-oriented institutional culture in which academic and student affairs professionals collaborate to provide programs and services to engage students, establish a strong sense of community, and maintain accurate data collection to assist with ongoing improvements. Through research, assessment, and the implementation of best practices, colleges will be equipped to create new policies and procedures for addressing retention and persistence.

Institutions could also commit to opportunities for the community to engage in campus activities that will assist with additional support systems for students. Established partnerships with alumni, businesses, schools, etc. can create partnership opportunities that will impact the student body and create networking opportunities. Research demonstrates that the quality of educational experiences and college environment can drastically shape the educational outcomes of students. Disparities are inevitable as proven by campuses that are committed to civic and community engagement (Simonet 2008); however, there are several theories used in research regarding college student retention that are based on the theoretical model of persistence by Tinto (Jensen, 2011). According to Tinto, persistence occurs when students experience social and academic integration within the collegiate environment. In addition to theories, policies also play a key role in the manner in which retention issues are addressed on college campuses.

Federal Legislation and State Policies and Mandates

One of the greatest influences on institutional views regarding student success and retention are the federal, state and institutional policies that govern higher education. One of the first policies to affect higher education was Section 504 of the Rehabilitation Act of 1973. This national law forbids organizations and employers receiving federal funding from denying or excluding individuals with disabilities and states these individuals must be given an equal opportunity to receive programs and benefits (hospitals, mental health centers, human services programs, and education). This legislation required postsecondary institutions to begin admitting more diverse students, triggering the need for institutions to begin offering more support services and other accommodations to ensure student success (U.S. Department of Health and Human Services, 2006).

In addition to Section 504 of the Rehabilitation Act of 1973, recent federal and state policies have also impacted higher education. According to the American Association of State Colleges and Universities (January 2013), as a direct result of the 2007 economic downturn, the United States is currently experiencing the longest post-recession recovery since the Great Depression. As state governments are focused on policies and programs aimed at spurring job creation and economic development, Congress has demanded that states begin developing and implementing state performance-based higher education funding systems. As of the 2013 report, 33 states had expressed interest or were currently implementing some form of performance-based funding system. The new focus on state appropriations and its connection to performance and accountability has resulted in a focus on improving key outcomes, such as degree completion and student success and retention, and as a direct result, these outcomes have impacted institutional policies regarding early alert systems, tutoring programs, and faculty/staff engagement (American Association of State Colleges and Universities, January 2013).

Because of the shift to performance based-funding, policies have led colleges to become more transparent, making key metrics more readily available to the public. Institutions are currently required to report information to the Integrated Postsecondary Data System (IPEDS), and programs and services must also abide by institutional policies governing data collection and performance as a way to increase accountability.

With a majority of state funding tied to performance, as well as the economic downturn of available funding, institutions have fewer resources available to reach their goals. Since 1987, state funding for higher education has decreased by one-third, while

tuition and fees have nearly doubled. This has led to a conversation in which tuition price increases have undergone heavy scrutiny, resulting in institutional hiring freezes and a focus on shared services in order to provide tuition caps and tuition freezes to make college more affordable for students (American Association of State Colleges and Universities, January 2013).

There are some policies that have also impacted developmental (remedial) education services provided to students. As of the 2013 report, 21 states either prohibited the delivery of remedial education courses at four-year institutions or strongly discouraged funding for such programs. This limitation has placed the burden for remediation on community colleges to close the gap between academically unprepared students and the skills needed to be successful in a four-year collegiate environment (American Association of State Colleges and Universities, January 2013). It is important to note that federal, state, and institutional policies often change, therefore student affairs professionals must continually research federal and local policies in order to remain abreast of changes regarding higher education policies.

Background

Since state and federal mandates have now increased the measures for which higher education institutions are responsible, institutions must determine the risk-factors associated with attrition. These mandates have impacted the volume of initiatives and services aimed at increasing institutional retention rates and academic personnel must become more familiar with research theories related to student success and retention. The concepts of student success and retention can be viewed as separate but equal entities. As

a result, many of the theories aimed at increasing student success also relate directly to matters affecting student retention.

Student Success and Retention Models

A handful of instructional perspectives are available to guide research and practice related to student success in college (Kuh, Kinzie, Buckley, Bridges, and Hayek, 2007) including sociological, organizational, psychological, cultural, and economic perspectives. No one theory has been found to account for all factors that influence student success in college. Kuh, et al. (2007) proposed that a combination of multiple perspectives should be used when developing possible interventions and programs to address all factors that can influence student success and retention.

One of the most respected sociological theorists in student retention is Vincent Tinto. Tinto believed that in order for students to succeed and persist to degree completion, several requirements needed to be met. Students needed clear expectations regarding what is required to be successful both inside and outside of the classroom, must receive a variety of supports to meet them where they are at developmentally (academic, financial, social, personal, professional, etc.), be given frequent assessment and feedback to inform them as to how they are performing early on, and be engaged in activities both inside and outside of the classroom (Tinto, 2012). According to Tinto (1993), academic and social integration directly impact a student's ability to adjust to college life.

Academic integration results in passing grades and accepting the academic values of the institution whereas social integration is directly impacted by the extent to which a student finds that the institutional environment aligns with his or her background, values, and

aspirations. Increased levels of academic and social integration are predicted to lead to greater institutional commitment and graduation (Kuh, et al., 2007).

The Organizational Perspective, influenced by Bean's Student Attrition Model (1983), theorizes that a student's beliefs are impacted by institutional experiences, which ultimately impacts attitudes of the institution and determines the student's "sense of fit". Perceptions of fairness of institutional policies and responsiveness of staff and faculty may impact whether or not a student chooses to persist (Kuh, et al., 2007).

Psychological Perspectives predict that personality traits such as a positive locus of control and self-efficacy encourage a student to persevere through difficult academic and social circumstances. Bandura (1982) proposed that those with a more developed sense of self tend to be more confident about their ability to succeed, while those who are less confident tend to give up when discouraged. It is hypothesized that students' views of their abilities can be altered by providing positive learning experiences very early when exposing students to new subjects (Kuh, et al., 2007).

The Cultural Perspective, influenced by Astin (1977), suggests that historically underrepresented students encounter major challenges when going to college which may impact their ability to stay at an institution and graduate. A student's perception of the institutional environment influences how a student spends his or her time and ultimately impacts his or her ability to seek help. Many students experience going to college as ending important relationships while at the same time resolving conflicts created by the need to perform well and separating themselves from familial norms and values. If a student has difficulty resolving these turmoils, his or her likelihood to persist is lower

than if the student is able to successfully resolve these conflicting messages (Kuh, et al., 2007).

The Economic Perspective, proposed by Braxton (2003), explains that a student's departure is a direct reflection of weighing the costs and benefits associated with obtaining a college education. If a student perceives that the cost of staying in school outweighs the return on investment, the student is likely to leave the institution; however, if the return on investment outweighs the cost associated with obtaining a degree, the student is more likely to persist. According to this theory, institutions need to create incentives for students to stay in school by making them aware of the benefits associated with obtaining a college degree (Kuh, et al., 2007).

Along with the varying perspectives, recent policy changes have resulted in the development of a wide range of support services that are available for students in postsecondary environments. Increased entry-level testing, summer bridge programs, disability services, multicultural services, course load restrictions, TRiO programs, early alert programs, tutoring, and supplemental instruction programs are only a few of the services that have been developed for the prospect of increasing student success and retention. Although many studies have been conducted to measure the success of such programs, the majority of related research has been conducted using four-year institutions, creating a gap in the research related to community colleges and other two-year institutions (Bailey, T. R., and Alfonso, M., 2005).

Institution Type and Support Services

Most of the research that examines the effectiveness of collegiate support services can be divided into three categories: private four-year, public four-year, and public two-

year. A 2011 report published by the Noel-Levitz foundation examined the ten most effective practices and the five least effective practices, reported by institution type. Effective/ineffective programs and practices were determined by looking at student feedback and direct outcome measures by administrators at each of the reporting institutions. Effective programs/services were identified as support measures which resulted in a noticeable increase in retention rates. Ineffective programs/services were identified as support services which resulted in minimal/no increase in retention rates. Strategies directly related to student support services and faculty engagement are highlighted in tables one and two.

Table 1

Effective Support Services by Institution Type

Institution Type	Practice	Very Effective	Somewhat Effective
Four-Year Private	First Year Experience Programs	45%	44%
	Academic Support Programs	37%	59%
	Early Alert Systems	34%	50%
	At-Risk Student Programs	30%	54%
	Academic Support Services	34%	50%
Four-Year Public	First Year Student Programs	40%	48%

	At-Risk Student	33%	40%
	Programs		
Two-Year Public	Academic Support	34%	59%
	Programs		
	First Year Student	27%	53%
	Programs		

Note: Adapted from Noel-Levitz. (2011). Student Retention Practices at Four-Year and Two-Year Institutions.

The Noel-Levitz (2011) report found that among the various institution types, all reported first year experience programs and academic support programs as producing high outcomes for retention; however, the two-year public colleges rated first year experience programs less effective than the four-year schools. This difference could be due to the policies or culture of four-year institutions vs. two-year institutions and whether campuses require participation in the first year program, or merely encourage students to take part in the program. In addition, early alert systems were noted as having a stronger influence on retention at four-year private institutions, than in the public sector, and programs designed for at-risk students, were reported as having a higher rate of effectiveness by four-year institutions than two-year schools. Identifying how the respondents classified the various descriptions would be an important caveat when analyzing this data, but according to Noel-Levitz (2011), both academic support services and first year programs are among the highest-ranking practices identified and are both well-known and widely used.

Institutions surveyed also noted several programs or actions they considered to be ineffective. Results from programs that produced minimal or no outcomes for increasing retention are summarized below (Table 2).

Table 2

Ineffective Support Services by Institution Type

Institution Type	Practice	Ineffective	
Four-Year Private	Web-based tools	60%	
	Use of Social Networking (In Class)	59%	
	Request to Remain in Contact with Students Leaving the Institution	56%	
	Veterans Programs	50%	
	Second Year Programs	48%	
	Four-Year Public	Request to Remain in Contact with Students Leaving the Institution	65%
		Faculty/Staff Interactions	60%
Student Withdrawal Surveys		59%	
Request for Intended Re- entry Dates from Students Withdrawing from the Institution		57%	

	Use of Social Networking to Engage Students	56%
Two-Year Public	Request for Intended Re-entry Dates from Students	67%
	Withdrawing from the Institution	
	Request to Remain in Contact with Students	67%
	Leaving the Institution	
	Second Year Programs	63%
	Interviews with Students	62%
	Withdrawing from Institution	
	Standard Communication to Communicate Retention, Persistence, and Completion	60%
	Data to Campus Community	

Note: Adapted from Noel-Levitz. (2011). Student Retention Practices at Four-Year and Two-Year Institutions.

When examining which programs have a minimal effect on retention, all sectors found efforts geared toward requests to remain in contact with students leaving the institution, and requests for an intended re-entry date, bore little results for retention. Similar perceptions were noted concerning the use of withdrawal surveys or interviewing

students that withdrew as an effective retention tool. Interestingly, the four-year sectors cited social networking or web based tools as ineffective, but that was not a factor rated by two-year institutions. This could be due to the fact that four-year institutions may have a more active recruitment strategy than the two-year sector which practices open admissions.

Another interesting finding was that sixty percent of public four-year institutions rated faculty/staff interaction as ineffective, but neither four-year private nor two-year public ranked this practice as ineffective. Assessing faculty/staff interaction as ineffective is contradictory to much of the literature on student engagement and retention, and therefore, additional research may be needed to determine the reasoning behind the results noted. In addition, second year programs were noted as ineffective by both four-year private and two-year public institutions, but not four-year public. Considering the first year is critical for retention, programs that focus on the second year, especially at two-year institutions, may logically produce a lower outcome than programs that focus on first year students. Finally, four-year private institutions were the only sector noting veterans' programs as ineffective. Without knowing the demographics, this rating may also need additional research, but one possible explanation could be a higher percentage of veterans enrolling in the public sector.

Factors Affecting Retention

Understanding the effectiveness, impact and conditions behind the need for support programs is necessary when working to retain students. Some of these scenarios may be pre-existing conditions, such as entrance examination scores, high school GPA, or Pell eligibility, but other contributing factors fall under campus control, such as time of

registration and policies regarding a first year experience course. In addition, the timing of when students declare a major can also be considered an important milestone for retention. By examining the literature surrounding these variables within the culture of community colleges, institutions will have a better understanding of possible policy or processes modifications that may drive increased retention rates.

Student Retention-Entrance Examination Scores and High School GPA

The exploration of how college access programs relate to persistence, retention and degree attainment has occurred for decades. As the United States encounters increasing challenges to the current educational system, there is a demand to create interventions to promote college persistence among youth, particularly underrepresented student populations. According to Ishitani and Snider (2006), educators are encountering increased pressure to improve college readiness among graduating high school students. Both authors suggested that high schools can foster enhanced college attendance and degree attainment by offering both academic and college support programming early during high school years. Examples of this include summer bridge programs which aim at bringing students up to speed with the academic rigor of college level courses and First Year Experience courses which introduce students to available campus resources and focus on study skills necessary for achieving academic success.

According to the Organisation for Co-operation and Development (2012), the U.S. ranked the likelihood for youth attending college if their parent did not obtain an upper secondary education at 29%, therefore the U.S. was the lowest ranked country in comparison to other OECD countries. As statistics nationwide remain dismal, the number of students who are prepared to matriculate to college continues to decline in the state of

Missouri as well. The Condition of College Readiness and Careers 2013 report produced by ACT indicated there was a 5.2% decline in the number of Missouri high school graduates that took the ACT in 2012-2013. In addition, ACT (2013) reported that only 27% of high school graduates in Missouri were academically ready in all four benchmark areas of Math, English, Reading and Science. These data further underscore the importance of affording opportunities for students and their families to begin early interventions to combat barriers that impede college matriculation.

Recent research studies have examined the impact of entrance examination scores on retention. A study published by the Community College Research Center (2012) examined data of 42,000 first-time students at a large urban community college. The researchers found that placement tests such as Compass and other high stakes entrance examinations did not predict how well students performed in community college settings. For example, approximately thirty-three percent of students who were placed into remedial courses based upon entrance exam scores could have passed college level courses with at least a B. The placement exams were found to be a better predictor of success in a math oriented course as opposed to an English course, and also a better predictor of whether students were likely to perform well in college level coursework, as opposed to whether students were likely to fail. However, the researchers concluded that the best predictor of student success was the high school GPA and urged institutions to examine grades received and previous coursework completed during a student's high school career when determining the applicable course work level for first time college students (Community College Research Center, 2012). To further illustrate this point, Belfield and Crosta (2012) found that placement test scores were weakly associated with

college GPA and the correlation disappears when controlling for the variable of high school GPA.

Collins (2011) noted measures taken by the University of Michigan which established authentic engagement with the community, for the purpose of combatting the decrease in college matriculation rates. They developed college outreach services with the intent to forge strong partnerships with schools, community organizations and the civic community. The initiatives that have been adopted by the University of Michigan to engage schools and community organizations in order to decrease the number of students who are unprepared to matriculate to college and attain a college degree is a good model when focusing on retention strategies.

Pell Grant and Student Retention

Pell Grants assist low-income undergraduate students who are attending one of approximately 5,400 participating postsecondary institutions across the United States. In order to qualify for a Pell grant, students must be pursuing their first bachelor's degree, complete the Free Application for Federal Student Aid (FAFSA), and exhibit financial need as demonstrated by a student's estimated family contribution (EFC). Institutions use a standard formula to determine a student's EFC, which affects the amount of Pell Grant money awarded (the student's EFC is determined using the sum net income and net assets as well as family size and number of family members actively enrolled in college). Other factors that determine the amount of Pell Grant money received include cost of attendance, whether a student attends college an entire year or semester, and full-time or part-time enrollment. The Federal Pell Grant differs from other types of financial aid because students are not required to repay any of the money received upon graduation

(unlike a loan). For the 2015-2016 award year, the maximum amount a student could receive from the Federal Pell Grant was \$5,775 (U.S. Department of Education, 2015).

The federal Pell Grant was the embodiment of the Higher Education Act (HEA) of 1965. President Lyndon Johnson implemented the Basic Educational Opportunity Act as part of his presidential platform to improve higher education in the U.S. During this period, the HEA included both grants and low-interest loans. In 1978, The Middle Income Assistance Act expanded monetary support to middle-income families (with incomes up to \$25,000). This act expanded services to an additional 1.5 million students. In 1980, the grant was named the Federal Pell Grant after Senator Claiborne Pell who spent his career trying to improve the state of higher education in the U.S. (A Brief Pell Grant History, 2015).

The direct effect of the Pell Grant as it relates to retention rates is an area in which additional research is needed. Although minimal research has been conducted on this topic, institutional personnel are beginning to understand that there is a need to determine whether increased amounts of financial support increase retention rates among students who attend higher education institutions in the United States. A study published by Noelle Levitz (2011) sought to examine the effects of Pell Grant eligibility on retention rates for higher education institutions in Louisiana. The report examined completion data over a three-year period from 2006 until 2009. More specifically, Noel-Levitz examined 37,251 student records to determine whether financial aid resulted in increased fall to fall retention rates and whether there was a difference in retention rates for students who receive the Pell Grant and needy non-Pell Grant recipients. The researchers found that there was a retention rate of 51 percent for students who received a need-based financial

aid package that comprised 30 percent of their total bill. There was a retention rate of 78 percent for students who received a need-based package that comprised 80 percent of their total bill. Results of the study indicated that need-based aid was associated with overall fall to fall retention rates. Results also indicated that students who received Pell Grants had a higher completion rate than their non-Pell Grant peers (after controlling for high school performance) (Noel-Levitz, 2011).

Late Registration and Student Retention

Much of the literature studying the impact of late registration on academic success and persistence suggests that students who register late are at greater risk of attrition. Only one study conducted by Angelo (1990) determined that there were not any adverse outcomes resulting from the implementation of a registration policy (Safer, 2009). While various studies examined the personality characteristics of late registrants, other researchers explored the role of institutional policies regarding retention efforts, and they also noted that current practices may actually be counterproductive to retention efforts. For example, a hierarchical structure for issuing registration appointments could disadvantage first-time freshmen or at-risk students and may be inadvertently hindering their success. As stated by Freer-Weiss (2004), institutions that advocate for the implementation of late admission and registration policies may negatively impact students who have not adequately prepared for college.

Advocates for late registration policies claim that it is an expression of an open door policy and also increases the number of full time equivalent (FTE) students, thereby increasing revenue (O'Banion, 2012). In addition, several advisors interviewed in a study conducted by Weiss (1999) believed that late registration policies were "necessary for

open-access colleges and served a good purpose” (p. 12). However, numerous studies have reported a high rate of attrition for students who were allowed to register late, producing a debate as to whether the revenue from late registrants actually outweighs the costs. The impact of late registration on persistence was confirmed in a study conducted by Goodman (2010) which found that the course registration period had a direct significant correlation to persistence during the first year of college regardless of socioeconomic background, or whether students were considered transfer or vocational.

Allowing late registration may also hinder a student’s opportunity to engage with the institution. Engagement has been noted by several theorists as a critical factor of student success, (Astin, 1993; Kuh, Cruce, Shoup, Kinzie, Gonyea, 2008; Tinto, 1993; Tinto, 2012), therefore late registration may increase an institution’s retention challenges. “All students – but especially first generation, underprepared students from lower socioeconomic backgrounds - need to connect with other students, with instructors, and with course content as quickly as possible” (O’Banion, 2012, p. 28). Institutions that practice late registration may be creating an unnecessary obstacle to student success, as engagement is contingent upon how much time and effort students commit to their studies (Tinto, 2012). Late registration also diminishes the opportunity for engagement as students are not always provided the opportunity to meet with faculty and advisors during the early registration period in which they can discuss academic plans and goals, or experience the student orientation program that provides valuable resources and promotes campus engagement.

