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# Freshman Student-Faculty Interactions and GPA: Predictors of Retention and Overall Satisfaction

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ABSTRACT

This quantitative study explored questions developed to (a) help improve the quality of retention and satisfaction services at a comprehensive public university in the Midwest as well as to (b) contribute to the knowledge base by providing a broader application to similar institutions seeking to improve these services. Three theories served as a lens for this dissertation: Astin's Involvement Theory (Astin, 1975, 1984, 1985), Kuh's Engagement Theory (Kuh, Kinzie, Schuh, & Whitt, 2005; Kuh, Schuh, & Whitt, 1991; Kuh, Whitt, & Strage, 1989), and Tinto's Theory of Student Departure (Tinto, 1975, 1987, 1993). A logistic regression analysis determined that students' overall satisfaction and GPA were statistically significant in predicting student retention, but course-related and out-of-class student-faculty interactions were not significant in predicting retention. A multiple regression analysis indicated that GPA as well as course-related and out-of-class student-faculty interactions were not significant in predicting students' overall satisfaction. While there are some important limitations, this study does contribute to the growing body of research about ways to improve the retention and overall satisfaction of freshmen students, particularly students at this institution and similar institutions. In addition, recommendations for further research and practice are discussed.

# CHAPTER ONE

# INTRODUCTION

## Background

The freshman year of college is a critical period of transition and development. As students transition to college, they encounter a range of emotions, expectations, and experiences (Barefoot, 2000). Research has shown that student success is largely determined by the experiences that occur during the freshman year such as orientation, student services, programming, and academic advising (Smith & Bracken, 1993; Tinto, 1993; Upcraft & Gardner, 1989). Therefore, a vast amount of research focusing on the freshman year experience has been conducted about the following: creating educationally powerful environments (Chickering & Reisser, 1993), bridging the student affairs and academic affairs gap (Gardner, 1986; Greenlaw, Anliker, & Barker, 1997), connecting students to the institution (Levitz & Noel, 1989), organizing and administering successful orientation programs (Mullendore, 1998; Mullendore & Abraham, 1993), and designing successful transitions (Upcraft, 1993; Upcraft & Gardner, 1989; Ward-Roof & Hatch, 2003). Because the freshman year can be challenging for students as they transition to college, institutions of higher education must be concerned with the support they offer to this population.

Similarly, college student departure and retention have been studied in great length since the 1970s (Astin, 1975, 1984, 1993, 1996, 1997; Johnson, 2002; Kennedy, Gordon, & Gordon, 1995; Milem & Berger, 1997; Sanders & Burton, 1996; Tinto, 1975, 1987, 1993, 1997; Upcraft, 1989, 1993; Ward-Roof, 2003; Wilkie & Redondo, 1996). Unfortunately, many students who begin college are leaving before completing their

degrees. Over two million students enrolled into college in 1993, but less than one million remained in school after their first year (Tinto, 1993). Half (51%) of students who enrolled at four-year institutions in 1995-1996 completed their bachelor's degrees within six years at institutions where they first enrolled. Only another 7% obtained their degrees after enrolling in two or more institutions (Berkner, He, & Cataldi, 2002). A more recent study conducted by the American College Testing Program (2001) reported that nearly two-thirds of high school students directly enroll into higher education, while only 74.2% of them are retained after their first year. These stagnant college completion rates along with greater external pressures for institutional accountability for student learning (Bok, 2006) have encouraged higher education administrators to better understand the factors that influence student success in college.

There is considerably less research that exists pertaining to student satisfaction in higher education (Douglass, McClelland, & Davies, 2008; Elliot & Healy, 2001; Kane, Williams, & Cappucciniansfield, 2008; Sanders & Burton, 1996). Many studies have found that student satisfaction is strongly connected to retention (Edwards & Waters, 1982; Freeman, Hall, & Bresciani, 2007; Starr, Betz, & Menne, 1972). For instance, when students are dissatisfied with the institution's academic or student support services their perception of the overall environment may be negatively skewed, which may result in their decision to depart (Sanders & Burton, 1996).