In addition to limiting engagement, late registration has also been linked to lower academic performance and an increased chance for withdrawal. Smith, Street, and

Olvarez (2002) examined differences among students enrolling during three phases of registration early, regular, and late registration (defined as 1 to 8 days after the start of classes). This study determined that only 35% of new students that registered late were retained the following semester as compared to 80% of those who registered on time. The study also found that late registrants had a higher rate of withdrawal. The results indicated that 21% of late registrants withdrew from their courses as compared to a 10% withdrawal rate for students who registered on time. When considering classes that have high DFW outcomes (students receiving a grade of D or F in the course, or who withdrawal from the course before successful completion), late registration may also be a significant factor. Keck (2007) found that only 17% of students who registered on time experienced low academic performance in their math and science community college courses as compared to 44% of late registrants that were unsuccessful using the same measure. A study conducted by Ford, Stahl, Walker and Ford (2008) confirmed the correlation between registration timing and academic outcomes when they found a significant inverse relationship between registration latency and both course grade and GPA. In addition, Ford et al (2008) performed a regression analysis using registration latency and student classification as independent variables in order to eliminate the possibility that class level may be the reason for higher grades. The results indicated that registration latency as the only significant predictor.

With regard to the demographics of late registrants, Zottos (2005) found that low performing students were more likely to register late and the last minute rush and arrangements can trigger not only problems with securing financial aid, books and child care arrangements, but it can further lessen diminished motivation. Belcher and Patterson

(1990) confirmed the demographic of late registrants when they determined that the majority of students registering late tended to be older than the traditional age college student, and they were forced to juggle outside responsibilities which limited them to part time attendance. However, Weiss' (1999) indicated that the nontraditional late registrants were not necessarily prone to attrition, as advisors described the population as more motivated and better prepared to make the transition than traditional students, but it was noted that they may lack self-confidence.

Finally, colleges that have abolished late registration policies or reduced the timeframe of late registration, have experienced increases in both retention and graduation rates (O'Banion & Wilson, n.d.). After eliminating late registration at East Central Community College in rural Mississippi, Billy Stewart, College President, reported a rise in the fall to spring retention rate. According to the Community College Daily (2015), Stewart noted that only 42 percent of students who registered late in fall 2013 returned for the spring semester, but after abolishing late registration the following year, the fall to spring retention rate was reported at 62 percent.

Declaring a Major and Student Retention

The effect and timing of choosing a major can have important implications on student persistence. Several authors (Reynolds, Gross, Millard and Pettengale (2010); and St. John, Shouping, Simmons, Carter and Weber (2004)) asserted that an early declaration of major would lead to increased retention, as the student may be more committed to their studies, while others indicated early affirmation of a major may actually be premature and lead to ineffective decision making. Leppel's (2001), research indicated that differences in persistence evolved from a student's level of goal-

commitment, interest in a subject, the effect of social-forces, and their own self-image. Using a two-step process of least squares regression and logit estimation, Leppel (2001) concluded that “students with undecided majors have both low academic performance and low persistence rates” (p. 340). She cited lack of commitment to their education as the rationale for attrition. Wyckoff’s (1999) retention research confirmed the importance of commitment as a reason for persistence when he found “...student commitment to education and career goals is perhaps the strongest factor associated with persistence to degree completion” (as cited in Cuseo, 2005, p.1).

The importance of subject interest was also noted by Harackiewicz, Barron, Tauer, Carter and Elliott (2000) as a key determining factor in choosing a major since a student’s level of interest often determines whether subsequent courses in a particular discipline are chosen. In addition, the authors found that competency combined with an interest in the subject yielded the highest impact on choosing an academic major. Considering that first-time freshmen have a limited breadth of academic feedback for assessing their competency in a particular field and minimal exposure to the various disciplines available, other researchers (Cuseo, 2001; Lewallen, 1993) determined that early declaration of major can actually be detrimental to persistence.

As stated by Cuseo (2005), “A commonly held assumption in higher education is that students who are undecided about a college major are at greater risk for attrition than students with a declared major” (p. 1). Gathering data from over 18,000 first year students enrolled in over 400 colleges and universities, Lewallen (1993) determined that the status of undecided or decided did not have a significant impact on predicting or explaining student retention (as cited in Cusueo, 2005). However, other researchers

found conflicting results. When St. John, Hu, Simmons, Carter, and Weber (2004) studied major and persistence behavior among Whites and African Americans, their results showed that White freshmen who delayed the decision to select a major had a lower probability of persisting than other White students, but African American students who had delayed the decision to declare a major did not have a significantly different profile when compared to other African American students in persistence (p. 224). Hagedorn, Maxwell, and Hampton (2001) also studied African American males at a community college and learned that early identification of a major was a factor that predicted success (as cited in Reynolds, Gross, Mullard, & Pattengale 2010).

Cuseo (2005) stated that much of the early research reported a correlation between the status of undecided major and attrition, but the interpretation may have been misconstrued by falsely associating a student's lack of commitment with low aspirations, thereby categorizing those students as "at-risk" (p. 2). However, as noted by several student development theorists delaying the decision to declare a major may not necessarily be detrimental, as college is a time of exploration and self-analysis which culminates in the ability to develop effective decision making skills. Chickering and Reisser (1993) emphasized the important role personal identity can play on defining a career purpose, and they also noted identity development must progress through several stages and only begins during the first year of college. Tinto (1993) also sanctioned the importance of exploration when he stated:

The regrettable fact is that some institutions do not see student uncertainty in this (exploratory) light. They prefer to treat it as a deficiency in student development

rather than as an expected part of that complex process of personal growth. The implications of such views for policy are not trivial (1993, p. 41).

James Powell, former president of Oberlin and Reed College, confirmed the importance of exploration when he expressed more concern for students who enter college with certainty regarding their career aspirations, than for those that were undecided. As cited by Pope (1980), Powell stated, “The kids who worry me are the ones who are so darn sure they know what they’re going to be doing” (p. 180). Cuseo (2005) endorsed this point and found that students who confirmed a particular major early in their academic career may actually be at greater risk of attrition due to premature decision making that lacks information, forethought and self-knowledge.

Considering the community college perspective, encouraging students to make early decisions about their field of interest is often considered a necessity in order to determine whether their academic track should be a vocational or transfer curriculum. According to Striplin (1999), this sorting practice may actually have a reverse effect on retention because two-year colleges enroll a high percentage of academically underprepared, under-experienced, and underrepresented student populations. Cuseo (2001) contends that community colleges may better assist students in making informed decisions by infusing academic and career planning into the first year curriculum. Astin (1993) confirmed the importance of career counseling when he noted that the primary purpose that students attend college is to prepare for a career, but they need professional assistance. In addition, the practice of combining career counseling with academic advising can serve to increase the level of student satisfaction, thereby also increasing retention (Noel & Levitz, 1995).

Student Retention-First Year Experience Courses

First Year Experience (FYE) programs are intended to enrich the academic and social integration of first year students (Barefoot, 1992). These programs contribute to the increase in grade point average; student satisfaction with faculty, peers, and the institution and the development of interpersonal skills, faculty engagement and the use of campus services. Conversely, each of these outcomes positively influences student retention to second year and persistence to graduation (Greenfield, Keup & Gardner, 2013). As a high impact practice, an increasing number of institutions are developing first year experience programs that connect students with faculty and staff and student success programming on a regular basis. According to Kuh (2008), a highly successful first year experience values critical inquiry, frequent writing, information literacy, collaborative learning and additional skills that may develop students' academic and applied knowledge. Common practices include, but are not limited to, collaborative assignments and projects, diversity and global learning, writing – intensive courses, learning communities, service learning and undergraduate research (Keup & Young, 2014)

A recent study from the University of South Carolina, Board of Trustees (2014) found a 21.2 % rise in the number of colleges that offered a first year experience course, increasing from 68.5% to 89.7% since 1988 (Keup & Young, 2014). Although community colleges enroll 42% of first-time freshman, they have received minimal attention for their first year experience programs (Bers & Younger, 2014). Research and development was first introduced at four-year institutions and later adopted by community colleges. Additionally, funding was provided for these programs at

community colleges after successful implementation at senior institutions. As pressure builds to meet budgetary demands and state mandated performance indicators, in addition to mission fulfillment and requirements for reputation improvements such as college ranking and advancement in admission and marketing, first year experience programs will increasingly receive attention from post-secondary institutions (Porter & Swing 2006).

Current Trends in Retention at Community Colleges

According to Tinto (2012), colleges and universities are obligated to support student retention, success, and graduation. Institutions must create a culture and environment that supports this intent through the execution and reflection of programs, policies, and expected outcomes.

Current Issues - Best Practices

Tinto identified four major strategies that are necessary for student retention: covering expectations, support, assessment and feedback, and involvement. Students must receive a clear set of expectations that delineates requirements for successful academic performance. Academic, financial, and social support are all indicators of student success. Colleges and universities must provide support that enables and empowers students to succeed academically. Additionally, measures of academic performance and outcomes must be assessed with timely feedback in order for students to make the necessary adjustments and seek support. Successful students are retained when they are involved with faculty, staff, and peers (i.e., academic and social involvement). Students who feel a sense of connection to an institution, are fully engaged in the learning process, and are aware of the requirements for successful navigation in the collegiate

environment are more likely to experience academic success, leading to graduation (Tinto, 2012). These four major strategies can be used as a framework for community colleges that show interest in creating interventions and programs that will enable students to succeed, thus addressing the complexities of student success and embedding retention within comprehensive strategic plans.

Jenkins (2011) examined the practices of high-performance educational institutions and provided recommendations for improving the performance of community colleges. According to Jenkins, highly effective institutions are led by leadership that place value on student success, coupled with a focus on student-centered learning and teaching in the classroom. Within this environment, data-driven practices are incorporated that provide measurable outcomes for student success. Advising and academic support place an emphasis on at-risk students, making it a campus-wide initiative and providing professional development for employees. Change and innovation are facets of the campus culture. Jenkins' recommendations for community colleges include setting outcome goals for increased student achievement, with the intent of reducing the number of students who require remediation and the use of proactive tracking mechanisms that identify students early on who need some type of remedial support in order to find effective solutions. Monitoring student learning and success is necessary to identify gaps in achievement. Policies and practices must be aligned to meet and improve policy outcomes in the classroom, curriculum, and enrollment. Overall, retention outcomes must be examined for effectiveness.

The 2015 Noel Levitz Report published findings from a Student Satisfaction Inventory (SSI) administered to 22,000 community college students to determine

predictors of student retention rates. The sample population included 22 community colleges and 22,221 participants representing over 200,000 students across the country enrolled in small, medium, and large post-secondary institutions. Small schools were represented as institutions with an overall enrollment of less than 4,999 students, compared to medium schools that have enrollments between 5,000 and 14,999. The students were enrolled in two-year community and technical colleges during the spring of 2009, 2010, 2011, or 2012. Eighty-six percent of the students attended institutions in which 25 to 50 percent of their students were full-time. Sixty-four percent reported that less than 25 percent of their students were full-time. The data were reviewed for inconsistencies and errors and 13,465 records were removed, so the final sample size was 8,756 in the study. Seventy-three percent of the participants were females and the majority of students were within the 19 through 34 years old age group with 72% Caucasian/White; 71% were day students. A two-tailed Pearson correlation test was administered and 188 variables were included for the study. Eighty-eight percent of the students indicated that their education goal was to obtain an Associate's Degree and 80 percent indicated their current institution was their first choice.

The results identified student GPA and academic performance as common indicators that directly impacted retention. The report also mentioned that colleges must be more selective while simultaneously providing academic support in the form of pre-collegiate programs to strengthen academic skills through the use of tutoring, math labs, and library services. Students should be made aware of these resources prior to enrollment. Financial aid was identified as a predictive variable in regard to opportunities for scholarships, assistance with the Free Application for Federal Student Aid (FAFSA),

maintaining full-time status, and student's overall satisfaction with the college experience and campus climate.

Accordingly, St. Petersburg College (SPC) extensively analyzed retention on their campus in the fall of 2012 and implemented five strategies that have greatly impacted student success. A committee composed of faculty, staff, and personnel was formulated to analyze the effectiveness of their retention programs. The approach included an expansion of academic support services with career planning as part of the academic advising process, reconstructed student orientation programs, established early alert systems, and providing enhanced degree completion as it relates to graduation plans. An online tool identified as My Learning Plan provided students the ability to map out degree programs in advance. Students were clear of the expectations in order to achieve degree completion as well as the impact of adding/dropping courses. The college reported significant success rates for three semesters yielding a 74.4% completion rate compared to a 69.6% rate in fall 2012 (Law, 2014).

Other campuses are supporting retention efforts through their Admissions Office. Dr. Marcia Roman, Director of Student Success Natives at Seminole Community College (2007) builds a case for admission counselors to provide a more comprehensive introduction when communicating expectations to prospective students. She proposed that admission counselors help students set realistic goals, encourage utilization of campus resources, recommend career courses, and encourage students to become engaged through campus involvement. Admission counselors can, at the onset of student contact, send a consistent message to students by establishing a framework for academic and social engagement.

Dr. Mayo, Associate Vice President of Student Affairs at West Kentucky Community and Technical College, provided a brief history of the literature of first-year experience courses and the interventions which contribute to student persistence, retention, and graduation rates. Mayo proposed that a central person serve as lead, providing clear direction and support for curriculum development. Faculty and staff are also recommended to engage all first-time freshmen and play an important role in first-year program development. Practitioners must develop curriculum inclusive of a wide range of strategies and tools to promote success while remaining student centered, therefore first-year experience courses should include: student-to student interaction and activities, faculty to student interaction both inside and outside the classroom, discussion of ways to engage students on campus, linking curriculum with real-world experience, clearly defining academic expectations, and academic preparation for college.

The 2010 Noel-Levitz report identified ten community colleges that implemented various programs and practices beneficial to retention. Consultants made recommendations and provided training to equip campus staff and faculty. Campuses adopted the findings from Noel-Levitz, employed satisfaction surveys, and implemented various instruments for offices throughout campus. Western Texas College collaborated with Noel-Levitz, creating programs to improve retention and graduation for students who were enrolled in remediation courses. As a result, the college implemented a summer bridge program which yielded an increase in retention from 55 percent to 78 percent. Montgomery County Community College in Pennsylvania gathered information from a Student Satisfaction Survey which served as a guide to track progress, thereby inspiring the creation of an early alert system. Hinds Community College increased

enrollment rates by implementing the Student Satisfaction Inventory to gauge student needs and expectations, which revealed that target students wanted the feel of a traditional campus climate.

Current Issues Regarding Faculty Engagement

The quality and value of an undergraduate education can be attributed in part to faculty behaviors and interactions with students. Tinto's (1993) model advised that a student's decision to persist or withdraw from college was contingent upon the successful social and academic integration of a student in the college environment. Research conducted on the correlation between faculty engagement and student success continues to find significant data in regard to the overall success of a student when faculty members partner with student affairs professionals and other staff strategically to fashion a rich, engaging classroom experience that complements the institution's academic values and students' preferred learning styles (Kuh, 2008).

Unbach (2005), examined data from the National Survey of Student Engagement, regarding student impact of engaged faculty and faculty perceptions of engaging students outside of the classroom. The author found that students reported higher levels of engagement at institutions where faculty used active and collaborative learning techniques, interacted with students both inside and outside of the classroom, valued enriching educational experiences, and emphasized higher-order cognitive activities in the classroom. This also impacted student success, retention, and perception of the campus climate by allowing students to form connections with faculty outside of the classroom. Unbach also found that professors from Liberal Arts colleges were more

likely to engage students in the activities described above than were faculty members from other institutions.

A similar study conducted by the Community College Research Center (2011), found that students who interacted with their professors outside of the classroom had higher GPAs and were more likely to be retained than students who did not interact with faculty outside of the classroom. In addition, as faculty-student mentoring programs become increasingly more prevalent, researchers are finding connectivity between the effects of faculty-student mentor programs, academic performance and student retention. Campbell and Campbell (1997) showed improvements in students' GPA (2.45 vs. 2.20), more credits earned per semester (9.33 vs. 8.49), and lower dropout rate (14.5 percent vs. 26.3 percent) for students who participated in mentoring programs as compared to those who were not assigned mentors. Although academic achievement and retention were found to be unrelated to a student's race, gender, or a student's gender/race matching with mentors; researchers in this study concluded that student success and retention was correlated to the number of direct contacts between the student and mentor. As a result, mentored students were far more likely to have higher retention and persistence to graduation rates (Campbell and Campbell, 1997).

An important consideration concerning faculty engagement involves the institution's reward structure. Astin's (1993) study, *What Matters in College?* exploited the minimal value placed on faculty service when he found a negative correlation between salary and a faculty member's student orientation (Arum & Roksa, 2011, p. 8). In addition, a study conducted by Boyer (1990) confirmed the lack of incentives for faculty-student engagement and showed it was research and publishing that were heavily

emphasized for tenure, rated at 28% and 41% importance respectively (Arum & Roksa, 2011, p. 7). Because student engagement outside of the classroom does not impact tenure status, it is important that institutions look at incentives for faculty to increase their likelihood of participating in such programs.

Current Issues-College Readiness Challenges

The necessity of increasing retention percentages and college completion rates continues to lead policy agendas. As the demand for higher education to impact the community increases, institutions now face a lack of available resources to effectively offer services targeted specifically for at-risk student populations. Historically, community colleges have committed to serving students who desire to attend post-secondary institutions but lack college readiness skills (Attewell et al, 2004). According to the Community College Review (2012), approximately 98 percent of all community colleges, 80 percent of public 4-year institutions, and 59 percent of private 4-year institutions offer some remedial education coursework. Federal reports have found that approximately 40 percent of first-time community college student's score into developmental courses based upon college placement test scores, with some schools reporting up to 80 percent of their students. Adversely, completion rates for institutions result in fairly low percentages. Research concludes that 20 percent of students who take two or more developmental courses complete a bachelor's degree, while only 17 percent of students who take developmental courses in reading accomplish a 4-year degree (Community College Review, 2012). As policymakers and practitioners identify and interpret trends that limit student success, it has become increasingly important to examine several characteristics of student success which include student background

characteristics, student demographics and pre-college experiences, structural characteristics of institutions (i.e. mission, size, and selectivity), and interactions among faculty, staff, and peers. Student perceptions within the learning environment and quality of effort that students devote to educationally purposeful activities are also contributing factors (Kuh, 2008).

Current Issues - Student Support Services

As the climate continues to shift on many college campuses related to student demographics, enrollments trends, financial concerns, technology and services offered, colleges and universities are being challenged to meet the needs of students in progressive ways. Practitioners are confronted with a broad range of student needs which includes but is not limited to impacting traditional, nontraditional, first-generation and low income students. These unique student profiles identified as at-risk solidify the need for Student Support Services on college campuses (Gillett-Karam, 1995).

At-risk students may not consider their academic commitments as being a top priority due to external responsibilities that create major time constraints. Such students are more likely to have unclear expectations of how to model successful student behavior, than students who are not first generation college students. Federal Student Support Services (TRiO) Programs (TRIO) are national student service programs that target low-income individuals, first-generation college students, and students with disabilities to provide access and support spanning from middle school to post baccalaureate programs (U.S. Department of Education, 2015).

A key factor which may keep students from seeking support services, in particular tutorial services, is the stigma attached to admitting that one is struggling. Ryan, Gheen,

and Midgely (1998) found that students with lower levels of self-efficacy were less likely to ask for assistance when needed and believed that other people would view them as being academically challenged if they admitted that they were having difficulty. In many cases, students who believed that if they maintained their enrollment status, or tried harder, their chances of success would improve. Often times this belief resulted in students not having an opportunity to obtain the proper academic support.

It is of the utmost importance that institutions of higher learning initiate campaigns to combat the stigma associated with seeking academic assistance and inform students that the purpose of college is to challenge individual thoughts and expectations which at times may require assistance to more fully understand the ideas, theories, and models placed before them. The negative stigma associated with admitting that one needs help can be alleviated by highly publicizing tutorial services campus-wide, having faculty encourage the use of services, and by offering a wide variety of services to students. By letting students know that they are not alone, seeking out academic support services may become the norm instead of being a cause of embarrassment for students (Ryan, Gheen and Midgely, 1998).

Future Considerations

The current state of improving degree attainment for underrepresented student populations is an important consideration for future retention strategies. Institutions will be faced with increasing challenges of improving retention for this population during a time of budgetary constraints. Campus administrators are dealing with reduced financial support or allocations that have not increased, making it difficult to tackle some of the critical areas impeding access and retention. In turn, students are faced with limited

academic and financial support, both of which are necessary to provide early awareness resources and resources to afford a college education. Minority families tend to have a lower socio-economic status than white families. Institutions that strive to strengthen their programs in affordability are seeking to provide opportunities for increased access and degree attainment (Carter, 2006).

Institutions must consider a variety of approaches to combat declining enrollment and attrition rates. Some thoroughly researched suggestions have been recommended as best practices to assist institutions with combating achievement gaps. Hanover Research (2011) offers six suggestions for addressing retention and persistence issues, many of which were noted in the literature as effective retention strategies. First, institutions must address academic as well as non-academic factors that influence student happiness and success. The presence of an academic advisor is essential to empowering students to persist and be effective in their academic career. Second, institutions should include commonly noted retention efforts for first year students to include learning communities and summer reading programs. Programs such as these empower students to connect with a specific community within the institution. Third, institutions should promote services that will encourage academic and social development thus impacting the likelihood of retention and graduation of first year students. Introducing resources and skills that can be used throughout the college career would be beneficial. Fourth, it is important to require students to participate in first year experience seminars that focus heavily on academic preparation. This orientation may possibly provide students with an all-encompassing introduction to issues relevant to obtaining a post-secondary degree. Fifth, students should be provided with some form of advisor, mentor or tutor. Lastly,

implementing summer bridge programs for at-risk students to assist with developing study skills and becoming familiar with the campus community is of vital importance.

Institutions that desire to have a strategic plan to address retention issues must be aware of issues that influence the decision to re-enroll and reach degree attainment. According to ACT (2013), the success of a retention strategy is based on the ability to address both academic and non-academic factors. Colleges must consider providing comprehensive services to address students in a holistic manner.

Conclusion

Retention continues to be an important objective for all sectors of higher education, but especially for community colleges utilizing open door policies. While historical events greatly increased access to college, many challenges remain in college student persistence. By examining the effectiveness of various programs aimed at increasing retention, as well as understanding some of the contributing factors that may be deterrents for retaining students, institutions will be able to not only increase their ability to assist students in completing their goals, but also work toward raising retention rates.

The proposed dissertation adds to the current body of literature by examining individual factors which may assist institutions in predicting first to second semester retention rates of freshmen students enrolled at a rural community college, located in Missouri. More specifically, the project examined whether examination scores such as ACT and Compass scores; graduating high school GPA/percentile; and Pell Grant eligibility accurately identify students at-risk of dropping out or leaving the institution. In addition, key milestones during a student's freshman year (early registration,

participation in a First Year Experience course, and declaring a major), were examined to determine whether these achievements predicted a student's ability to be retained and persist towards degree completion within the critical first year of enrollment.

Chapter III

Methodology

This chapter describes details surrounding the characteristics of participating subjects, and provides a brief background of the setting and institutional culture of the institution of study. A depiction of the instruments used to conduct both a quantitative and qualitative analysis of the data are also included and each independent variable that will be examined is described along with the associated statistical method used in the evaluation process. Finally, a brief progression of events that led to this research project is covered to provide historical context.

Purpose

Considering the complex nature of retention and persistence, the purpose of the current project was to examine individual factors which may assist institutions in predicting first to second semester retention rates of freshmen students enrolled at a rural community college, located in Missouri. More specifically, the project examined whether entrance/placement examination scores such as ACT and Compass scores; graduating high school GPA/percentile; and Pell Grant eligibility accurately identified students at-risk of dropping out or leaving the institution. In addition, key milestones during a student's freshmen year (early registration, Participation in a First Year Experience (FYE) course, and declaring a major were examined to determine whether these achievements predict a student's ability to be retained and persist towards degree completion within the critical first year of enrollment.

Participants

Agency Record participants included over 3,000 (1,933 females, 1,418 males) first semester college students enrolled at a rural community college located in southwestern Missouri between Fall 2011 and Fall 2013. After controlling for cases consisting of missing or incomplete data, the final sample consisted of 1,150 (674 females, 476 males) first semester freshmen. In addition, survey data was gathered on 97 second semester students enrolled during the Spring 2016 semester.

Request for Problem in Practice.

The request for problem in practice (RFP) is an 11-page document which was sent to various institutions in order for the research team to select a high-leverage problem of study. The application included summary and background information on the Ed.D. program in which the researchers were actively enrolled and it stated the purpose of the application as well as outlined benefits associated with the research team evaluating the proposed problem. Finally, the application provided a timeline for completion of the study, guidelines for submitting a proposal, as well as listed criteria used for evaluating submitted proposals. The RFP can be found in Appendix A.

RFP Selection Procedure.

For the following dissertation in practice, the dissertation group made the decision to seek a high leverage problem of practice as a means to acquire valuable educational, assessment, and leadership experience. The first step was to prepare a request for proposal (RFP). The format of this RFP was similar to that used by organizations seeking bids from companies; however, the request was unique in that the researchers proposed that an institution both request a problem and propose a client-based partnership in

identifying solutions (Appendix A). The team considered and incorporated many elements including timeline, budget, and partner and problem characteristics. It was important that the proposal be worded to attract a problem of practice whose solution could have high leverage impact.

After numerous revisions by the researchers, the finalized RFP was sent to several colleges and universities in the region. The researchers received two detailed proposals in response to the RFP, which were read and discussed by the team. After deliberating pros and cons of each proposal, the researchers discussed what additional information was needed. Each institution was given an opportunity to make a presentation to the team.

The dissertation team selected a community college, in a rural area, located in southwestern Missouri for the problem of practice. The community college, established in 1963, has experienced a consistent increase in enrollment since the year 2000 with a current student population of 5,500 to 6,000 students. Although enrollment numbers have historically risen, the ability to retain those students has not followed suit. The institution reports only 20 to 30% of the student body complete their degree and 1,000 drop out between the fall and spring semesters. While the Vice President cited a number of reasons for the drop out and low completion rates, such as students leaving for a job or coming only to explore a major, the administration believed many students come to the institution unprepared for college level work, receiving D, F, and W grades in general education courses. Many students were also taking multiple developmental or remedial classes. The school was interested in developing support strategies, both to better prepare high school students for college and to increase student success in general education courses.

Following final selection, the institution was contacted and informed of the team's decision. A few weeks later the researchers contacted the institution in order to schedule a telepresence meeting in order to gather additional information. The telepresence meeting lasted four hours and gave the dissertation team the opportunity to gather information from various departments at the college (admissions, career services, student support services, student success, enrollment as well as several faculty members). A complete list of questions can be found in Appendix B of the document.

After the telepresence meeting, the team met to debrief and determine additional questions. The team met again a few weeks later and determined variables for study (ACT, SAT, and Compass scores; high school GPA and high school rank; and Pell Grant eligibility). Once this was determined, the college was contacted once again and agency records were requested from the Vice President of Student Affairs. Records were then exported from Microsoft Excel 2010 to the Statistical Package for the Social Sciences, 22ed. (SPSS 22) where regression analyses were conducted on entrance/placement examination scores, high school GPA, and high school percentile and Chi Square analyses were performed on Pell Grant eligibility to determine predictability of students being retained the following semester.

Setting

The community college is located in a rural area that is receiving tax dollars from only two counties, but it is assigned to serve nine counties and is the only public community college in the area. In addition to the main campus, the institution has three full service attendance centers, with the majority of the student population coming from within a 100-mile radius of the main campus. In 2012, 45% of the student body was

considered full-time (12+ credit hours per semester) and 55% were attending as part-time students. Full-time faculty members instruct 43% of the college classes, while adjunct faculty members teach 57% of the classes. The main competitor for the community college is a public baccalaureate degree granting institution 20 miles from the main campus that has an equivalent student population of approximately 5,500 students. The community college does provide residential accommodations and approximately 200 students, mainly student athletes, currently reside on campus.

The population demographics of the rural area surrounding the community college consists of 19% living at or below poverty level and 16% of households speak a language other than English at home. It is a highly agricultural area that has an 11% Hispanic population as compared to the statewide average of 3%. Foreign-born residents in the area comprise 9.2% of the population when compared to 3% statewide. Educational attainment is also lower in the region when compared to state wide numbers with 8.7% of the local population consisting of less than a 9th grade education versus 4% statewide.

Research Design.

Agency records were requested by the research team from the institution selected for study. All records were submitted to the research team by administrators of the selected institution. Agency records were submitted in Microsoft Excel 2010 format and highlighted first to second semester enrollment of freshmen students enrolled between Fall 2011 and Fall 2013. Other variables included in the excel database were participant cohort year, ACT Composite Score, ACT Math Score, ACT English Score, ACT Reading Score, ACT Science Score, Compass Math Score, Compass Reading Score, Compass

Writing Score, High School Rank, High School GPA, sex, ethnicity, 2011-2013 Term 1 GPA, whether the student had ever received the Pell Grant, and 2011-2013 cohort return.

For the purpose of the study, all agency records were exported into the Statistical Package for the Social Sciences, 22 ed. (SPSS 22). All names were deleted from the submitted records, and replaced with participant ID numbers in order to protect participant anonymity. ACT scores were coded using a scale of 1 through 36, where the number one indicated the lowest score possible and the number 36 indicated the highest score possible. Compass scores ranged from 0 (lowest) to 100 (highest). High school GPA was calculated using a scale of 0.0 (lowest) to 4.0 (highest). Sex was coded as M for male and F for female. Term 1 GPA was coded on a scale of 0.0 (lowest) to 4.0 (highest). All cases including GPAs based on a grading scale above 4.0 were eliminated to provide consistency of results. Pell Grant status was coded as Y if the student had ever received the Pell Grant and N if the student had never received the Pell Grant. Cohort Return was coded as 1 if the student enrolled in courses the following semester and 0 if the student did not re-enroll his or her second semester. All data provided through agency records were analyzed using linear and cubic regression. An agency record sample can be found in Appendix C.

Questionnaire Instrument.

For the purpose of the current study, a 24-item survey was locally developed. Items one through six were directly related to course registration. Items seven through 11 requested information pertaining to demographics and background. Items 12 through 15 related directly to financial aid or monetary concerns as it relates to funding one's education. Items 16-24 were designed to gain an understanding of the impact various

milestones may have on retention factors, specifically the independent variables of time of registration, participating in a first year experience course, and declaration of major. Questions 16, 19, and 22 pertained to early/late registration. Items 17, 20, and 23 pertained to participation/non-participation in First Year Experience courses. Items 18, 21, and 24 related to enrolling/not enrolling in college with a declared major and how students perceived the variables as impacting their decision to persist the following semester. A complete list of survey questions can be found in Appendix E of the document.

Item one pertained to the student's current enrollment status. Students were given the option of selecting full-time or less than full-time. Question two related to the number of courses in which a student was currently enrolled. Students were given the option of indicating one, two, three, or four or more courses. Item three referred to the number of credit hours in which a student was currently enrolled. The student was able to select one of five options: one through three; four through six; seven through nine; ten through 12; and more than 12. Item four requested information about whether a student was enrolled in any remedial/developmental courses. The student was given the option of indicating yes or no to this question. Item five related to whether a student had added or dropped any classes within the first 21 days of the semester. The student was able to respond by indicating one of three responses: 1) yes, without discussing with an advisor or staff member; 2) yes, after discussing it with an advisor or staff member; or, 3) no, I did not drop any courses. Item six pertained to when the student registered for courses during his or her first semester. The student was given six options from which to choose, including a choice of over 60 days prior to the start of the term; 30-59 days prior; 7-29 days prior; the

week before classes began; during the first week of classes; or after the first week of classes.

Item seven pertained to the participating student's high school GPA. A student could indicate A; A- to B+; B; B- to C+; C; or C- or lower. Item eight requested information pertaining to the student's gender. The student had the option of indicating male, female, or other. Item nine pertained to ethnic identification. The student was able to choose one of seven options: American Indian or Native American; Asian, Asian American, or Pacific Islander; Native Hawaiian; Black or African American, Non-Hispanic; Hispanic, Latino, or Spanish; Caucasian; or other. Item 10 referred to the highest certificate or degree a student had received. The student was able to choose one of seven options: (none; GED; High School diploma; vocational/technical certificate; Associate degree; Bachelor's degree; or Master's, Doctoral, or Professional degree). Item 11 referred to whether the student's goal for attending college was to gain professional experience; complete a certificate program; obtain an Associate degree; or transfer to a four-year institution.

Item 12 referred to whether or not the student had submitted his or her Free Application for Federal Student Aid (FAFSA). Students were given the option to choose yes; maybe; do not remember; or don't know what FAFSA is. Item 13 referred to the main reason that the student did not complete the FAFSA. The student was able to choose one of five options (did not want to provide sensitive information; the form was too complicated to complete; did not think that I would qualify for financial assistance; did not need financial assistance; or other). Item 14 pertained to how the student was paying for college. The student was able to choose from the following response options: own

money; parents' or family money; scholarships/grants; loans; or other. Item 15 asked the student whether the financial support he or she received was enough to cover expenses (i.e. tuition, books, etc.). Students were able to choose one of three options (yes; no; I did not file for financial assistance at this college).

Item 16 referred to whether the student registered 30 days prior to the start of the term during his or her first semester of college. The student was able to indicate yes or no in response to this question. Item 17 referred to whether the student was enrolled in a first year experience course during the first semester in college. The student was given the option of answering yes or no. Item 18 related to whether or not the student enrolled in college and had selected/declared a major at that time. The student was able to respond by indicating yes or no. Items 19 through 21 referred to student perception regarding how registering early/not registering early; participation/non participation in a First Year Experience course; or declaring/not declaring a major impacted his or her decision to re-enroll during the Spring 2016 semester. Students were given the option of indicating 1) no affect; 2) somewhat affected; or 3) significantly affected their decision to re-enroll the following semester. Item 22 allowed the student to provide a qualitative response regarding how registering early, or not registering early impacted his or her decision to reenroll during the second semester. Item 23 allowed the student to provide a qualitative response regarding how participation/non-participation in a first year experience course impacted his or her decision to enroll in school second semester. Item 24 allowed the student to provide a qualitative response regarding how declaring/not declaring a major impacted his or her decision to re-enroll. All survey questions were entered into Qualtrics

for administration. A link to the survey was sent via email to potential students to complete.

Procedure

Survey questions were piloted by administering the survey to several First-Year Experience (FYE) courses at the investigators' primary institution (to assess content validity). Thirty-three students completed the initial administration of the retention survey. Following completion of the survey, results were checked for reliability and validity. All surveys were reviewed to determine whether the information gleaned from the survey matched the intended data that the researchers hoped to gain (internal consistency reliability). Special attention was targeted on survey items that were unclear, or vague. After analyzing the pilot surveys, two questions were added to the assessment to gather additional information regarding course registration; three questions were added which asked participants to rate how early/late registration, participation/non-participation in a First Year Experience (FYE) course, and declaring/not declaring a major impacted a student's decision to enroll/not enroll in courses during his/her second semester; and three open-ended questions were reworded to eliminate confusion regarding the type of information requested by the researchers.

Survey questions were sent to the Vice President of Student Affairs at the institution of study. Surveys were administered through electronic means to all freshman students. Each student received a link via email asking him or her to complete the necessary consent form for participation in the study (Appendix D) as well as a short survey regarding retention, utilizing Qualtrics (Appendix E). Students were given approximately two weeks to complete the assessment. Once the two weeks had expired

all results were exported into SPSS where descriptive and inferential statistics were performed. Each student participating in the survey was entered into a drawing to receive one of two \$50 Visa gift cards.

Data Analysis Procedure

Regression analyses were conducted on entrance/placement examination scores, high school GPA and high school percentile and Chi Square analyses were conducted on Pell Grant eligibility to determine the strongest influencing factors and to understand if one variable had a more robust relationship with persistence than another. After the factors which predicted a student's ability to be retained had been identified, Chi Square Analyses were conducted to determine whether key milestones during a student's freshman year (early registration, participation in a First Year Experience course, and declaring a major) predicted a student's ability to be retained and persist towards degree completion within the critical first year of enrollment.

In addition to the quantitative analysis, qualitative data was gathered to allow students to elaborate on their perceptions of the most effective milestones within the first semester that impacted their desire to continually enroll. In particular, the following research questions were addressed:

- 1) Do entrance/placement examination scores predict first to second semester retention of freshmen students?
- 2) Does high school GPA or percentile/rank predict first to second semester retention of freshmen students?
- 3) Does Pell Grant eligibility predict first to second semester retention of freshmen students?

- 4) Does early registration (defined as prior to 30 days of the start of the term) during the first semester impact first to second semester retention of freshmen students when compared to those who registered late (within 30 days of the start of the term) during their first semester?
- 5) Does participation in a First Year Experience course impact first to second semester retention rates of freshmen students, when compared to those who did not participate in a First Year Experience course?
- 6) Does declaring a major impact first to second semester retention rates of freshmen students, when compared to those who were undecided during their first semester?

In addition, the researchers had the following hypotheses:

- 1) Students with higher exam scores would be more likely to return the second semester.
- 2) Students with higher high school GPAs would be more likely to return to school the second semester.
- 3) Students receiving the Pell Grant would be less likely to be retained than students who did not qualify for the Pell Grant.
- 4) Students who register prior to 30 days of the start of the term would be more likely to be retained than students registering within the first 30 days of the semester.
- 5) Students participating in a First Year Experience (FYE) course their first semester would be more likely to be retained than students not participating in a FYE.

- 6) Students beginning the start of the academic term with a major in mind would be more likely to be retained than students enrolling in college as an undeclared major.

After reviewing the various relational perspectives, intervention strategies were recommended to assist the college in reducing attrition between the fall and spring semesters. Suggested interventions were based upon best practices identified from the research literature and were proposed as policy changes to help drive persistence at the institution.

Explanation of Statistical Procedures

Linear Regression.

Simple linear regressions were performed in order to answer the following research questions: do entrance and admission examination (ACT and Compass) scores predict first to second semester retention of freshmen students, and does high school GPA/percentile predict first to second semester retention of freshmen students. Both research questions used interval (high school GPA) or ordinal (ACT and Compass scores as well as high school percentile) data (independent variables) to predict the dependent variable (first to second semester retention of freshmen students) which utilized nominal data.

A simple linear regression was used to examine the relationship between one or more independent variables with a dependent variable. In most cases, a regression is performed when a researcher wants to forecast the effect that one or more independent variables has on a dependent variable. A linear regression produces a scatterplot which seeks to generate a line of best fit. The more data points falling along the line of best fit,

the higher the relationship between the dependent and independent variables. A perfect relationship is given +/- 1.0. A negative in front of the number is indicative of a negative relationship (as one variable increases, the other variable decreases). A positive relationship is given a positive score, meaning as one variable increases/decreases, the other variable, in turn increases or decreases (Brase and Brase, 2003).

A simple linear regression was the best statistical test to use because it allowed an individual to use a score to predict an end result, in this case a student's likelihood of being retained. While other statistical tests were available, a linear regression allowed the researchers to determine the strength of each independent variable in relation to predicting retention. From this, the researchers were able to provide the institution of study a list of risk factors which may predict that a student may struggle as well as resiliency factors which can be used to predict student success, or an increased likelihood of being retained.

Many studies have been conducted to illustrate risk factors which may negatively impact a student's ability of being retained. The current analysis was able to build upon current literature by highlighting protective factors (i.e. characteristics associated with a student persisting one semester to the next) as well. Although many studies have been conducted examining retention at four-year institutions, the amount of literature examining these factors at two-year institutions is rather small in comparison (Cohen, Brawer, and Kisker, 2014). The current study also built upon literature by providing a comprehensive look at factors effecting retention rates at the community college level. Results of each linear regression were presented in the form of a table. An example can be found in Table 3.