Although satisfaction is strongly related to retention, it can be a more powerful measure than retention because of its ability to capture greater amounts of data about students' experiences (Sanders & Burton, 1996). Since satisfaction is a continuous variable, it captures a range of responses. Whereas retention, a dichotomous variable,

captures only two responses (students' stayed or departed). Even when institutions have high retention rates, studying satisfaction can guide them in quality enhancement efforts targeted towards groups who can be expected to remain and graduate.

Further study is also needed that examines the relationship between student retention and student-faculty interactions (Zomer, 2006). Higher education scholars have emphasized the positive impacts of student-faculty interaction, including higher retention rates and greater student satisfaction (Astin, 1984, 1993; Bean, 1985; Bean & Kuh, 1984; Feldman & Newcomb, 1969; Kuh et al., 1991; Pascarella, 1985; Pascarella & Terenzini, 1991, 2005; Tinto, 1993; Wilson & Woods, 1974). However, almost all of these studies were conducted over ten years ago, which suggests another gap in the literature and need for current research. Most student-faculty interactions occur inside the classroom (e.g., class discussions, course-related projects, and receiving written or oral feedback on academic performance). However, higher education institutions can improve students' satisfaction of their college experience by allowing opportunities for faculty and students to develop relationships outside the classroom (Feldman & Newcomb, 1969). Out-of-class opportunities may include the following: mentoring and academic advising, involvement in extra-curricular activities, or informal meetings to discuss academic or social issues (Crosgrove, 1986; Feldman & Newcomb, 1969; Pascarella, 1980; Theophilides & Terenzini, 1981).

One type of out-of-class student-faculty interaction is faculty advising. Researchers have suggested that faculty or professional advising must be an integral part of the first-year experience (Tinto, 1999; Upcraft & Gardner, 1989). Several researchers have examined the relationship between academic advising and retention or satisfaction

(Austin, Cherney, Crowner, & Hill, 1997; Bai & Pan, 2010; Bailey, Bauman, & Lata, 1998; Clark, Waneta, & Leeds, 1995; Delaney, 2008; Fago, 1995; Kennedy et al., 1995). As indicated earlier, several researchers have suggested that contact with faculty is directly related to student learning; therefore, faculty advising may also have a positive effect on student learning, which may contribute to their overall satisfaction and retention. Unfortunately, good advising is often not recognized as an important predictor for a successful college experience (Light, 2001). Therefore, more studies are needed to demonstrate its importance and relationship to student satisfaction and retention (Jacobi, 1991).

To address the need for more research, this study used The National Survey of Student Engagement (NSSE) instrument to analyze students' experiences. The NSSE was conceived in response to accountability questions from the government, accrediting agencies, students, and parents as a means to record the current context of undergraduate student engagement at colleges and universities (NSSE Annual Student Report, 2006). The NSSE measures student engagement, a construct that many studies have shown facilitates increased retention (Gong, Presley, & White, 2006; Gordon, Ludlum, & Hoey, 2006; Herzog, 2004; Li & Killian, 1999; Liu & Liu, 2000). The NSSE is administered annually to colleges and universities nationwide to obtain information about freshmen and senior student participation in programs and activities provided by institutions for learning and personal development.

The NSSE instrument consists of 28 questions (See Appendix A, NSSE survey instrument, 2011). NSSE administrators created five clusters or benchmarks of effective educational practice to organize these questions into specific student engagement areas.

The five benchmarks include: (a) Level of Academic Challenge, (b) Active and Collaborative Learning, (c) Student-Faculty Interactions, (d) Enriching Educational Experiences, and (e) Supportive Campus Environment (Kuh, 2001). NSSE provides participating institutions a variety of reports that compare their students' responses with those of students at self-selected comparison institutions. Comparisons are available for individual survey questions and the five NSSE Benchmarks. NSSE administrators help colleges and universities better respond to questions related to accountability, student learning, conditions that foster success, and retention (NSSE Annual Student Report, 2006).

This study examined the level of engagement of freshmen students during their spring semester of 2009 at a comprehensive public institution located in the Midwest using retrieved National Survey of Student Engagement (NSSE) archival data. More specifically, this study analyzed how student-faculty interactions and Grade Point Average (GPA) predict student retention and overall satisfaction. The sample of this study included 288 first-year students from the spring semester of 2009. Predictor variables of this study consisted of the following: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA. The study also included the following outcome variables: retention and overall satisfaction.

The study was designed to (a) answer retention and satisfaction questions developed to contribute to the improvement of services at a comprehensive public university in the Midwest and to (b) contribute to the knowledge base by providing a broader application to similar educational institutions that also seek to improve retention

and satisfaction. This chapter introduces the theoretical framework, statement of the problem, purpose of the study, research questions, delimitations, and key terms.

## Theoretical Framework

Retention and student engagement theories guided this research. Throughout the retention literature, researchers have examined the relationship of students and the institution through a framework that focuses on academic or nonacademic background factors. Some academic background factors include the quality of programs (Kuh, 2001) and faculty interactions with students (Astin, 1993; Stoecker, Pascarela, & Wolfle, 1988). One nonacademic factor that often contributes to student retention is satisfaction (Bean, 1990). Satisfaction often contributes to student retention because when students are dissatisfied with their institution's academic or nonacademic services their perception of the overall environment may be negatively affected, which may result in their decision to leave (Cabrera, Nora, & Castaneda, 1993; Upcraft & Schuh, 1996).

Higher education scholars have emphasized the positive impacts of student-faculty interactions, including retention and satisfaction (Astin, 1984, 1993; Bean, 1985; Bean & Kuh, 1984; Feldman & Newcomb, 1969; Kuh et al., 1991; Pascarella, 1985; Pascarella & Terenzini, 1991, 2005; Tinto, 1993; Wilson & Woods, 1974). Earlier scholars have asserted that an effective education requires close working relationships between undergraduate students and faculty (Wilson, Graff, Dienst, Woods, & Bravy, 1975). Recent scholars have indicated that student-faculty interactions that occur both inside and outside the classroom lead to greater student development and satisfaction (Astin, 1993; Kuh & Hu, 2001). For instance, Kuh and Hu (2001) discovered that frequent and meaningful interactions between students and their instructors led to substantial positive

effects on students' efforts in their learning and personal development, which were important components of their satisfaction.

Three theories served as a lens for this dissertation, all of which address the question of why some students leave campus before they have completed their degree. These three theories include Astin's Involvement Theory (Astin, 1975, 1984, 1985), Kuh's Engagement Theory (Kuh, Kinzie, Schuh, & Whitt, 2005; Kuh et al., 1991; Kuh et al., 1989), and Tinto's Theory of Student Departure (Tinto, 1975, 1987, 1993). These theories are the theoretical foundation of many programs in higher education (Kuh et al., 2005). Additional information about each of these theories is addressed in the next chapter.

## Statement of the Problem

This dissertation examined NSSE data from a comprehensive public institution located in the Midwest. The university is part of Minnesota State Colleges and Universities (MnSCU), a system of the 32 public colleges and universities throughout the state of Minnesota. The school was founded in 1868, serving 27 students. Today the school serves a student population of more than 14,500 students, including both graduate and undergraduate programs. There are also approximately 1,800 faculty and staff, including more than 640 teaching faculty (College Website, 2010). This institution is one of the hundreds of other national colleges and universities to participate in the NSSE survey on a bi-annual basis. After reviewing their first-year class 2009 NSSE data report, administrators discovered that this institution scored lower than their regional and Carnegie peers in engagement across each of the five benchmark areas (see Table 1). Carnegie peers refers to the Carnegie Classification of Institutions of Higher Education, a

framework for classifying, or grouping, colleges and universities in the United States (The Carnegie Classification of Institutions of Higher Education, 2010).