Table 3

Sample Table-ACT, SAT and Compass Score Effect on Retention with Fictional Data

Dependent Variable	Independent Variable	Scatterplot (Does the Regression Line Fit the Data?)	Correlation Coefficient, R	Correlation Coefficient, R ²	Standard Error of the Estimate	Regression Line Significance	Significance for Independent Variable
2011-13 Cohort Return/Enrollment 2012_08	ACT Composite Score	No	.112	.013	.479	.001	.976 (Drop)
2011-13 Cohort Return/Enrollment 2012_08	ACT Math	No	.147	.022	.477	.000	.334 (Drop)
2011-13 Cohort Return/Enrollment 2012_08	ACT Reading	No	.119	.014	.479	.000	.676 (Drop)
2011-13 Cohort Return/Enrollment 2012_08	Compass Math	No	.177	.031	.491	.000	.545 (Drop)

Note: All data illustrated in the table are fictional.

Chi-Square Analyses.

Chi-Square Analyses were performed in order to answer the following research questions: does Pell Grant eligibility predict first to second semester retention of freshmen students; does early registration during the first semester impact first to second semester retention of freshmen students, when compared to those who register late; does participation in a first year experience course impact first to second semester retention of freshmen students, when compared to those who did not participate in a first year experience course; and does declaring a major impact first to second semester retention rates of freshmen students, when compared to those who were undecided during their

first semester? All research questions used independent variables in the form of nominal data (received/never received the Pell Grant; early registration/registering after the start of the term; participation/non-participation in a first year experience course; and declaring/not declaring a major during the first semester) to predict the dependent variable (first to second semester retention of freshmen students) which also utilized nominal data.

The Chi Square statistic is used to investigate whether distributions of categorical variables differ from one another. More specifically, the Chi Square statistic is used when a researcher uses a nominal independent variable to determine whether there is a relationship with a nominal dependent variable. If the Chi Square statistic is significant, the independent and dependent variables are related. If the Chi Square statistic is not significant, the independent and dependent variables are categorized as being independent from one another (Brase and Brase, 2003).

The Chi Square statistic was the best statistical test to use to determine whether there was a relationship between two nominal variables. Although other statistical tests exist, the Chi Square statistic provided the most salient estimate. The current study built upon previous literature by providing a comprehensive look at factors effecting retention rates at the community college level. Results of each Chi Square Statistics was presented in the form of a table. Examples can be found in Tables 4 through 8.

Table 4

Sample Table-Received/Not Received Pell Grant- Effect on Retention Using Fictional Data

	Received Pell Grant	No Pell Grant	Total
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Returned to School	56	72	128
Second Semester			
Did Not Return to	72	56	128
School Second			
Semester			
Total	128	128	N = 256

Note: All data illustrated in the table are fictional.

Table 5

Sample Table-Type of High School Attended Effect on Retention Using Fictional Data

	Public	Private	Total
Returned to School	56	72	128
Second Semester			
Did Not Return to	72	56	128
School Second			
Semester			
Total	128	128	N = 256

Note: All data illustrated in the table are fictional.

Table 6

Sample Table-Early/Late Registration Effect on Retention Using Fictional Data

	Early Registration	Late Registration	Total Registered
Returned to School	56	72	128

Second Semester			
Did Not Return to	72	56	128
School Second			
Semester			
Total	128	128	N = 256

Note: All data illustrated in the table are fictional.

Table 7

Sample Table-Participation/Non-Participation in FYE Course Effect on Retention Using Fictional Data

	Participation in FYE	Non-Participation in FYE	Total
Returned to School	56	72	128
Second Semester			
Did Not Return to	72	56	128
School Second			
Semester			
Total	128	128	N = 256

Note: All data illustrated in the table are fictional.

Table 8

Sample Table-Declaring/Not Declaring a Major Effect on Retention Using Fictional Data

	Declared a Major	Undecided	Total
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Returned to School	56	72	128
Second Semester			
Did Not Return to	72	56	128
School Second			
Semester			
Total	128	128	N = 256

Note: All data illustrated in the table are fictional.

Explanation of Qualitative Procedures

All Qualitative data, collected through the retention survey, was analyzed and coded according to the steps outlined in Seidman's 2013 text by using the Grounded Theory Approach. After qualitative data had been gathered, the responses were read through several times, highlighting important statements. After this, main points from each highlighted text were identified and a general description was provided summarizing main points. While reading through main points, information was grouped together based upon themes. Once all themes had been identified, general codes were assigned. Once a sample code book had been constructed, responses were reviewed a second time and main passages were once again highlighted. Themes were checked for consistency and items were regrouped to ensure a "good fit" between subcategories and categories.

By collecting qualitative data, the researchers hoped to expand on students' perceptions of the most effective milestones (declaring/not declaring a major; participation/non-participation in a first year experience course; and early/late registration) within the first semester related to their continuing enrollment. By gathering

qualitative data, the researchers were able to assess/pinpoint particular behaviors, needs, desires and routines that quantitative data was unable to produce.

Most studies addressing college student retention are quantitative in nature. The current study added to the current body of literature by utilizing qualitative data to provide individual stories to explain differences in quantitative data. By utilizing a mixed methods methodology, the researchers hoped to lay the ground work for future studies to model in order to obtain a more comprehensive look at factors affecting retention.

Summary

Overall, the concept of retention is multifaceted and complex. In order to appropriately pinpoint risk factors and milestones which may impact a student's ability to be retained his or her second semester, a mixed methods methodology was used (incorporating agency records provided by the institution of study as well as survey data utilizing both quantitative and qualitative methodology). Chapter four will describe and provide interpretation of the results of the study. Chapter five will briefly summarize the results and will give recommendations for addressing retention issues based upon best practices within the research literature as well as highlight strengths, limitations, and recommendations for future research.

Chapter IV

Results

Purpose

Considering the complex nature of retention and persistence, the purpose of the current project was to examine individual factors that predict first to second semester retention rates of freshmen students enrolled at a rural community college located in Missouri. More specifically, the project examined whether entrance/placement examination scores such as ACT and Compass scores; graduating high school GPA/percentile (rank); and Pell Grant eligibility accurately identified students at-risk of dropping out or leaving the institution.

In addition, a survey was also created to determine selected resiliency factors which might lead a student to continue to degree completion. Resiliency factors examined during the course of the project included the following: (1) registering/not registering 30 days prior to the start of the semester; (2) participation/non-participation in a First Year Experience/Introduction to College course; and (3) declaration of a major when enrolling in college as opposed to enrolling in college as an undeclared major. In addition to the quantitative analysis conducted on resiliency factors, qualitative data were also gathered through the use of open-ended survey questions designed to allow students to elaborate on their perceptions of the milestones that positively impacted the first semester and their desire to continually enroll.

The overall goal of the project was to recommend intervention strategies for the participating institution in order to reduce attrition between the fall and spring semesters. Suggested interventions were based upon best practices identified from the research

literature and were proposed as policy changes to help improve persistence at the institution.

Agency Records

Agency records were requested by the research team from the selected institution. All records were submitted to the research team by administrators of the selected institution. Agency records were submitted in Microsoft Excel 2010 format and highlighted first to second semester enrollment of freshmen students enrolled between Fall 2011 and Fall 2013. Other variables included in the excel database were participant cohort year, ACT composite score, ACT math score, ACT English score, ACT reading score, ACT science score, Compass math score, Compass reading score, Compass writing score, high school rank, high school GPA, sex, ethnicity, 2011-2013 Term 1 GPA, whether the student had ever received the Pell Grant, and whether the student participated in the 2011-2013 cohort.

For the purposes of this study, all agency records were exported into the Statistical Package for the Social Sciences, 22 ed. (SPSS 22). All names were deleted from the agency records and replaced with participant ID numbers in order to protect participant anonymity. ACT scores were coded using a scale of 1 through 36, whereas the number one indicated the lowest score possible and the number 36 indicated the highest score possible. Compass scores ranged from 0 (lowest) to 100 (highest). High school GPA was calculated using a scale of 0.0 (lowest) to 4.0 (highest). Sex was coded as “M” for male and “F” for female. Term 1 GPA was coded on a scale of 0.0 (lowest) to 4.0 (highest). Pell Grant status was coded as “Y” if the student had ever received the Pell Grant and “N” if the student had never received the Pell Grant. Cohort Return was coded

as “1” if the student enrolled in courses the following semester and “0” if the student did not re-enroll. All data provided through agency records were analyzed using linear regression. An agency record sample can be found in Appendix C.

Explanation of Statistical Procedures.

Linear Regressions.

Simple linear regressions were performed in order to answer the following research questions:

- 1) Do entrance/placement examination (ACT and Compass) scores predict first to second semester retention of freshmen students?
- 2) Does high school GPA/percentile (rank) predict first to second semester retention of freshmen students?

Both research questions used interval (high school GPA) or ordinal (ACT and Compass scores as well as high school percentile) data (independent variables) to predict the dependent variable (first to second semester retention of freshmen students), which consisted of nominal data.

Simple linear regression is used to examine the relationship between one or more independent variables and one dependent variable. In most cases, a regression analysis is performed when a researcher wants to forecast the effect that one or more independent variables has on a dependent variable. Linear regressions produce a scatterplot which seeks to generate a line of best fit. The more data points falling along the line of best fit, the higher the relationship between the dependent and independent variables. A perfect relationship is given +/- 1.0. A negative number is indicative of a negative relationship (as one variable increases, the other variable decreases). A positive relationship yields a

positive score, because as one variable increases/decreases, the other variable, in turn increases or decreases (Brase and Brase, 2003).

Simple linear regression was the best choice of statistical test because a score can be used to predict an outcome, and in this case, the likelihood that a student would be retained. While other statistical tests were available, a linear regression allowed the researchers to determine the strength of each independent variable in relation to predicting retention. Consequently, the researchers were able to provide the institution of study a list of risk factors which may predict whether a student is likely to struggle, as well as resiliency factors which could be used to predict student success or an increased likelihood of being retained.

Chi Square Statistic.

Chi-Square Analyses were performed in order to answer the following research questions:

- 3) Does Pell Grant eligibility predict first to second semester retention of freshmen students?
- 4) Does early registration during the first semester impact first to second semester retention of freshmen students as compared to those who register late?
- 5) Does participation in a first-year experience course impact first to second semester retention of freshmen students as compared to those who did not participate in a first year experience course?
- 6) Does declaring a major impact first to second semester retention rates of freshmen students as compared to those who had not declared a major during their first semester?

The research questions utilized independent variables that consisted of nominal data (received/never received the Pell Grant; early registration/registering after the start of the term; participation/non-participation in a first year experience course; and declaring/not declaring a major during the first semester) and these were used to predict the dependent variable (first to second semester retention of freshmen students) which was also nominal data.

Although the researchers anticipated making comparisons regarding first and second semester enrollment/non-enrollment for freshmen students sampled in relation to the independent variables used in the study, comparisons could not be made due to a zero percent response rate from students who were not currently enrolled during the second semester of their freshmen year. As a result, comparisons were made based upon full-time/part-time enrollment in relation to the independent variables of early/late registration; participation/non-participation in a First Year Experience Course; and declaring a major/undecided.

The Chi Square statistic is used to investigate whether distributions of categorical variables differ from one another. More specifically, the Chi Square statistic is used when a researcher uses a nominal independent variable to determine whether there is a relationship with a nominal dependent variable. If the Chi Square statistic is significant, the independent and dependent variables are related. If the Chi Square statistic is not significant, the independent and dependent variables are categorized as being independent from one another (Brase and Brase, 2003).

The Chi Square statistic was the best statistical test to use to determine whether there was a relationship between two nominal variables. Although other statistical tests exist, the Chi Square statistic provided the most salient estimate.

Participants.

Participants from the initial agency record dataset, provided by the institution of study, included a total of 3,352 ($F = 1,963$, $M = 1,389$) first-semester students. After controlling for cases consisting of missing or incomplete data, 2,252 student records were removed. The following agency record results are based on a final sample of 1,150 ($F = 674$, $M = 476$) first-semester students.

Linear Regressions- ACT/Compass Scores and High School GPA/Rank.

Research Question.

- 1) Do entrance/placement examination (ACT and Compass) scores predict first to second semester retention of freshmen students?

ACT Composite Score.

Overview.

A simple linear regression was performed to determine whether ACT Composite scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (ACT Composite) variable. The scatterplot contained many outliers with few data points falling

along the regression line ($\text{Retention} = .580 + .006 * (\text{ACT Composite}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

The standard error of the estimate for the model summary was .467, which was a strong indicator of significance. The correlation coefficient (r) was .120, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .014, which indicated that very little variance in retention was explained by ACT Composite score. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, it was concluded that there was not a strong correlation between ACT Composite score and the percentage of students who returned to the participant institution during their second semester.

ANOVA.

The analysis of variance table revealed that the probability value (p-value) was .000, ($p \leq .05$). Since the p-value was less than or equal to 0.05, it was concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

Upon review of the regression coefficient table, it was determined that the y-intercept ($B_0 = .580$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .006$) was found to be significant at the .000 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .580 + .006 * (\text{ACT Composite}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .014, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that ACT Composite score should be used as a salient factor in predicting first to second semester retention of freshmen students.

ACT Math Score.

Overview.

A simple linear regression was performed to determine whether ACT Math scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (ACT Math) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .326 + .019 * (\text{ACT Math}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

A review of the model summary indicated that the standard error of the estimate was .467, which was a strong indicator of significance. The correlation coefficient (r) was .120, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .014, which indicated that very little variance in retention was explained by the ACT Math score. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, we concluded that there was not a strong correlation

between ACT Math score and the percentage of students who returned to the participant institution during their second semester.

ANOVA.

The analysis of variance table revealed that the probability value (p-value) was .000, ($p \leq .05$). Since the p-value was less than or equal to 0.05, it was concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

Upon review of the regression coefficient table, it was determined that the y-intercept ($B_0 = .326$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .019$) was significant at the .000 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .326 + .019 * (\text{ACT Math}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .014, the low p-values overrode the low R^2 value. It was the recommendation of the researchers that ACT Math score should be used as a salient factor in predicting first to second semester retention of freshmen students.

ACT Reading Score.

Overview.

A simple linear regression was performed to determine whether ACT Reading scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (ACT Reading) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .507 + .008 * (\text{ACT Reading}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

With regard to the model summary, the standard error of the estimate was .469, which was a strong indicator of significance. The correlation coefficient (r) was .085, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .007, which indicated that very little variance in retention was explained by ACT Reading scores. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, we concluded that there was not a strong correlation between ACT Reading and the percentage of students who returned to the institution of study their second semester.

ANOVA.

In the analysis of variance table, the probability value (p-value) was .004, ($p \leq .05$). Since the p-value was less than or equal to 0.05, we concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

In the regression coefficient table, the y-intercept ($B_0 = .507$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .008$) was significant at the .004 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .507 + .008 * (\text{ACT Reading}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .007, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that ACT Reading score should be used as a salient factor in predicting first to second semester retention of freshmen students.

*ACT English Score.**Overview.*

A simple linear regression was performed to determine whether ACT English scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (ACT English) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .473 + .011 * (\text{ACT Writing}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

In the model summary, the standard error of the estimate was .468, which was a strong indicator of significance. The correlation coefficient (r) was .102, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .010, which indicated that very little variance in retention was explained by ACT English score. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, we concluded that there was not a strong correlation between ACT

English score and the percentage of students who returned to the participant institution during their second semester.

ANOVA.

The analysis of variance table revealed that the probability value (p-value) was .001, ($p \leq .05$). Since the p-value was less than or equal to 0.05, we concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

The regression coefficient table indicated that the y-intercept ($B_0 = .473$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .011$) was significant at the .001 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .473 + .011 * (\text{ACT English}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .010, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that the ACT English score should be used as a salient factor in predicting first to second semester retention of freshmen students.

Compass Math Score.

Overview.

A simple linear regression was performed to determine whether Compass Math scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (Compass Math) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .539 + .011 * (\text{Compass Math}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

In the model summary, the standard error of the estimate was .464, which was a strong indicator of significance. The correlation coefficient (r) was .161, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .026, which indicated that very little variance in retention was explained by Compass Math scores. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, we concluded that there was not a strong correlation between Compass Math score and the percentage of students who returned to the participant institution during their second semester.

ANOVA.

In the analysis of variance table, the probability value (p-value) was .000, ($p \leq .05$). Since the p-value was less than or equal to 0.05, we concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

In the regression coefficient table, the y-intercept ($B_0 = .539$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .001$) was significant at the .000 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .539 + .001 * (\text{Compass Math}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .026, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that the Compass Math score should be used as a salient factor in predicting first to second semester retention of freshmen students.

*Compass Reading Score.**Overview.*

A simple linear regression was performed to determine whether Compass Reading scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (Compass Reading) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .698 + .000 * (\text{Compass Reading}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

A review of the model summary indicated that the standard error of the estimate was .470, which was a strong indicator of significance. The correlation coefficient (r) was .061, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .004, which indicated that very little variance in retention was explained by the Compass Reading scores. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, we concluded that there was not a strong

correlation between Compass Reading score and the percentage of students who returned to the participant institution during their second semester.

ANOVA.

In the analysis of variance table, the probability value (p-value) was .038, ($p \leq .05$). Since the p-value was less than or equal to 0.05, it was concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

In the regression coefficient table, the y-intercept ($B_0 = .698$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .000$) was significant at the .038 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .698 + .000 * (\text{Compass Reading}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .004, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that the Compass Reading score should be used as a salient factor in predicting first to second semester retention of freshmen students.

Compass Writing Score.

Overview.

A simple linear regression was performed to determine whether Compass Writing scores might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (Compass Writing) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .688 + .000 * (\text{Compass Writing}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

In the model summary, the standard error of the estimate was .470, which was a strong indicator of significance. The correlation coefficient (r) was .030, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .001, which indicated that very little variance in retention was explained by Compass Writing scores. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, it was concluded that there was not a strong correlation between Compass Writing score and the percentage of students who returned to the participant institution their second semester.

ANOVA.

In the analysis of variance table, the probability value (p-value) was .314, ($p \geq .05$). Since the p-value was greater than or equal to 0.05, it could not be concluded that the scores were obtained by random error/chance.

Coefficients.

In the regression coefficient table, the y-intercept ($B_0 = .688$) was significant at the .000 level ($p \leq .05$). In contrast, the slope ($B_1 = .000$) was significant at the .314 level ($p \geq .05$). Results indicated that there was no significant difference between the independent and dependent variables ($\text{Retention} = .688 + .000 * (\text{Compass Writing}) + \epsilon$).

Overall Findings.

Due to a low R^2 value of .004, and high p-values, it was the recommendation of the researchers that Compass Writing scores should not be used as a salient factor in predicting first to second semester retention of freshmen students.

Entrance Examination Scores-Hypotheses and Results.

It was predicted that students with higher entrance examination scores would be more likely to return to school the second semester, and in fact, that independent variable was determined to be a significant factor affecting retention, with the exception of the Compass Exam Writing component. However since the ACT Composite, ACT Math, ACT Reading, ACT English, Compass Math, and Compass Reading scores all resulted in significant correlations with re-enrollment, we can conclude that the research confirmed the hypothesis related to examination scores and within year persistence.

Research Question.

2) Does high school GPA/percentile (rank) predict first to second semester retention of freshmen students?

*High School GPA.**Overview.*

A simple linear regression was performed to determine whether high school GPA might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (high school

GPA) variable. The scatterplot contained many outliers, with few data points falling along the regression line ($\text{Retention} = .491 + .062 * (\text{high school GPA}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

Upon review of the model summary, it was determined that the standard error of the estimate was .466, which was a strong indicator of significance. The correlation coefficient (r) was .132, which indicated a low positive relationship between the two variables. In addition, the R-squared value was .017, which indicated that retention and GPA had less than two percent of variance in common. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, it was determined there was not a strong correlation between high school GPA and the percentage of students who returned to the participant institution their second semester.

ANOVA.

The analysis of variance results indicated that the probability value (p-value) was .000, ($p \leq .05$). Since the p-value was less than or equal to 0.05, it could be concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

Upon review of the regression coefficient table, it was determined that the y-intercept ($B_0 = .491$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = .062$) was significant at the .000 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables ($\text{Retention} = .491 + .062 * (\text{high school GPA}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .017, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that high school GPA should be used as a salient factor in predicting first to second semester retention of freshmen students.