The purpose of the framework is for educational research and analysis, where it is often important to identify groups of roughly comparable institutions. The classification includes all accredited, degree-granting colleges and universities in the United States that are represented in the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS). Additional information about the institution's regional and Carnegie peers and scores may be found in Table 1.

This institution has maintained an average first-to-second year retention rate of 77.6% from 1999-2009 (Institutional Research, 2010). This study helped explain ways in which these low benchmarks were related to its retention rate, which could benefit administrators while making decisions about ways to improve their students' undergraduate education. This study contributed to the knowledge base by providing a broader application to similar institutions that are also seeking ways to improve their retention rates. This study also sought to find whether or not student-faculty interactions and GPA are predictors of students' retention and overall satisfaction for this particular sample.

## Purpose of the Study

Despite numerous studies on the freshman year experience and on retention studies and strategies, attrition rates from colleges and universities continue to be high. Specific retention rates for public institutions have historically been lower than private colleges. Completion rates for public colleges are 39.6% compared to private colleges, which are 56.1% (ACT, 2006). Given the current national education agenda and goals,

these low completion rates are unacceptable. These stagnant college completion rates along with greater external pressures for institutional accountability for student learning have encouraged higher education institutions to better understand the factors that influence student success in college (Bok, 2006).

More studies are needed that analyze students' satisfaction in higher education (e.g., Douglass et al., 2008; Elliot & Healy, 2001; Kane et al., 2008; Sanders & Burton, 1996), the impacts of student-faculty interaction (e.g., Astin, 1984, 1993; Bean, 1985; Bean & Kuh, 1984; Feldman & Newcomb, 1969; Kuh et al., 1991; Pascarella, 1985; Pascarella & Terenzini, 1991, 2005; Tinto, 1993; Wilson & Woods, 1974), and how GPA can be a predictor of retention (Allen, 1999; Astin, 1993; Edwards & Waters, 1982; Feldman, 1993; Tinto, 1993) or satisfaction (Aitken, 1982; Bean, 1983). The purpose of this study was to (a) explain retention and satisfaction questions developed to contribute to the improvement of services at a comprehensive public university in the Midwest and (b) contribute to the knowledge base by providing a broader application to similar educational institutions that also seek to improve retention and satisfaction. Increased knowledge addressing the lack of information about student-faculty interactions and GPA and their prediction of student retention and overall satisfaction could result in the creation of programs and services designed to improve student enrollment and satisfaction during the freshman year. This study provided valuable information to the university under study since no research has used the NSSE instrument to explore the relationships of these variables.

Given the institution's low student engagement NSSE scores in all five benchmarks areas, the research questions of this study examined how student-faculty

interactions and GPA predicted students' retention and overall satisfaction. This dissertation first provides the theoretical framework and a review of literature. The methodology section describes the study's research design, including the following: setting, participants, instrument, variables, research questions, and data analysis. The findings and discussion sections provide the results of the study as well as recommendations to administrators and faculty, which could be especially helpful to the university under study and to similar institutions.

## Research Questions

This study analyzed how student-faculty interactions and GPA predicted student retention and overall satisfaction at one comprehensive public institution. Two research questions guided the study:

Research question one. Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college significantly predict their decision to stay or depart from the institution?

Research question two. Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college significantly predict their overall satisfaction of the institution?

## Research Hypotheses

### Research hypothesis for question one.

H0: The amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA will not significantly predict

their decision to stay at or depart from the institution during their freshman year of college.