*High School Rank.**Overview.*

A simple linear regression was performed to determine whether high school rank might be a strong predictor in determining first to second semester retention rates of freshmen students (Table 9).

Scatterplot.

A scatterplot was initially conducted to determine whether there was a linear relationship between the dependent variable (retention) and the independent (high school rank) variable. The scatterplot contained many outliers with few data points falling along the regression line ($\text{Retention} = .726 - .001 * (\text{high school rank}) + \epsilon$), which indicated that a simple linear regression might not be a good fit.

Model Summary.

In a review of the model summary, the standard error of the estimate was .467, which was a strong indicator of significance. The correlation coefficient (r) was -.118, which indicated a low negative relationship between the two variables. In addition, the R-squared value was .014, which indicated that very little variance in retention was explained by high school rank. Since both the R-squared value and the correlation coefficient (r) were lower than 0.4, it was determined that there was not a strong

correlation between high school rank and the percentage of students who returned to the institution during their second semester.

ANOVA.

The analysis of variance table indicated that the probability value (p-value) was .000, ($p \leq .05$). Since the p-value was less than or equal to 0.05, it was concluded with 95 percent certainty that the scores were not obtained by random error/chance.

Coefficients.

Upon review of the regression coefficient table, it was determined that the y-intercept ($B_0 = .726$) was significant at the .000 level ($p \leq .05$). Likewise, the slope ($B_1 = -.001$) was significant at the .000 level ($p \leq .05$). Results indicated that there was a significant difference between the independent and dependent variables (Retention = $.726 - .001 * (\text{high school rank}) + \epsilon$).

Overall Findings.

Even though the reported R^2 value was .014, the low p-values superseded the low R^2 value. It was the recommendation of the researchers that high school rank should be used as a salient factor in predicting first to second semester retention of freshmen students.

High School GPA/Rank Hypotheses and Results.

The researchers predicted that higher high school grade point averages/rank would influence whether a student was more apt to return to school his/her second term. The results indicated that high school GPA/rank has a significant correlation with retention, thereby confirming the hypothesis.

Table 9

High School GPA, High School Rank, ACT Score, and Compass Score Effect on Retention

Dependent Variable	Independent Variable	Scatter Plot (Does the Reg line fit the data?)	Correlation Coefficient, R	Correlation Coefficient squared, R ²	Standard Error of the Estimate	Regression Line Significance	Significance for Independent Variable Coefficient (drop or Retain x)	Drop or Retain IV
2011 - 13 Cohort Return/Enrollment 2012_08	High School GPA	No	.132	.017	.466	.000	.000	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	High School Rank	No	-.118	.014	.467	.000	.000	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	ACT Composite	No	.120	.014	.467	.000	.000	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	ACT Math	No	.120	.014	.467	.000	.000	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	ACT Reading	No	.085	.007	.469	.004	.004	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	ACT English	No	.102	.010	.468	.001	.001	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	Compass Math	No	.161	.026	.464	.000	.000	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	Compass Reading	No	-.061	.004	.470	.038	.038	Retain
2011 - 13 Cohort Return/Enrollment 2012_08	Compass Writing	No	-.030	.001	.470	.314	.314	Drop

Chi Square Analysis Pell Grant Eligibility.

Research Question.

3) Does Pell Grant eligibility predict first to second semester retention of freshmen students?

Summary of Results.

A Chi Square test corrected for continuity was conducted on the percentage of first semester students who did/did not receive the federal Pell Grant in relation to first to second semester retention (Table 10). Results indicated that there was not a significant relationship between receiving the federal Pell Grant and first to second semester retention rates of freshmen students, $\chi^2(1, N = 1,150) = .004, p .897, \text{Cramer's } V = .019$. The results were inconsistent with the experimenters' hypotheses and indicated that Pell Grant eligibility was not important when considering retention as a variable.

Pell Grant Eligibility Hypothesis and Results.

While the researchers hypothesized higher high school grade point averages and higher exam scores would be positively correlated with predicting returning students, the researchers hypothesized that Pell Grant recipients would be less likely to be retained than those who did not receive the Pell Grant. After examining the results, it was determined that Pell Grant status was unrelated to first to second semester retention.

Table 10

Pell Grant Eligibility Effect on Retention

	Received Pell Grant	No Pell Grant	Total
Returned to School	477	233	710

Second Semester			
Did Not Return to	294	146	410
School Second			
Semester			
<hr/>			
Total	771	379	N = 1150

Survey Instrument

For the purposes of the current study, a 24-item survey was locally developed. Items one through six were directly related to course registration. Items seven through 11 requested information pertaining to demographics and background. Items 12 through 15 related directly to financial aid or monetary concerns as it relates to funding one's education. Items 16-24 were designed to gain an understanding of the impact various milestones may have on retention factors, specifically the independent variables of time of registration, participating in a first year experience course, and declaration of major. Questions 16, 19, and 22 pertained to early/late registration. Items 17, 20, and 23 pertained to participation/non-participation in First Year Experience courses. Items 18, 21, and 24 related to enrolling/not enrolling in college with a declared major and how students perceived the variables as impacting their decision to persist the following semester. A complete list of survey questions can be found in Appendix E of the document.

Participants.

One hundred and two students completed the Student Retention Survey. After controlling for incomplete data, five surveys were removed, resulting in a final sample size of 97 ($F = 68$, $M = 27$, neither identified as male or female = 2) freshmen students.

Chi Square Analyses- Registration, FYE, and Major Declaration.**Research Question.**

- 4) Does early registration during the first semester impact first to second semester retention of freshmen students as compared to those who register late?
- 5) Does participation in a first-year experience course impact first to second semester retention of freshmen students as compared to those who did not participate in a first year experience course?
- 6) Does declaring a major impact first to second semester retention rates of freshmen students as compared to those who had not declared a major during their first semester?

Summary of Results.

A Chi Square test corrected for continuity was conducted on the percentage of second semester students who registered/did not register 30 days prior to the beginning of the semester (Table 11); the percentage of second semester students who participated/did not participate and successfully pass a First Year Experience/Introduction to College course during their first semester in college (Table 12); and the percentage of students who declared a major upon enrolling in college or those who did not declare a major upon enrolling in college in relation to first to second semester retention of freshmen students (Table 13). Although the researchers anticipated making comparisons regarding

first and second semester enrollment/non-enrollment of the freshmen students sampled in relation to the independent variables of study, comparisons could not be made due to a zero percent response rate from students who were not currently enrolled during the second semester of their freshmen year. As a result, comparisons were made based upon full-time/part-time enrollment in relation to the independent variables of early/late registration; participation/non-participation in a First Year Experience Course; and declaring a major/undecided.

Results indicated that there was not a significant relationship between early/late registration, $\chi^2(1, N = 97) = .000, p = 1.0$, Cramer's $V = .017$ (Table 11); participation/non-participation in a FYE course, $\chi^2(2, N = 97) = 4.641, p = .098$, Cramer's $V = .218$ (Table 12); and declaration of a major upon enrolling in college as an undecided major in relation to first to second semester retention of freshmen students, $\chi^2(1, N = 97) = 2.597, p = .089$, Cramer's $V = .192$ (Table 13). These results were inconsistent with the experimenters' hypotheses and indicated that early/late registration, enrolling/not enrolling in a First Year Experience course, and declaring/not declaring a major were not important factors when considering retention.

Table 11

Table-Early/Late Registration-Effect on Retention (full-time vs. part-time)

	Early Registration	Late Registration	Total Registered
Returned to School	41	13	54
Second Semester (Full-time)			

Returned to School	32	11	43
Second Semester (Less than Full- Time)			
Total	73	24	N = 97

Table 12

Participation/Non-Participation in a FYE Course-Effect on Retention (full-time vs. part-time)

	Participated/Successfully Passed FYE Course	Did Not Participate/Successfully Pass FYE Course	Did Not Know	Total
Returned to School Second Semester (Full-time)	41	4	9	54
Returned to School Second Semester (Less than Full-Time)	25	9	9	43

Total	66	13	18	N = 97
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Table 13

Declaring/Not Declaring a Major upon Initial Enrollment-Effect on Retention (full-time vs. part-time)

	Came to College with a Major in Mind	Undecided	Total
Returned to School Second Semester (Full-time)	49	5	54
Returned to School Second Semester (Less than Full- Time)	33	10	43
Total	82	15	N = 97

Qualitative Analysis-Registration, FYE Course, and Major Declaration.

Research Question.

4) Does early registration during the first semester impact first to second semester retention of freshmen students as compared to those who register late?

5) Does participation in a FYE course impact first to second semester retention of freshmen students as compared to those who did not participate in a first year experience course?

6) Does declaring a major impact first to second semester retention rates of freshmen students as compared to those who had not declared a major during their first semester?

Summary of Results.

When analyzing qualitative data from the survey, a form of grounded theory was utilized through the use of open coding (Seidman, 2013). After reading through the open-ended responses several times and highlighting key words and phrases, as well as making notes in the margins, the repetitive words/phrases were noted in both quantity and content and then assigned to a specific category or bucket. Some of the themes were overly expansive and broad, signifying the need for refinement. Upon further review, and through the process of axial coding (Seidman, 2013), it was determined that various elements or concepts were related allowing for the production of additional subcategories, and through this process, final themes emerged. Interestingly, the themes that developed supported the facets introduced in the literature review including the importance of clear expectations, support, feedback, and a sense of engagement noted by Tinto (2011) as crucial elements of retaining students. The codebook built from the analysis of the responses can be found in Appendix G.

Broad themes of preparedness, planning, and motivation/self-efficacy were evident when analyzing the responses and upon deeper interpretation, sub-categories began to evolve among the themes of preparedness and planning. It was found that the general theme of preparedness could be broken down further through expressions that spoke to the topics of availability and navigation, while the theme of planning developed

into sub-categories of goals, time to degree, and waste evolving from taking unnecessary classes.

Early/Late Registration-Retention.

Research Question.

4) Does early registration during the first semester impact first to second semester retention of freshmen students as compared to those who register late?

Summary of Results.

The concept of being prepared was salient as a dominant theme among all three open-ended questions. When describing the impact early or late registration can have on a student's decision to re-enroll, it was evident that being prepared was an influential factor. A number of comments indicated that early registration gives students a sense of preparedness. As one student stated, "Enrolling early impacted my re-enrolling by knowing I would be prepared and ready for my classes."

Additional comments reinforced the importance of a sense of preparedness for students such as: "Registering early helps your mindset and allows you to be more prepared," and "I think registering early helps you get prepared better for the upcoming semester, I feel late enrollment can be spontaneous and have more chance of having buyer's remorse" demonstrated this sentiment. The impact of clear expectations in increasing retention was reinforced by the following comments: "Registering early helped (me) prepare and start to think about what would be expected of me," and "Registering early gave me the chance to get a head start on buying my books and figuring out the things I would need for my classes."

In regards to being prepared and knowing what to expect, the role early registration plays in a student's ability to secure the classes needed in order to achieve his/her goals while also maintaining options was another dominant theme among the responses given. Availability of classes was stressed over and over and the fear that a desired class would be closed due to class size seemed to be a condition these students wanted to avoid at all costs. Comments that reinforced this theme included: "I do not have to stress about whether or not there will be room in the class," and "It's important to enroll early so you can get the class you want. The sooner you enroll the less likely it is for the class to be full."

Making sure there was some flexibility and a choice of options was also an important element for students when considering time of registration for re-enrollment. Several comments demonstrated this theme such as: "(Early Registration) helped me schedule time and work with work to adjust hours," and "If you need to re-fix your schedule, having other options helps," as well as "Enrolling early allowed me to closely revamp my personal schedule before being thrust into a whirlwind of time management logistics."

It is interesting to note that several students perceived early registration as a restriction to flexibility or reduction in the variety of options which was demonstrated by comments such as: "If I had registered to (o) early I would be afraid something would come up and I would have to drop the class. I more or less enrolled as a spur of the moment decision" or "I have more time to plan out my schedule, changing my mind is not a good idea."

Participation/Non-Participation in a First Year Experience Course-Retention.

Research Question.

5) Does participation in a first-year experience course impact first to second semester retention of freshmen students as compared to those who did not participate in a first year experience course?

Summary of Results.

In addition to the preparedness theme in relation to time of registration, it was also an obvious premise when students were asked whether participating (or not participating) in a first year experience course played a role in their decision to re-enroll. Sub-categorically, the concept of being able to navigate processes emerged from the responses given, which also sustained the importance of clear expectations, feeling supported, and a sense of engagement. A majority of comments noted how the class gave them an increased ability to navigate their college experience and the knowledge to utilize resources. For example, one student wrote, “I learned a lot about college and how critical it is to continue my education and get a degree. I learned how to re-enroll, register for upcoming semesters, and how to review my financial aid.” Other comments also spoke to the concept of navigating support tools including, “It definitely helped me to be able to navigate the web-site so I don’t feel so intimidated....” and “The course helped me use blackboard better and learn new things about xxx College.”

There was also a comment expressing a sense of engagement derived from the first year experience course: “Participating in my first year class made me meet new people and do new things.” The themes of feeling prepared and being able to navigate resources support the literature and the impact first year experience courses can have on

retention. As noted by Greenfield, Keup & Gardner (2013), the ability to use campus resources, connecting with peers and faculty, and developing skills are outcomes targeted by first year experience classes and intended to help boost retention.

This concept of increasing a student's ability to navigate processes, thereby increasing re-enrollment was true for both first-time students as well as older adult students. One student wrote, "I kinda had second thoughts about enrolling into college right when I got out of high school, but I did and I'm really glad I went ahead and participated in it while I could and didn't wait until later to start." On the other end of the spectrum, a student stated, "Having not been in school for ten years prior to starting at xxx College Orientation was very helpful in allowing me to get my bearings set for the semester," and "This was beneficial to getting me oriented to going to school again after ten years."

When asked about the FYE course, the theme of time to degree completion was also applicable, evidenced by the following comments: "It (first year experience course) also helped in managing my time to decide how many courses I could take in the next semester," and "This course encouraged me to think ahead and get all my courses planned out. I'm now ready to enroll for next semester." In addition, time to degree completion seemed to be an important factor for students who participated in the course but may not have attended college immediately upon graduation or perhaps stopped out and returned to complete their degree. For example, the following comment encompassed a tone of keen awareness regarding how past decisions impacted time to degree completion and alludes to the fact that if perhaps the student had experienced this course during his/her initial college enrollment, his/her journey may have been different:

“It would have helped me not take 11 years to go back and do a completed second semester.”

While the majority of comments involving First Year Experience courses pertained to a positive impact on re-enrollment, some students noted the class as unnecessary or too general in regards to re-enrollment, which is made evident by the following comments: “I thought the introductory was helpful, but not necessary. I’m a single mom and work full-time so having to come to that class was more than a pain,” and “The introduction college class did not impact me because it was a standard class. If it would have been directed more towards my major it would have been more interesting.”

Declaring/Not Declaring a Major-Retention.

Research Question.

6) Does declaring a major impact first to second semester retention rates of freshmen students as compared to those who had not declared a major during their first semester?

Summary of Results.

The responses in regards to the theme of planning were related to the question that dealt with whether or not declaring a major impacted a student’s decision to re-enroll. While the responses to this question also stressed the theme of preparedness, the dominant observation from the responses were related to achieving a goal by adhering to a degree plan, time to degree completion, and avoiding the action of wasting time and money on what students considered unnecessary classes. Many comments overlapped and could be considered cross-functional within each of the related sub-categories. For

example, a common sentiment was represented by this student's statement: "Since I had a major declared I knew exactly what classes I needed and got them all lined up through future semesters. This also made it possible to where I didn't have to take any unnecessary classes," and "I knew what classes to enroll into. Without knowledge of what my major would be, I would not have a specific path to follow." Further comments related to this theme included: "I declared a major, and that made me focus on certain courses and it avoided taking courses that I did not need" and "I feel like it would be a waste of my own money to go to school and not have an end goal. I could never justify paying for classes that I will end up not needing for my eventual major."

The responses were consistent with previous research, in that interest in a subject can heavily influence declaring a major and determining both progression and time to degree completion. For example, as one student commented, "I knew I have always wanted to be a nurse and it helped me get the classes I needed done and out of the way to get my RN more quickly than being undeclared," and "I think that declaring a major helped me enroll because I knew the direction I wanted to go, or at least a field that I was interested in, and that helped me pick out the classes I was able to take." Another student noted the impact skill development played in re-enrolling: "By finding a new career to start and develop a set of skills in that career."

Interestingly, the responses coincided with previous literature regarding the importance of exploration when declaring a major. As one student noted, "By declaring a major you can start taking classes that you think your future field will be related to. This helps you to determine if you'll like this field or should change your major to save you

from taking any unnecessary classes,” and “taking only broad classes instead of specialized to my field of study.”

Recurring Themes.

Time to degree completion was another topic that emerged from the responses provided by students for the open-ended question related to declaring a major. The responses indicated that students who declared a major were very conscious of the length of time they would need to complete their degree plan. As several students noted, “Declaring a major impacted my decision to re-enroll by getting me that much closer to my degree,” and “Declaring a major was good for me because, being part-time, it gave me foresight to how long I would be attending xxx before I would graduate.” However, time to degree completion was also an evident theme for students who responded to the impact of early registration: “It (early registration) made me want to ensure that I could get into the classes I need to get my degree in a timely fashion since I am currently a part-time student.”

The motivation/self-efficacy theme also emerged from the responses provided by students for all three open-ended questions. Students who reported they had declared a major felt doing so gave them more motivation to re-enroll and pursue their goal. Several students noted, “Declaring a major help(s) you to work toward an ultimate goal.” “ Keeps you more motivated,” and “It made me choose to do what I love and feel positive.” Other comments supporting the theme of motivation related to declaring a major included, “Somewhat affected me because I knew what I wanted so I kept coming back,” and “To be sure and to stick with it to get it done.”

Elements of motivation were also evident from responses provided to the question regarding early registration such as: “Registering early helped me to be well prepared and mentally ready for when classes started. Thus, it helped give a good first semester experience and I’m ready to start and enroll for next semester.” However, the milestone of completing a FYE class seemed to encompass the heaviest emphasis on responses that were related to the theme of motivation and self-efficacy. Several examples include, “It helped to realize that I could actually do college,” and “The instructor help(ed) me feel more motivated,” or “...I don’t feel so intimidated.” Additionally, students made comments indicative of the positive influence of the class such as: “They helped me with study habits and self-esteem,” “Became more motivated to finish college,” and “This class has a lot of helpful info. It gave me confidence in moving towards my degree.”

Comprehensive Qualitative Analysis Summary.

In summary, the main themes that emerged from the open-ended questions surrounding the milestones of early registration, participating in a FYE course, and declaring a major in many ways coincide with the factors noted in the literature as important elements for increasing retention. The dominant themes of feeling prepared, planning, and a sense of motivation or self-efficacy mitigate the concepts Tinto (2011) deemed as crucial for retention in knowing what to expect, feeling supported, obtaining feedback, and experiencing a sense of connection to campus. The granular aspects of the sub-categories, including the ability to navigate resources, taking steps to assure classes will be available, managing time to degree, and having options when needed can be considered practices that support Tinto’s (2011) main concepts for increasing the chances a student will persist.

Registration, FYE, and Major Declaration (Milestone)-Hypotheses and Results.

The remaining hypotheses predicted that students registering prior to 30 days of the semester, students participating in a first year experience class, and students arriving at college with a major in mind would all be more likely to return than students that did not complete these milestones, was unfortunately unable to be answered in a quantitative fashion due to the population surveyed. However, the research did find, through qualitative analysis, that these independent variables produced themes of planning, preparedness and motivation/self-efficacy, all of which have been shown to influence retention through previous studies, national survey data results, and student development theories.

Conclusion

Results of a Simple Linear Regression were consistent with the experimenters' hypotheses that ACT/Compass scores, High School GPA, and High School rank were all significant predictive factors in determining first to second semester retention of freshmen students enrolled at a community college located in southwestern Missouri. In contrast, results of Chi Square analyses were inconsistent with the experimenters' hypotheses and indicated that Pell Grant eligibility, early/late registration, enrolling/not enrolling in a First Year Experience (FYE) course, and declaring/not declaring a major were not important factors when considering first to second semester retention of freshmen students (from a quantitative perspective).

Finally, the themes that emerged and knowledge gained from the open-ended responses in relation to the research questions of how the milestones of early registration, participation in a FYE course, and declaring a major impacts retention transcends the

one-dimensional lens that is often employed when analyzing quantitative data. This research provided a wealth of information that would not have been gathered by using statistics and mathematical models alone. The process of analyzing comments supplied by the survey participants expanded the scope of the project and provided a glimpse into the sentiments expressed by participants that quantitative data could not provide. Through the utilization of a mixed methods approach, the researchers were able to determine that the independent variables mentioned above produced themes of planning, preparedness, and motivation/self-efficacy, thereby allowing the researchers to develop an initial model of student success in regards to resiliency factors which might place a student at greater likelihood of continuing to degree completion.

Chapter V

Discussion

Purpose

The purpose of this study was to examine individual factors which assist institutions in first to second semester retention rates of freshmen students enrolled at a rural community college, located in Missouri. The independent variables examined included entrance/placement examination scores such as ACT and Compass scores; graduating high school GPA/rank; and Pell Grant eligibility to determine if those factors could be used as identifiers in assessing the dependent variable of whether a student would return to school during the second semester at the institution of study, or whether a student he or she may be at-risk of dropping out, or not returning for his or her second term. In addition to the factors noted above, key milestones were also examined to determine if the act of completing various achievements during a student's first semester had an effect on whether a student returned his/her second semester. The key milestones investigated included: early registration, participation in a first year experience (FYE) course, and declaring a major.

Because retention and persistence can be affected by a number of variables or complexities, it was necessary to first define the aspects of retention the study would examine; therefore, the scope in defining retention for this study was limited to first semester freshmen returning for a second semester. In addition, it was critical to understand how the independent variables could be connected to retention as well as identify those relationships that took on a prominent degree of importance when conducting the literature review for this study. Once these fundamental steps were

recognized, hypotheses for each of the research questions were formed and the research was able to move forward.

Hypotheses

After reviewing the literature, it was hypothesized that students with higher exam (ACT/Compass) scores and high grade point averages and high school rank would be more likely to return for the second semester whereas students receiving the Pell Grant would be less likely to enroll during the second semester. With regard to milestones, it was predicted that students registering prior to 30 days of the start of the term would be more likely to be retained than students registering within 30 days of the start of the term. Finally, it was hypothesized that students who participated in a first year experience course and students who enrolled in college with a declared major (as opposed to those who identified as undeclared majors) would be more likely to return during the second semester.

Significant Results – High School/Rank and Retention

As discussed in Chapter 4, there were significant correlations for first to second semester retention and the independent variables of both high school grade point average and high school rank. These results build on the research conducted by the Community College Research Center (2012) which determined that the best predictor of college student success was high school grade point average and previous coursework completed during a student's high school career. These results connect the concept of student academic success with persistence as a significant correlation and one to be weighed heavily when predicting continuing enrollment and retention rates. The significance of the results can be concluded as applicable to the general population enroll in college with

a level of preparedness and a track record of academic success will be more likely to persist than those that struggled during their K-12 education.

Significant Results-Entrance Exams and Retention

In addition to high school rank and high school grade point average, the results from Chapter 4 indicated that all components of the ACT (with the exception of the ACT Science subtest, which was not a variable of study) and Compass tests were significantly correlated with first to second semester retention rates, with the exception of the Compass Writing component. Specifically, the ACT Composite, Math, Reading, and English all showed a significant correlation for predicting retention. Additionally, the Compass Math and Compass Reading scores also demonstrated a strong correlation with first to second semester persistence.

While previous literature focused on utilizing ACT and Compass test scores as a predictor of how well students performed in community college settings (Community College Research Center, 2012), the significance of the results recognized in Chapter 4 add to the literature when assisting institutions with predicting enrollment and the number of expected returning students from their first to second semester, as well as the number of class sections that may be needed to satisfy course demand. For example, institutions that recognize students with a high ACT Math score as having a stronger probability of re-enrolling, as well as a better predictor of higher academic performance, can plan accordingly when creating target enrollment goals and preparing for the number of math sections needed to meet demand for the upcoming year.

Insignificant Results – Compass Writing and Retention

In contrast, among the results noted in Chapter 4, the Compass Writing score was shown to be insignificant in relation to whether a student will return for his/her second term. This result coincides with the work conducted by the Community College Research Center (2012), in that Compass placement tests and other high stakes entrance examinations did not predict how well students performed in community college settings. This aligns with previous literature conducted by the Community College Research Center (2012), which indicated placement exams were a better predictor of success in math-oriented courses, as opposed to English courses. The lack of significance between retention and Compass Writing scores on retention both supports previous literature and adds to existing literature when forming predictive retention models.

When reviewing results found in previous literature, along the current results of in this study, the subjective nature of assessing writing skills, as opposed to the quantitative method of assessing math skills, lends itself to understanding why writing scores on a standardized test may not constitute a significant correlation for predicting retention. Consistency in determining writing standards depends on individual evaluation of sample writing as opposed to objective scoring of correct or incorrect math solutions. Therefore, writing skills may not necessarily translate or qualify as a variable that allows for canned or standardized quantitative predictive retention outcomes.

With regard to the specific population utilized in this study, additional variables may also explain why the Compass Writing score showed a lack of significance for first to second semester retention in that 3% of the student population was reported as Hispanic or Latino (<http://www.crowder.edu>). In addition, according to the United States

Census Bureau, (2010), 16% of the households in the rural area in which this community college is located, reported English as their second language. Considering the population percentages, writing may act as a barrier to academic success for students attending the institution of study and serve as a non-factor for predicting retention.

Insignificant Results-Pell Grant Eligibility and Retention

Another element shown to be insignificant from the results cited in Chapter 4 for predicting first to second semester retention rates is Pell Grant eligibility. This differs from the literature conducted by Noel-Levitz (2011) which stated students who received Pell Grants had a higher completion rate than their non-Pell Grant peers, (after controlling for high school performance). While this study indicates that receiving a Pell Grant had no effect on whether a student decided to return to college to complete a for second term, additional components of financial aid packages such as unsubsidized or subsidized loans, scholarships, or tuition assistance received in addition to Pell Grants were not examined, which may have rendered a different result. For example, the research conducted by Noel-Levitz (2011), demonstrated that as the percent of financial aid received increased for covering a student's total bill, the retention rate had a corresponding increase as well.

Milestones

As noted in Chapter 4, capturing the significance of early/late registration, completion of a FYE course, and declaration of major as predictors of first to second semester retention proved quantitatively unattainable due to the population surveyed; however, the study was able to utilize alternate quantitative conclusions surrounding these milestones. Results indicated there was no significance or correlation between the

milestones examined and whether a student enrolled in college part-time or full-time. Implications can still be inferred from this information in that institutions can utilize this data in budget planning, support services, and policy discussions. In addition, enrollment status can have an indirect influence on persistence and predicting enrollment when predicting time to completion for students pursuing a particular degree, as well as anticipating financial aid eligibility.

Early Registration and Retention

Although the qualitative results indicated that early registration was associated with themes of preparedness, planning, and motivation, all desirable characteristics for persistence and student success, there were no significant differences involving the effect of registering 30 days prior to the beginning of the academic term or waiting to register within 30 days of the start of the academic term with regard to full-time or part-time enrollment. The themes of feeling prepared and encompassing a sense of planning and knowing what to expect, surrounding the act of early registration, found in the results of Chapter 4, coincide with the research conducted by Smith, Street, and Olvarez (2002) which found that only 35% of late registrants returned the following semester as compared to 80% of those who registered on time. However, the study also noted that late registrants were often nontraditional students (Weiss, 1999). Considering that community colleges have a high population of nontraditional students and many of the nontraditional students enroll as part-time students, allowing late registration may be an important consideration for the participant institution when determining policy.

First Year Experience (FYE) Course and Retention

Participating in FYE courses was another independent variable that was examined but the research did not provide conclusive results as to its significance for retention due to the population responding to the survey. Additional barriers regarding this component included: the confounding variable of respondents not knowing what was meant by a first year experience course, or possibly identified the course by a different name or reference. Another impediment regarding this variable included the possible language barrier due to the percentage of Hispanic/Latino respondents and whether a clear interpretation of the question was realized.

Similar to the early/late registration research, quantitative results for participation in a FYE course were inconclusive regarding first to second semester retention; however qualitative results were obtained indicating a relationship between the FYE course and whether students enrolled full-time or part-time during their second semester. No significance was found attributing participation in a FYE course to enrollment status during a student's second term. The population responding to the survey was comprised of both traditional and nontraditional demographic students and contained a fairly balanced proportion of full-time (55%) and part-time (45%) students. This caveat could help explain the lack of significance with regard to enrollment status derived from the quantitative test.

The students who responded to the open-ended questions were able to identify with the FYE courses, and the influence it had for them in returning for a second term, again showed emerging themes of creating a sense of preparedness, planning, and motivation/self-efficacy, but also had a high propensity to the sub-theme of being able to navigate various elements of the college experience. The resulting theme of successful

navigation of resources compliments a study by Barefoot (1992) which indicated that FYE programs are designed in part to increase the use of campus services. There were also respondents on the opposite end of the spectrum who felt the course was irrelevant to returning to college second semester and considered it inapplicable or a waste of time due to an already busy schedule of work, family and school. Institutions can utilize these results when planning content and formats for FYE courses and possibly offer a variety of options that may best suit certain segments of the student population.

Declaration of Major and Retention

Finally, the milestone of whether students enrolled in at college with a declared major or enrolled as an undeclared major was another factor examined but one in which quantitative results were unable to be gained for the dependent variable of retention. Instead, additional knowledge was obtained related to whether the act of declaring a major had an impact on a student's enrollment status during his/her enrollment second term. The research again showed no significant correlation between having a declared major and whether students enrolled as part-time or full-time. Because community colleges are often utilized by students for both a path for completing their general education requirements, obtaining vocational training or pursuing personal or professional development, the lack of a strong correlation between declaring a major and whether a student enrolled part-time or full-time makes sense.

The responses that emerged from this particular open-ended question of whether declaring a major or remaining an undeclared major had an effect on re-enrollment for a second term showed the heaviest support for the development of the planning theme and strong sub-theme of goal setting and goal achievement. However, there were also

elements of a theme related to exploration and a sense of being proactive in planning for time to degree completion through the act of discovery, thereby reducing the chance of taking unnecessary classes later in a student's academic career. Both of these themes build on the study previously conducted by Leppel (2001) which noted a student's persistence evolved in part from their level of goal commitment and interest in a subject, whereas Cuseo (2005) determined that students who confirmed a particular major early in their academic career may be making a premature decision without proper information, forethought or self-knowledge. Institutions, especially community colleges, can use this information to make decisions when forming first-year curriculum options by making sure to infuse aspects of career counseling early and entwining practical career opportunities, along academic offerings, thereby assisting students in making informed decisions about their career goals.

Comparative Results

In addition to reinforcing the milestones as models of success parameters for first to second semester retention, results of the survey administered in this study confirmed comparative data results found in nationally distributed surveys such as the Survey of Entering Student Engagement, (SENSE). The SENSE survey noted the concept of a "clear academic plan and pathway" as a key benchmark for persistence. Considering that both planning and preparedness emerged as major themes from grounded theory analysis, along with sub-themes of goal setting and time to degree completion, it is evident that the milestones examined positively influence first to second semester retention (<http://www.ccsse.org/sense/>). This also demonstrates that the variables of proper

planning and “feeling as if one is prepared” are elements for achieving a clear academic plan and pathway.

In addition, motivation/self-efficacy was denoted as a major theme of the qualitative data collected, which aligns with the SENSE survey benchmark of “high expectations and aspirations” which expressed that “when students perceive clear, high expectations from staff and faculty, they are more likely to understand what it takes to be successful and adopt behaviors that lead to achievement” (SENSE, 2015). In other words, the variables of “knowing what to expect” and “provided with strategies” can produce feelings of motivation in pursuing the path to one’s aspirations and reinforcing self-efficacy. This theme of motivation/self-efficacy, along with the variable establishing “clear and high expectations,” is also aligned with both Tinto’s (2012) sociological perspective and Bandura’s (1982) psychological perspective on student development. Tinto (2012) noted that students need clear expectations regarding what it takes to be successful, and Bandura’s (1982) work conveyed the importance of self-efficacy on student perseverance.

The grounded theory approach used in this study supports previous research conducted and is also represented in many of the student development theories. It can be deduced that the hypotheses developed concerning the milestones of achieving early registration, participating in a FYE course, and declaring a major as favorably impacting retention are supported. Furthermore, it can be concluded that the expanded knowledge gained through the quantitative analysis related to these milestones and lack of significance for enrollment status supported the hypotheses. Thus, it can be theorized that the milestones are applicable to a wide variety of the student population, both traditional

and nontraditional, and can therefore be defined as influential factors for students returning for a second semester, regardless of whether they enroll part-time or full-time.

Limitations of the Study

Several limitations should be noted concerning not only the scope of this project, but also with regard to the information that was obtained. While the sample population of students surveyed consisted of $N = 97$, which was higher than our expected response of $N = 25$, all respondents were returning students, which limited our ability to gather quantitative data regarding second semester enrollment/non-enrollment as originally anticipated.

Specifically, the research team's original intent to determine from a quantitative perspective if students that completed early registration, participated in a first year experience course, or enrolled in college after having declared a major were more apt to re-enroll for a second term than those who did not complete these milestones was hindered because all respondents consisted of participants from the re-enroll group. However, this limitation regarding the quantitative results may have strengthened the qualitative analysis in that the milestones examined could then be interpreted as success models for increasing retention since the emerging themes were comprised of planning, preparedness, and motivation/self-efficacy, characteristics obviously rendered as important for students who do re-enroll for a second term. Something to note, however, when considering limitations, is that the information provided by the respondents was self-reported and no follow-up was made to correlate responses with actual behavior. As such, it is possible that the results obtained from the qualitative portion of the study were

confounded by response bias or the desire for respondents to be viewed in a positive light.

Another limitation of the study was that the results of both the agency records and survey focused solely on freshmen students during their first year. Results may not be generalizable to students enrolled in their second year of college or students deemed as upperclassmen.

Other limitations of this study surrounding the respondent population included the high number of Caucasian respondents as compared to other ethnicities, with 84% of the respondents self-reporting as Caucasian. While the demographics mirror the larger student population at the participant institution, as well as the demographics of the region, applying the results to other ethnic groups or a different geographical region, such as an urban or highly populated metropolitan area as opposed to a rural area, may render the conclusions as less pertinent or unrelated, and less generalizable to students of color or those living in a different geographic location. Another limitation of the study is the small sample size in regards to the responses received from the retention survey. Because the information gathered from the results of the survey are based on a sample size of 97, results may not be generalizable to the population studied.

In addition to the limitations of the surveyed population, there were also limitations within the agency records utilized, in that approximately 2,250 records had to be removed due to incomplete data, thereby reducing the sample size by more than one-half.

Finally, the results of this study were derived utilizing data from a two-year public community college in a rural region of Southwest Missouri. While the results may be

applicable to other rural two-year colleges, the results may not be valid for other types of institutions, such as four-year public, or institutions that are considered private or for profit. In addition, a rural two-year college in a different region of the country, or one with a significant size difference, may also possess characteristics that would show different outcomes for the research questions examined, thereby limiting the ability to generalize results as appropriate for all institutions of higher education and all populations of students.

Future Research

In review of the research findings outlined in Chapter 4, the research team determined that further investigation should be considered, when looking to expand upon existing research and outcomes shared in this study, in order to improve support services and enrollment trends at the participant institution. With significant correlations between first to second semester retention and both high school grade point average and high school class rank, future research may be conducted to determine if the type of high school attended has an impact on the retention rates of freshmen students. Research conducted by the Community College Research Center (2012) supports a strong relationship between high school grade point average with students' college grade point average and college credit accumulation, suggesting that additional information about the type of high school attended (public vs. private) may give insight in regards to the effectiveness of college preparatory and dual credit programs offered at local high schools. In addition, further analysis is encouraged to pinpoint differences in public and private high schools in an effort to align resources, including but not limited to funding, to ensure equitable access to a quality education.

This research study is inclusive of student surveys adapted from the Survey of Entering Student Engagement (SENSE) that were administered during the spring semester. This omits any student who may have attended the participant institution as a first-year freshman during the fall 2015 semester and failed to re-enroll during the spring 2016 semester. The survey of students during their first semester allows the collection of data from students who are at-risk of dropping out of school. In addition, researchers may consider conducting open forums with students regarding the impact of early registration, declaring a major, and participation in a FYE course. The interview would afford students the opportunity to provide feedback regarding their experiences during their first semester as well as allow students to ask follow-up questions, which may positively impact the validity and reliability estimates of future studies.

Although Pell Grant eligibility was not significant in predicting the likelihood of re-enrollment, the study did not take into account other financial aid packages such as unsubsidized or subsidized loans, grants, scholarships, tuition assistance and work study programs. The Missouri A+ Scholarship Program, which provides scholarship funds to eligible in-state high school graduates, should also be considered. Although the program is designed to reward the academic excellence of high school graduates, it may possibly limit how financially accessible college is to the community. The United States Census Bureau (2015) reports that the Hispanic and Latino population is the largest minority group in Neosho Missouri, which is where the participant institution is located. For example, future research may consider investigating the Deferred Action for Childhood Arrivals program, a federal immigration policy that allows certain illegal immigrants to obtain U.S. citizenship based on certain criteria, and existing campus policies that address

how the participant institution financially supports students who may fall into this category. These are major components that help offset the cost of attending college for students and their families.

The achievement of successful first-year programming initiatives helped to create a need for second-year or sophomore programs that will help improve student retention. The National Resource Center for the First-Year Experience and Students in Transition (2005) conducted a domestic survey to understand why colleges and universities around the country were beginning to invest in these programs. The results found that the most common initiatives for sophomore programming were career planning (74.2 percent), major selection (65.3 percent) and academic advising (61 percent). Although not as significant, some institutions desired programming that would support sophomores through in-class events such as trips, dinners, and dances, student government, service-learning or community service, cultural events, along with opportunities to offer credit-bearing courses that would afford sophomore students the opportunity to co-teach or serve as a mentor in specific classes. The results also found that participating institutions were looking to creating a sense of community, improve social engagement, facilitate faculty-student interaction, inspire major and career exploration, and promote academic engagement and leadership. Using this model as a guide, future research may consider surveying second-year students to determine additional milestones which could aid in building a comprehensive student success model that spans beyond the first year.

In an effort to strengthen the generalizability of the results, future research could focus on conducting similar studies at four-year and private institutions, institutions in other states as well as urban areas. In addition, conducting similar studies at institutions

with a more diverse population may strengthen the generalizability of results to Non-Caucasian students.

Recommendations

A key element to consider when proposing solutions to a client is how to best prioritize the recommendations to focus clients' efforts. The research team recognizes the importance of setting the order of sequence in which projects are accomplished, with special consideration to the resources needed, i.e. fiscal and human capital. All recommendations mentioned should identify specific goals that align with large-scale, campus-level initiatives and the institutional mission. Before the implementation of any recommendation, campus administrators should develop a timeline, inclusive of an evaluative tool for the project, and identify on-campus and community stakeholders who may be affected.

Increased Communication among Colleges and K-12 Institutions

As mentioned earlier, the research team found high school grade point average and high school rank to be significantly correlated to retention. These findings may inspire future researchers to consider additional high school variables such as access to a college preparatory program. Although the researchers agree that a connection to local high schools may provide significant data, acquiring the data may be difficult, thus this recommendation may be considered a long-term goal. Policies and program initiatives that are managed by the participant institution will provide an ease of control and the ability to readily make changes. Furthermore, for the purposes of this study, all recommendations are focused on initiatives that require minimal consultation with secondary institutions in the area.