Ha: The alternative hypothesis is that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college will significantly predict their decision to stay or depart from the institution. Foundational retention research clearly points to a relationship between student-faculty interactions and retention (Terenzini & Pascarella, 1976, 1977; Pascarella & Terenzini 1979, 1980). Student-faculty interactions that occur inside the classroom (i.e., course-related interactions) are important because the college educational encounters that occur inside the classroom are a central feature of students' educational experience (Tinto, 1997). Researchers have found that experiential learning opportunities inside the classroom promoted greater student involvement or integration into the life of the institution, which resulted in increased student retention (Astin, 1984; Mallette & Cabrera, 1991; Nora, 1987; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1977). Student-faculty interactions that occur outside the classroom are also important (Kuh & Hu, 2001). Researchers have found that the amount of interactions students have with faculty outside of the classroom was one of the strongest contributing differences between departing and returning students (Terenzini & Pascarella, 1976, 1977).

As addressed earlier, many studies have found that student satisfaction is strongly connected to retention (Edwards & Waters, 1982; Freeman et al., 2007; Starr et al., 1972). In other words, students' dissatisfaction or their institution's academic and/or student support services can lead to their decision to stay or depart (Sanders & Burton,

1996). Several researchers have also found that students' GPA can predict their retention (Allen, 1999; Astin, 1993; Feldman, 1993; Tinto, 1993). Both Astin (1996) and Tinto's (1975) theories discuss the importance of academic achievement as a predictor of student retention. Other studies have examined the relationship between college attrition and academic performance and found that students' freshman GPA was a significant predictor of retention from the first to second year of college (Allen, 1999; Edwards & Waters, 1982; Feldman, 1993).

**Research hypothesis for question two.**

H0: The amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA will not significantly predict their overall satisfaction of the institution during their freshman year of college.

Ha: The alternative hypothesis is that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college will significantly predict their overall satisfaction with the institution. As frontline representatives of their institutions, faculty have the potential to integrate students into the academic fabric of the institutional community and directly influence their overall satisfaction of the entire institution (Schreiner, 1988).

Students have reported cases of when they have been dissatisfied with the performance or manner of a faculty instructor and how that experience translated into their dissatisfaction of the entire institution (Schreiner, 1988; Stith, 1997). For instance, students reported frustrations of faculty being under-qualified or over-qualified and with faculty coursework being too easy or too challenging (Tinto, 1993). When students' perceived needs, interests, and preferences were mismatched with the existing offerings,

such as poor teaching, they experienced a lack of fit or overall dissatisfaction between their needs, interests, and preferences to those of their institution (Tinto, 1993). Furthermore, another study found that friendly student-faculty interaction outside of the classroom was more significant in students' overall satisfaction than formal student-faculty interaction inside the classroom (Endo & Harpel, 1982). A similar study found that students who experienced institutional isolation were lacking meaningful contact with faculty (Tinto, 1993). Students' GPA may also influence their satisfaction (Bean, 1983). For instance, researchers surveyed students to analyze the relationship between GPA, satisfaction, and retention and found that students' GPAs were affected by satisfaction contributors, such as their satisfaction of their major, courses, peer involvement, and instructors (Aitken, 1982).

## Delimitations of the Study

A delimitation of the current study is that the results cannot be generalized to other educational institutions of different types and sizes. This is due to the nature and characteristics of the comprehensive public university under study. A second delimitation is that the sample of this current study was limited to students who matriculated in the fall of 2009. Therefore, students who entered the institution prior to or after that year may have had different experiences given the structural changes in instruction, programming, and services that occur from year to year. Finally, the sample size of this current study includes 288 freshmen out of the whole freshman population. Thus, this low response rate (15%) and lack of diversity (86.5% White majority) within the sample are additional delimitations when generalizing the results.

## Definitions of Key Terms

This study uses specific terminology. First, the National Survey of Student Engagement, its college definition, and its five Benchmarks are outlined. Next, the study's variables are defined: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA. Finally, the following terms related to this study are defined: first-year student/freshmen, retention/persistence, and attrition.