Revision of Campus Mission and Policies

Traditionally, the community colleges 'open access policy has been an affordable point of access for Americans who are interested in postsecondary education. The mission statement at the institution of study states, "We believe that access and quality are compatible; and that both can be more fully realized through a proactive stance, seeking to make the public aware of and interested in opportunities available." (www.crowder.edu). With increasing demands for public institutions to be held accountable and demonstrate their success through outcome-based funding metrics, the research team recommends that campus administrators revisit the mission of the community college and work to create balance with the goal of retaining more students. In addition, the institution of study should also revisit how the campus defines student success, seeing that students may attend two-year institutions for various reasons.

Implementation of Pre-Orientation Programs

As noted by Castleman and Long (2013), early intervention, coupled with support services established on college campuses, increases the likelihood of students persisting to degree attainment. Pre-orientation programs are designed to assist students with successfully transitioning to college by creating a sense of belonging early on, as well as leveling the playing field for students who may need additional academic support in order to meet the academic rigor of college courses. Pre-orientation programs can take a variety of different forms on college campuses, including but not limited to: Summer Bridge Programs (a program held before the semester begins which focuses on boosting the academic and career skills of participants) and boot camps designed to assist special population groups. It is recommended that the institution of study design a pre-orientation

program to assist students which may matriculate into the university with low ACT and Compass scores (as defined by campus administrators).

Review First Year Experience Policies and Curriculum

The results of this study determined that participation in a FYE course had no significant relationship to student retention. Contrary to findings in this study, research suggests that there are great benefits to offering first year programs at two-year institutions. The Noel- Levitz Report (2011) focusing on student retention practices at four-year and two-year institutions suggest that student involvement in first year programs is one of the top 10 high impact practices at a two- year institution. Many of the high-ranking practices are widely-used, including at the institution of study, which offers COLL 101: College Orientation, a mandatory one credit hour course for first-time, degree seeking freshman. In addition to first time, degree-seeking students, the institution may consider requiring this course for transfer students, non-degree seeking students and students who have been separated from the institution for an extended period of time. By using the college orientation course as the foundation for success for all students, the college can begin to modify the curriculum to include academic support programs that offer workshops and additional offerings for at-risk populations and special interest groups, such as learning communities.

Students who participate in learning communities and special interest groups spend more time together outside of class than students in traditional classes and see themselves as more engaged, both academically and socially, thus having a greater likelihood of persisting than students who were enrolled in a conventional curriculum (Tinto, 2003). The collaboration of faculty and student affairs professionals in developing

course content and pedagogy to linked courses removes the idea that learning only happens in the classroom. It is recommended to create a campus-wide effort that empowers all college employees, regardless of title or department, to understand that everyone plays a part in retention.

Implementation of Faculty and Staff Student Interaction Programs

The Noel- Levitz Report (2011) also suggests that academic advising programs, inclusive of mandatory, one-on-one and face-to-face interaction between faculty and staff and the student, are highly effective student retention practices. It is recommended that several advising checkpoints, which may include a written academic roadmap for new and continuing students, are encompassed in a first year experience course which should be mandatory and included in the grading scale.

Utilize Web-Based Course Engagement Tools

According to Noel-Levitz (2011), using web-based learning platforms such as Blackboard or WebCT will afford students who are nontraditional and have significant time commitments the opportunity to connect with their faculty instructor and classmates from a remote location. This platform may also be used to create online assessments that are included in the grading scale that will help demystify higher education jargon and terminology that students may not fully understand; this is inclusive of, but not limited to, financial literacy workshops and course registration policies. The course should also include in-class and online presentations that focus on course policies and academic expectations, major exploration, and student skills development. Student mentors assigned to the course may also use the online platform to connect with students outside of class times or inform students of campus events.

Revision of Entrance Examination Score Policies

As illustrated in the results outlined in Chapter 4, the research team found that the Compass Writing scores were not significant in predicting the first to second semester retention rates of freshmen students. With this in mind, it is the research team's recommendation that the institution of study give less weight to Compass Writing scores in relation to its effect on retention. This assessment should be used, however, to determine remedial English course placement. Likewise, it is also recommended that the institution of study utilize ACT Composite/Math scores when determining students at-risk for retention issues. This recommendation coincides with work conducted by the Community College Research Center (2012), which indicated that placement exams were a better predictor of success in math oriented courses as opposed to English courses, and that Compass and other entrance examinations did not predict how well students performed in community college settings.

Revision of Time of Registration Policies

Although there was no significant difference between time of registration and retention, the qualitative research demonstrated a link between the characteristics of preparedness, planning, and motivation with early registration and subsequent re-enrollment. The researchers recommend enacting policies that empower students to be successful, feel prepared and know what to expect. Because students that register late may miss key information or connection opportunities, institutions that provide flexible course offerings can accommodate those students who would have otherwise registered late while also ensuring they have access to relative material and communications. Offering courses during various off-schedule sessions and in assorted formats such as

modular sections with continuous enrollment and the ability for students to carry over academic work to a future semester would eliminate the negative consequences associated with late registration and instead be able to accommodate the busy lives of many non-traditional students.

This recommendation is supported by policies and processes enacted at Cleveland State Community College (CSCC) which not only redesigned their math curriculum so students could achieve mini-modules of the coursework, but also modified their approach to scheduling, enrollment, and faculty workload design which has allowed course offerings to be increased and class size to be reduced. For example, the math courses are scheduled in computer classrooms where students can work on segments of the curriculum both during class time and during their lab time. This format has high-impact implications for retention and graduation rates in that the continuous enrollment plan allows students to keep working even after completing a course. In other words, students would not need to wait for next semester's schedule and enrollment period to proceed toward degree completion. CSCC found that in Fall of 2008, 46 students completed multiple courses and "for those students who partially complete another course, the work they have done is transferred when they register for it the following semester" (Squires, Faulker, & Hite, 2009, p. 885).

Exploring innovative concepts as it relates to "early" or "late" registration and approaching enrollment as a continuous process would allow students to both feel prepared and satisfy the need of knowing what to expect. This approach would also alleviate students' fears that classes will not be available, if forced to register late, as well as assist with the goal of retaining students. Although this format may not be applicable

to all courses, identifying courses that would be a good fit could help accomplish the goal of decreasing the number of students who drop out between their first and second semester. In addition, providing general education courses with non-traditional start dates that span 12 or 14 weeks to compliment the traditional full 16 week semester would also provide alternate options for students that otherwise would be considered late registrants.

Conclusion

Improving retention rates is a challenge for many institutions of higher education; especially community colleges in which student demographics represent varying academic paths. This study explored the pre-enrollment factors of entrance exam scores, graduating high school GPAs/rank, and Pell Grant eligibility to determine if they acted as predictors for first to second semester retention. In addition, the milestones of time of registration, participation in a first year experience course, (FYE) and declaring a major were also examined to determine whether they predicted subsequent re-enrollment.

The researchers found that ACT and Compass scores (with the exception of the Compass Writing test) and High School GPA/rank were strong predictors in determining first to second semester retention. Although the key milestones of time of registration, participation in a FYE course, and declaring a major were not significant in predicting retention rates of freshmen students (quantitatively), they did have merit for a retention model (Appendix H).

After reviewing the results, recommendations were made to the administration at the institution under study to provide guidance in regards to interventions aimed at increasing the overall retention rates of students at the institution. Interventions proposed by the research team include but are not limited to: increased communication among

colleges and K-12 institutions; revision of campus mission and policies; implementation of pre-orientation programs; formal review of FYE policies and curriculum; implementation of faculty and staff student interaction programs; utilization of web-based course engagement tools; revision of entrance examination scores; and extension of registration deadlines. All recommendations mentioned should identify specific goals that align with both large-scale, campus-level initiatives and the institutional mission. Before the implementation of any recommendation, campus administrators should develop a timeline, inclusive of an evaluative tool for the project, and identify on-campus and community stakeholders who may be affected.

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Appendix A

HESS-LC Consultants

**Request for Problem in
Practice:
Issues in Student Affairs**

COLLEGE OF EDUCATION

UNIVERSITY OF MISSOURI-ST. LOUIS

ONE UNIVERSITY BOULEVARD

ST. LOUIS, MO 63121

Version 1.3
April 23, 2014

Presented by:
EdD Higher Education Student Services
Learning Community 2013

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1. SUMMARY AND BACKGROUND

The College of Education (COE) at the University of Missouri-St. Louis serves as a catalyst for education innovation. Through its embrace of new ideas and ventures, the college provides the St. Louis region with superior educators who have the necessary skills, knowledge, and insight to positively impact youth and adult learning outcomes. Our more than 12,000 alumni serve as educators for public, private, and charter schools, youth-and adult-serving organizations, businesses, government agencies, counseling clinics and private practices, and higher education.

The University of Missouri-St. Louis College of Education is a member of the Carnegie Project on the Education Doctorate, a national group of over fifty universities re-designing and re-orienting the Doctor of Education degree as a program distinct from Doctor of Philosophy in Education degree programs. Our program reflects our commitment to the work of the Carnegie Project and its working principles which “prepares educators for the application of appropriate and specific practices, the generation of new knowledge, and for the stewardship of the profession” (<http://cpedinitiative.org/definition-and-working-principles-edd-program-design>).

The Doctor of Education (Ed.D.) degree is a program that prepares practitioners to be leaders who use practical wisdom, professional skills, and knowledge of educational literature to address high-level problems of practice facing their area of education. The program applies an *Inquiry as Practice* model of scholarship. Graduates gain the ability to use data to inform decision-making and enhance their practice by gathering, organizing, judging, aggregating, and analyzing situations, literature, and data. More specifically, the program will re-emphasize critical competencies as outlined in the Council for the Advancement of Standards in Higher Education (CAS). Such critical competencies include, but are not limited to highlighting student learning and engagement, student development theory and practice, leadership and management, cultural pluralism, collaboration and program development. The intention is to prepare scholarly practitioners in their professional work. The program is unique in that it emphasizes collaboration with other professionals throughout the curriculum as well as with the Dissertation in Practice.

The curriculum of the Doctor of Education degree is intended to prepare practicing professionals to transform both their practice and the field by working in the community, just as practitioners collaborate with key stakeholders to address complex problems of practice. Students are admitted to the degree program and are simultaneously enrolled into a learning community of practice formed around a

theme such as educational policy, student services or character education. The learning community and appointed mentor team of faculty and practitioners work collaboratively throughout the program by meeting in a learning community seminar each semester. The community is encouraged to work in unison to construct, assess, and advance innovative solutions to high-leverage problems of practice that are fostered throughout the program.

In addition to the thematic learning community of practice format, the curriculum features Laboratories of Practice and a Dissertation in Practice as culminating activities. The Laboratories of Practice take the doctoral studies away from the University campus to a context where theory, inquiry, and practice can intersect and the implementation of practice can be measured.

The Dissertation in Practice allows the learning community to address a high leverage problem of practice through collaborative and connected work beyond independent work. Individuals contribute work that impacts overall group work. The Dissertation of Practice is characterized by generative impact.

2. PROJECT PURPOSE AND BENEFITS

The purpose of this Request for Problem in Practice (RFP) is to solicit proposals from various higher education institutions that would benefit from the collaborative efforts of practitioners currently completing the Doctor of Education Program with demonstrated skill sets to solve a problem specific to a student services unit. Members of the assessment team have a wide array of expertise in many aspects of student services including academic advising, scheduling, counseling, course instruction, qualitative and quantitative research methodology, etc. (please see addendum for complete bios of the assessment team). HESS-LC Consultants are seeking requests for proposals from higher education professionals whom envision bold, innovative and systemic solutions to high-leverage problems in practice that have emerged from within your organization and practices across professional and academic fields.

Benefits to Applicant:

As UMSL Doctor of Education students, we propose to create a collaborative relationship with an institution that is seeking innovative solutions to an identified high-leverage problem of practice for the purposes of contribution to best practices within the profession and in partial fulfillment of degree requirements. More specifically, we will provide a review of relevant literature with an emphasis on evidence-based practices to offer systemic solutions to be implemented for solving

the identified problem of practice that will improve student outcomes. Services will be provided free of charge with the exception to items outlined within Section 5.

What We Will Do:

We will use our diverse professional experiences and scholarly expertise to conduct a multi-faceted, objective analysis of your high leverage problem of practice to: identify feasible solutions, facilitate preliminary implementation, administer initial assessment of expected outcomes, and prepare a comprehensive dissertation in practice.

How We Will Do It:

1. In order to understand the campus environment and the problem of practice in context, we will:
 - assess existing data (e.g. annual reports, institutional data, agency records, etc.)
 - conduct a targeted literature review on best practices, benchmarks and trends
 - gather stakeholder perspectives
2. Evaluate current program assumptions and effectiveness.
3. Develop a strategic action plan with proposed solution(s).
4. Pilot elements of proposed solution(s), evaluating feasibility and effectiveness, identifying and reporting outcomes.
5. Maintain on-going communication with liaison throughout the process.

3. PROJECT SCOPE AND TIMELINE

The scope of this project includes all design, development, coding, licensing, and hosting of HESS-LC Consultants.

Successful applicant (institution) will provide HESS-LC Consultants a University Project Manager who will act as a liaison for scope of the project.

Successful applicant will be responsible for supplying internet access to the Campus network, allowing HESS-LC Consultants to work remotely and be agile amongst the campus community.

Selected applicant will allow HESS-LC Consultants access to necessary agency and university records.

The selected applicant will be responsible for participating in a thorough market Analysis with HESS-LC Consultants.

Selected applicant will be responsible for all agreed upon expenses including but not limited to site visits, professional development, peer institutions visits, etc.

Selected applicant will provide HESS-LC Consultants all current internal and external

stakeholder contacts for the project.

Selected applicant will be responsible for arranging interview sessions, researching meetings, and assembling necessary focus groups. Applicant will be responsible for alleviating potential working obstacles for HESS-LC Consultants.

The following criteria must be met to achieve a successful project. The selected applicant (institution) is willing and able to:

- Establish a collaborative partnership with UMSL College of Education Ed.D. Students who are also full-time practitioners from other educational institutions,
- Work with a flexible completion timeline, potentially over 12-18 months, and
- Demonstrate a desire to approach the project systemically.

Project Timeline:

- Project initiation phase must be completed by August 8, 2014.
- Project planning phase must be completed by September 10, 2014. Project planning phase will determine the timeline/schedule for the remaining phases of the project.

4. PROPOSAL GUIDELINES AND TIMELINE

This Request for Proposal represents the requirements for an open and competitive process. Proposals will be accepted until 5pm CST April 1, 2014. Any proposals received after this date and time will be returned to the sender.

The HESS-LC Consultants are seeking a working model of your program including a statement of the problem and project purpose. To assist us in gaining a thorough understanding of the issues, goals, and objectives relevant to the problem, please provide a detailed summary of the current resources, activities, outputs, outcomes, and anticipated project impact. In addition, please incorporate any current research or assessments as well as relationship roles that might impact the selection of your RFP. An outline of the current status which encompasses a projection of the desired outcomes will assist our team in understanding the project purpose. Please share any additional information that might define the results your institution is seeking. In addition, please define any limitations or challenges that might currently exist.

Bidding Guidelines: Applicants should provide the following items as a part of their proposal for consideration:

- Access to applicable sensitive information- files, student records, financial aid info etc.
- Funding (min-max)
- Implementation team
- Institutional background information

Contract terms and conditions will be negotiated upon selection of the winning applicant for the submitted RFP. All contractual terms and conditions will be subject to review by COE administration and will include scope, budget, schedule, and other necessary items pertaining to the project. In addition, your proposal should include a narrative of the program/department to be considered, which includes both campus and departmental mission, goals, objectives and expected outcomes. Please also provide information regarding resources (i.e. staff, partnerships, departmental highlights and successes) and direct and indirect activities (or outputs) of the department to be considered.

Applicant Qualifications

We support all two and four year institutions. We partner with them to revamp, redevelop, and create programs/initiatives aimed at garnering resolutions for academic and student success.

Breach of Agreement: The failure of an applicant to supply information promptly in connection with an inquiry related to responsibility may be grounds for a determination of non-responsibility.

- “Prompt” shall mean five (5) working days unless otherwise specified by the user agency.
- Information furnished by an applicant pursuant to this Section may not be disclosed outside of the user agency without prior written consent of the bidder.
- The user agency may utilize factors such as financial capability, reputation, management, etc. to evaluate the responsibility and qualifications of potential institutions in order to develop a list of prospective bidders qualified to be sent invitations to bid.

Exclusions: At this time we exclude redevelopment projects tied with laws or other regulations mandated from outside agencies.

Request for Proposal Timeline:

- RFP will be issued no later than 5pm CST March 14, 2014.
- All questions in response to this RFP are due no later than 5pm March 25, 2014.
- All proposals in response to this RFP are due no later than 5pm April 1, 2014.
- Evaluation of proposals will be conducted from April 1, 2014 until April 9, 2014. If additional information or discussion is needed with any bidder(s) during this window, the applicant(s) will be notified.
- A maximum of six institutions will be selected to each provide a 45 minute presentation of their proposed problem followed by 30 minute Q&A with the UMSL, Ed.D. Higher Education Student Services (HESS) cohort between 5:30pm and 9:30pm on either April 16, 2014 or April 23, 2014. Each presentation will be recorded; once a selection has been made all recordings will be destroyed.
- The selection decision for the winning applicant will be made no later than June 11, 2014.
- Upon notification, the contract negotiation and project pre-planning with the winning bidder will begin immediately. Contract negotiations will be completed by July 23, 2014.
- Notifications to applicants who were not selected will be completed by July 30, 2014.

5. BUDGET

Proposer agrees to provide services as outlined in this RFP for the amounts indicated below:

- Personnel
- Travel
- Meeting Spaces
- Data Collection
- Supplies
- Equipment
- Sub-Contract
- Consultants
- Other Expenses

The applicant is to submit a preliminary budget and budget justification, including estimated staff hours and permissible costs and any non-labor expenses, such as travel and incidentals, meeting spaces, data collection tools, supplies and equipment necessary to accomplish the objectives of the proposal.

HES-LC Consultants is not liable for any costs by applicants in replying to this RFP.

6. PROPOSAL EVALUATION CRITERIA

HES-LC Consultants will evaluate all proposals based on the following criteria. To ensure consideration for this Request for Problem, your proposal should be complete and include all of the following criteria:

- Overall proposal suitability:
 - TOPIC: access, integration, FYE, at-risk, retention, Faculty/Staff collaboration VS athletic programs, fraternity/sorority life, residential life
 - TIMELINE: approx. two years (12-18)
 - Problem and solution nets high impact
- Organizational Experience:
- Previous work:
- Value and cost:

Each applicant must submit 1 electronic copy of their proposal to the address below by April 1, 2014 at 5pm CST:

EMAIL ADDRESS

allenkr@umsl.edu

HES-LC Consultant Bios

Sean Chism is currently the Academic/Recruitment Advisor at DeVry University and Keller Graduate School of Management. Within this role, Sean facilitates the operation of a comprehensive Academic Advising Program providing a broad range of services including; program planning and course selection, enrollment trends and shifting campus demographics, interpretation of assessment test scores, course transferability, and recruitment. In addition, Sean maintains an effective informational and collaborative relationship within college departments and instructional divisions; conferring with deans and other faculty on degree program requirements, college policies and program changes. Sean brings solid experience with at risk populations, recruitment, program implementation, placement evaluation, and academic support from UMSL and Washington University. Sean also is an adjunct faculty member at St. Louis Community College, instructing courses aimed at acclimating first time college students to higher education standards/policy, best practices, and professional development. Sean welcomes the opportunity to collaborate with professionals who share his passion for student excellence.

Tyson Holder: Tyson joined the Office of Multicultural Student Services (MSS department) at the University of Missouri-St Louis in 2013 and serves as a Counselor, providing academic coaching to Liberal Arts Majors. In addition to academic coaching, Tyson serves as the coordinator of the MSS tutoring component. He received his Bachelors of Arts in Psychology (2007), Specialists degree in School Psychology (2010), and Masters of Science in Counseling and Student Development (2012) from Eastern Illinois University. He has previously worked as a TRiO (Student Support Services) Advisor at Lewis and Clark Community College and Eastern Illinois University. Tyson has experience in academic advising, cultural enrichment programming, counseling, academic coaching, quantitative and qualitative research methodology, and diversity training.

Theresa Keuss is an Assistant Registrar at the University of Missouri-St Louis. Theresa received her bachelor's degree from UMSL in Business Administration and has worked in several facets within the University system including Financial Services at Missouri S&T, and Accounting, Purchasing, Cashiers, and Registration at UMSL. Theresa also spent time in the corporate world where she worked as a cost accountant and financial analyst at a manufacturing firm, but after several years, realized she missed the academic environment and returned to UMSL where she completed her Master's Degree in Higher Education. Theresa is currently enrolled in the Ed.D Higher Education/Student Services learning community at UMSL. As Assistant Registrar, Theresa oversees customer service concerning enrollment, registration, grade submission and transcript issues, and is also responsible for coordinating the course schedule. She was the recipient of the 2011 Chancellor's award for staff excellence and works closely with every department on campus giving her a broad perspective on institutional practices.

Natissia Small: As an Assistant Dean of Students, Natissia Small provides direct oversight and leadership for Precollegiate Student Services (Bridge Program) and Multicultural Student Services. Natissia joined the University in 1995 and currently works directly with diverse student populations, first-generation students, middle and high school students, parents, and school administrators within the St. Louis community. She has led the Bridge Program to state and national recognition, Bridge continues to serve more than 4,000 students and families in the St. Louis community annually. Natissia's responsibilities include oversight for college access initiatives and programming, retention services, academic support, parental engagement, leadership development and cultural enrichment programming. She earned her undergraduate degree in Mass Communication from Southeast Missouri State University, and dual Master degrees in

Secondary Education with an emphasis in Adult Education; and Counseling from the University of Missouri – St. Louis. She is currently pursuing her doctoral degree in Educational Policy and Leadership at UMSL.

Lead Advisor to HESS-LC Consultants/HESS-LC EdD 2013 Cohort

Kimberly R. Allen – Assistant Dean for Student and Faculty Affairs and Associate Teaching Professor in the College of Nursing at UMSL. She provides formal leadership for the Office of Student Services which includes academic support programs, academic advising, recruitment, enrollment and retention. In addition, she is responsible for faculty development and academic program evaluation. She is currently investigating pre-health students' grit, self-regulation, career choice, and academic progression patterns. This study is informing the curricular structure for first year experience courses for pre-health students, many of which are first generation college students and/or transitioning from under-performing high schools in the metropolitan area. She teaches evaluation strategies in nursing education and also teaching the learning communities of practice courses for the renewed Ed.D. program in the College of Education, a Carnegie Project on the Education Doctorate (CPED).

Appendix B

Questions for Telepresence Meeting

Preliminary Discussion:

- 1) Is it possible to obtain any annual reports that might further assist the team with defining the research question (focus of dissertation)?
- 2) Is there any information that you believe would be beneficial for the research team to review prior to beginning our assessment?
- 3) What is the institution hoping to gain by having the dissertation team perform an evaluation?

Admissions:

- 1) What percentage of students enrolled are first time, degree seeking students?
- 2) How many incoming students are referred as college ready?

Re-Enrollment:

- 1) Do you have data reports which illustrate reasons for student withdrawal from the institution such as: financial, family obligations, employment, etc.?
- 2) Do you have any information which would explain why a student would withdraw from the institution one semester and re-enroll the next semester? Is this process different than the question previously mentioned?

Retention:

- 1) How many students require developmental course work?
- 2) How much of a GPA gap is there between students who have low graduation rates in comparison to other college ready students?
- 3) Does the institution provide early completion opportunities for developmental course work?
- 4) How many students participate in tutoring services provided by the institution on an annual basis?
- 5) What percentage of students, requesting tutoring support, are able to obtain a C or better in the course(s) in which tutoring was requested?
- 6) On average, how many students are referred for academic concerns at a semester basis?
- 7) Please describe the process involved with following-up with students who did not graduate?
- 8) Please describe some of the services provided by TRiO (student support services).

Career Services:

- 1) What is the procedure for determining whether classes will transfer to an institution that your institution does not have an articulation agreement with?

Faculty Engagement:

- 1) What procedures do faculty follow if it is determined that a student lacks the necessary skills to be successful in his/her course?

Policy and Student Experience:

- 1) What is the procedure for handling academic grievances?

Student Success and Engagement:

- 1) What percentage of students successfully complete the College Orientation course each semester?
- 2) What procedures are in place to assist students who fail College Orientation?
- 3) Could you please provide further detail regarding Smart Start Orientation?
- 4) Are all students required to go through Smart Start Orientation? If not, which students does the program target?

Appendix C

Agency Records

Participant ID	Cohort Year	ACT Comp Score	ACT Math Score	ACT English Score	ACT Reading Score	ACT Science Score	Compass Math Score	Compass Reading Score	Compass Writing Score	HS Rank	HS GPA	Sex	Ethnicity	2011-2013 Term 1 GPA	Pell Grant	2011-2013 Cohort Return
1	2011	21	19	20	22	23	80	132	86	25	3.99	M	White	3.7	No	1
2	2013	15	14	13	16	16	55	76	90	106	2.76	F	Black or African American	2.3	Yes	0

Appendix D**Division of the College of Education**

Tyson Holder
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Informed Consent for Participation in Research Activities

Retention and Persistence in Higher Education

Participant _____ HSC Approval Number _____

Principal Investigator Sean Chism, Tyson Holder, Theresa Keuss, and Natissia Small
 PI's Phone Number 314/516-5444 (Sean), 314/516-6565 (Tyson), 314/516-4602 (Theresa),
 314/516-5128 (Natissia)

1. You are invited to participate in a research study conducted by Sean Chism, Tyson Holder, Theresa Keuss, and Natissia Small under the supervision of Dr. Shawn Woodhouse, advisor. The purpose of this research is to examine individual factors which may assist institutions in predicting first to second semester retention rates of student enrolled at a rural community college, located in southern Missouri.
2. a) Your participation will involve
 - Completing a short survey.
 Approximately [25 students] may be involved in this research (survey). An additional 3,000 cases will be examined through agency records provided by the institution involving students enrolled between 2011 and 2013. All students will be at least 18 years of age.
 - b) The amount of time involved in your participation will be five to ten minutes.
3. There are no anticipated risks associated with this research.
4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about retention and persistence in higher education.
5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to

participate or to withdraw. By participating in this survey you acknowledge that you will be entered into drawing to receive one of two \$50 Visa gift cards. Failure to complete the survey, in its entirety will not result in forfeit of entry into drawing.

6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection). That agency would be required to maintain the confidentiality of your data.
7. If you have any questions or concerns regarding this study, or if any problems arise, you may call one of the investigators, (Sean Chism at 314/516-5444, Tyson Holder at 314/516-6565, Theresa Keuss at 314/516-4602, and Natissia Small at 314/516-5128) or the Faculty Advisor, Dr. Shawn Woodhouse at 314/516-7397. You may also ask questions or state concerns regarding your rights as a research participant to the Office of Research Administration, at 516-5897.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

 Participant's Signature

 Date

 Participant's Printed Name

 Signature of Investigator or Designee

 Date

 Investigator/Designee Printed Name

Appendix E**Retention Survey**

For each of the questions below please indicate your response by circling the response which best describes you.

1) Are you enrolled full-time at Crowder College?

Full-time Less than full-time

2) In your first semester at Crowder College, how many courses did you take?

One Two Three Four or more

3) In your first semester at Crowder College, how many credit hours did you take?

1-3 4-6 7-9 10-12 More than 12

4) In your first semester at Crowder College were you enrolled in any remedial/developmental courses?

Yes No

5) Did you add or drop any classes within the first 21 days of your first semester at Crowder College?

Yes, without discussing my decision with a college staff member or instructor

Yes, after discussing my decision with a college staff member or instructor

No, I did not drop any course

6) When did you register for your first semester at Crowder College?

60+ days before the start of the term

30-59 days of the start of the term

7-29 days of the start of the term

Less than 7 days of the start of the term

During the first week of classes

After the first week of classes

7) In what range was your overall high school grade point average?

A A- to B+ B B- to C+ C C- or lower

8) Gender

Male Female Other

9) Please enter your race/ethnicity

American Indian or Native American

Asian, Asian American, or Pacific Islander
Native Hawaiian
Black or African American, Non-Hispanic
Hispanic, Latino, or Spanish
Caucasian
Other

10) What is the highest certificate or degree you have earned?

None
GED
High school diploma
Vocational/technical certificate
Associate degree
Bachelor's degree
Master's/Doctoral/Professional degree

11) Do your goals for Crowder College include any of the following?

Professional experience
Complete a certificate program
Obtain an Associate degree
Transfer to a 4-year college or university

12) Did you submit a FAFSA (Free Application for Federal Student Aid) for financial assistance?

Yes
Maybe
Do not remember
Don't know FAFSA is

13) If you did not fill out a FAFSA, why? Please choose only the main reason

Did not want to discuss sensitive information (Citizenship status, etc.)
Too complicated
Thought I would not qualify
Didn't need it
Other

14) How are you mostly paying for college?

Own money
Parents' or family money
Scholarships/grants
Loans
Other

15) The financial aid I received was enough to cover all my expenses (tuition, books, room and board)

Yes

No

I did not receive financial assistance through this college

For each of the statements below please circle yes or no.

16) I registered for classes thirty days prior to the start of the semester.

Yes No

17) I participated and successfully passed a First Year Experience/Introduction to College course during my first semester.

Yes No

18) I enrolled in college with a major in mind or declared a major during my first semester of college.

Yes No

Please rate each of the following topics 1-3 in relation to how each impacted your decision to enroll in college your second semester (1 = no affect, 2 = somewhat affected, 3 = significantly affected).

19) ___ Registering (or not registering) prior to the start (30 days before) of the term

20) ___ Participation(or non-participation) in a first year experience/introduction to college course

21) ___ Declaring (or not declaring) a major

For each statement below please provide a brief (1-2 sentence) response. If you believe that the statement had no effect on your decision to re-enroll, please mark N/A. If you do not plan on enrolling next semester, please place I do not plan on enrolling next semester on the lines provided below.

22) Registering early (or late) for classes impacted my decision to re-enroll in the following ways:

23) Participating (or not participating) in a first year experience course/introduction to college course impacted my decision to re-enroll in the following ways:

24) Declaring (or not declaring) a major impacted my decision to re-enroll in the following ways:

Appendix F

Dissertation Task Assignments

Chapter I: Introduction.....	Sean, Tyson, Theresa, Natissia
Chapter 2: Literature Review.....	Sean, Tyson, Theresa, Natissia
Chapter 3: Methodology.....	Sean, Tyson, Theresa, Natissia
IRB Forms.....	Tyson
Dissertation Proposal.....	Sean, Tyson, Theresa, Natissia
Chapter 4:	Sean, Tyson, Theresa, Natissia
Analyzing Agency Records.....	Theresa and Natissia
Analyzing Surveys.....	Tyson and Sean
Results.....	Sean, Tyson, Theresa, Natissia
Interpretation.....	Sean, Tyson, Theresa, Natissia
Chapter 5: Discussion.....	Sean, Tyson, Theresa, Natissia
Dissertation Defense.....	Sean, Tyson, Theresa, Natissia

Appendix G

Codebook

- **Preparedness**: The fact of being ready for next steps and knowing what to expect, including not only the act of enrolling in classes, but knowing how to enroll, which classes to take, and how to proceed.
Some sample phrases supporting the theme include:
 - “helped prepare and start to think about what would be expected of me”
 - “to help myself be more prepared”
 - “knowing I would be prepared and ready for my classes”
 - “made enrolling less stressful”
- **Availability**: Easy or possible to get the classes needed or want for the following semester.
 - Sample phrases:
 - “It’s important to enroll early so you can get the class you want”
 - “ensured that I was able to enter the classes I wanted because they were not full yet”
 - “all classes are still open and available to you”
 - “get into the classes you want before it gets full”
 - “those classes I am mandatory to get done will be available”
- **Flexibility**: Ability to change due to outside obligations or interests
 - Sample phrases:
 - “helped me schedule time and work with work to adjust hours”
 - “revamp my personal schedule”
 - “make sure my classes were in order how I wanted them”
 - “if you need to refix your schedule having other options helps”
 - “classes I wanted and times I wanted”
 - “if it would have been directed more towards my major it would have been more interesting”
 - “afraid something would come up”
 - “changing my mind is not a good idea”
- **Navigation**: The act, activity or process of finding the way and the ability to utilize resources.
 - Sample phrases:

- “It helped me understand the process of course selection and what I needed to do”
- “I have a much better understanding of how the college experience works”
- “I learned to navigate Crowder better”
- “very helpful in allowing me to get my bearings set for the semester”
- “helped me learn some things I have used along the way”
- “helped me be able to navigate the web-site”
- “helped me use blackboard better and learn new things”
- “helped to know when the earliest date to enroll was”
- **Planning:** The act or process of making a plan to achieve or accomplish an objective, or following the roadmap to completion. Some sample phrases supporting the theme include:
 - “I knew exactly what classes I needed and got them all lined up through future semesters”
 - “putting me on my degree plan to complete the required coursework to obtain an Associate’s degree”
 - “made me focus on certain courses and it avoided taking courses that I did not need”
 - “causing me to develop my plan of study”
 - “encouraged me to think ahead and get all of my courses plan(n)ed out”
- **Goal:** Something the student is trying to do or achieve.
 - Sample phrases:
 - “I knew exactly what I needed to do to accomplish my goals of achieving that specific major”
 - “helped me stay enrolled in school b/c I have a clear goal in mind”
 - “help you to work towards an ultimate goal”
 - “push me through the semester and know what my real goal is”
- **Time to degree:** Managing the number of years or semesters to complete a degree program.
 - Sample phrases:
 - “to get my RN more quickly”
 - “getting me that much closer to my degree”
 - “gave me foresight to how long I would be attending Crowder before I would graduate”
 - “having not been in school for 10 years”

- “would of helped me not take 11 years to go back and do a completed second semester”
 - “made me aware of how quickly things can slip away”
 - “helped in managing my time to decide how many courses I could take”
 - “I feel as if I’ve went to Crowder this whole time and now I won’t be graduating”
 - “failing your classes can really affect your opportunities to finish college”
 - “I have been working for the last eight years, and I now see the value of a degree”
 - “to get my degree in a timely fashion since I am currently a part time student”
- **Avoiding Unnecessary Classes/Waste:** Preventing the chance of taking classes not needed for the student’s degree program
 - Sample phrases:
 - “avoided taking courses that I did not need”
 - “you may take a lot of classes but never get a degree which seems a waste of time and money”
 - “made it possible to where I didn’t have to take any unnecessary classes”
 - “it would be a waste of my own money to go to school and not have an end goal”
 - “paying for classes that I will end up not needing for my eventual major”
 - “I took classes I did not need”
 - “save you from taking any unnecessary classes”
- **Motivation and Self-efficacy:** Having a reason to persist in school and a student’s confidence level in being successful in college. Some sample phrases supporting this theme include:
 - “helped me to realize that I could actually do college”
 - “the instructor help(ed) me feel more motivated”
 - “it gave me confidence in moving towards my goals”
 - “helped me with study habits and self-esteem”
 - “mentally ready for when classes start”
 - “helps your mindset”
 - “become more motivated to finish college”

- “successfully accomplished my first year of college at Crowder and loved it”
- “so I don’t feel so intimidated”

Appendix H

Model Implementation

In order to implement the following model effectively, it is recommended that administrators develop task forces to determine timeline implementation as well as programing specifics. Entry/mid-level staff should be charged with carrying out specifics related to programs. Formative/Summative reports should be given to administrators (as deemed appropriate by mid-level administrators) who will monitor the effectiveness of the programs and implement strategies/changes to increase program effectiveness for the students served. Task forces should include representatives from various departments and colleges across campus, of various ethnic/cultural groups, with varying levels of responsibility and influence.

Model Definitions

Availability

The student has ease of access in registering for classes needed for a particular program or interest.

Avoiding Unnecessary Classes

The student takes few classes not pertaining to major/interests

Deferred Action for Childhood Arrivals (DACA)

DACA is an American immigration policy that allows certain illegal and/or undocumented immigrants who entered the country before their 16th birthday (before June 2007) to receive a renewable two-year work permit and exemption from deportation.

Flexibility

The student is able to change and adapt as outside interests evolve or outside obligations arise.

Goal Oriented

The student has something specific and measurable to work towards or achieve.

Navigation

The student is able to locate and utilize needed resources.

Personal Accountability

The student takes responsibility for mistakes and develops an action plan to learn from them (internal locus of control).

Planning

The student has a plan to achieve or accomplish a particular objective.

Preparedness

The student is ready for next steps. Knowing what to expect in regards to which classes to take, how to enroll/re-enroll, and how to proceed.

Self-Efficacy and Motivation

The student has a reason to persist in school (i.e. for personal satisfaction) as well as confidence to be successful.

Sense of Belonging

The student feels at-home at the institution and is easily able to build a support network. The student may join organizations or engage in extracurricular activities, in order to find his/her niche.

Time to Degree

The student is able to plan which courses to take, and in what order.

Appendix H Model of Student Success

MODEL BEHAVIOR	ACTION	CAMPUS IMPACT
<p>Sense of Belonging</p> <p>Supporting Research to Consider: Strayhorn, T. (2013). College Students’ Sense of Belonging- Tinto, V. (2012).Completing College: Rethinking Institutional Action. Chicago University Press. Astin, A. W. (1977). Four critical years: Effect of college on beliefs, attitudes, and knowledge. Student Attrition Model: Bean (1983)</p>	<ul style="list-style-type: none"> ➤ Aggressive Recruitment of Diverse Faculty/Staff ➤ Unified message across campus ➤ Rebranding ➤ Community Partnerships with diverse degree/career tracks ➤ Review DACA policy ➤ Family Programming 	<ul style="list-style-type: none"> ➤ Welcoming Campus Climate - Gaining trust of Student and their families ➤ Positive Buzz - Increased Enrollment ➤ Increased likelihood of students seeking support services. ➤ Increased retention from Fall to Spring
<p>Connection to Campus Support</p> <p>Supporting Research to Consider: Tinto, V. (2012). Completing College: Rethinking Institutional Action. Chicago University Press. The Economic Perspective: Braxton (2003)</p>	<ul style="list-style-type: none"> ➤ Revised First Year Experience Programs <ul style="list-style-type: none"> - Learning Communities - Academic Advising Initiatives - Increase Student/Faculty Interaction ➤ Academic and Personal Support Services <ul style="list-style-type: none"> - i.e. Tutoring Services, Supplemental Instruction, Mentoring, Counseling Services ➤ Monitoring at-risk student progress <ul style="list-style-type: none"> - Learning Management Systems 	<ul style="list-style-type: none"> ➤ Preparedness <ul style="list-style-type: none"> - Improved Academic/Professional Planning - Availability - Flexibility ➤ Timely Degree Completion <ul style="list-style-type: none"> - Eliminating Unnecessary classes ➤ Goal –Setting ➤ Increased retention from Fall to Spring
<p>Self-Efficacy and Motivation</p> <p>Supporting Research to Consider: The Economic Perspective: Braxton (2003) Bandura, A. (1982). Self-efficacy mechanism in human agency. <i>American Psychologist</i>, 37(2), 122-147</p>	<ul style="list-style-type: none"> ➤ Monitoring at-risk student progress <ul style="list-style-type: none"> - Learning Management Systems - Use of Positive Reinforcement i.e. Student Recognition for Excellence (throughout semester) - Scholarships - Out of Class Opportunities (i.e. internships) • Academic & Personal Support Services 	<ul style="list-style-type: none"> ➤ Increased grit & perseverance ➤ Increased accountability for success ➤ Student has a “reason” to persist ➤ Student Lead Action Planning <ul style="list-style-type: none"> - Internal Locus of Control ➤ Increased retention from Fall to Spring