**National Survey of Student Engagement (NSSE).** The National Survey of Student Engagement (NSSE) is a reliable instrument and records the current context of student engagement at comprehensive colleges and universities (NSSE, 2006). The NSSE provide estimates of student engagement, or participation, in various college programs and its survey questions have been designed to reflect best practices and desired higher education outcomes (NSSE, 2006). The NSSE was conceived in 1998 and was supported by a grant from The Pew Charitable Trusts. The NSSE conducted a successful pilot in 1999 that involved more than 75 selected colleges and universities. Approximately 275 colleges and universities participated in the inaugural launch in the spring of 2000 (NSSE, 2011).

The NSSE student engagement results provide higher education administrators, external stakeholders, prospective students, parents, and counselors with information about aspects of college quality that is unavailable in other accessible venues, such as college rankings (NSSE, 2011). The NSSE results compare individual institution scores with national averages for their institutional type represented by Carnegie in order to provide its higher education administrators with a frame of reference to interpret their

scores. NSSE results also encourage higher education administrators to develop strategies that might improve their students' undergraduate education. The results are helpful to external stakeholders of higher education, including accrediting bodies and state oversight agencies (NSSE, 2011). The NSSE results can assist prospective students, parents, and counselors in their decision making process when selecting an institution that is best aligned with their students' needs.

**National Survey of Student Engagement (NSSE) benchmarks.** The five NSSE Benchmarks and behavior items within each benchmark measures institutional quality for student engagement (see Tables 4 and 5). NSSE Benchmarks assist colleges and universities with how to better respond to accountability questions (NSSE, 2004, 2006). The five NSSE Benchmarks include the following: (a) Level of Academic Challenge (11 behavior items), (b) Active and Collaborative Learning (seven behavior items), (c) Student-Faculty Interaction (six behavior items), (d) Enriching Educational Experiences (12 behavior items), and (e) Supportive Campus Environment (six behavior items).

**Course-related interactions with faculty.** Course-related interactions with faculty is a scalelet within the NSSE survey and includes the following three questions from the survey: discussed grades or assignments with an instructor, discussed ideas from your readings or classes with faculty members outside of class, and received prompt written or oral feedback from faculty on your academic performance. Additional information about how this scalelet is measured will be discussed in Chapter three.

**Out-of-class interactions with faculty.** Out-of-class interactions with faculty is a scalelet item with the NSSE survey and includes the following three items: talked about career plans with a faculty member or advisor, worked with faculty members on activities

other than coursework, and worked on a research project with a faculty member outside of course or program requirements. Additional information about how this scalelet is measured will be discussed in Chapter three.

**Overall satisfaction.** Overall satisfaction is a scale within the NSSE survey and includes the following two questions from the survey: How would you evaluate your entire educational experience at this institution? If you could start over again, would you go to the same institution you are now attending? Additional information about how this scale is measured will be discussed in Chapter three.

**Grade Point Average (GPA).** A student's GPA is a number that represents the average grade per credit for classes taken in a given period of time (usually a term or an entire university career). In this study, the cumulative GPA scores of the participants were analyzed over the course of their entire academic year (both fall and spring semesters). Students' GPA scores were calculated according to the institution's policies and procedures (College Website: Office of the Registrar GPA information, 2011).

**Freshmen/First-year student.** A first-year student can be defined as any student enrolling into the institution for the first-year, but is often defined as a student having freshmen status. The sample of students in this study are freshmen status: students who entered the institution either in the summer or fall of 2008 with fewer than twelve semester hours completed following high school graduation. This definition includes students entering the institution with credits earned through academic programs including Advanced Placement, the Post-Secondary Enrollment Option (PSEO), concurrent enrollment, dual enrollment with community colleges, or other arrangements with

colleges and universities. Although the terms freshman and first-year student can be used interchangeably, for the purposes of this study the term freshman will be used.

**Retention/Persistence.** Retention generally refers to institutional efforts to help students return to the same college in which they initially enrolled (Lenning, Beal, & Sauer, 1980). Persistence is commonly defined as a first year student returning to regular enrollment status in the first semester of their sophomore year and is positively correlated with the likelihood of eventual graduation from the institution. Persistence refers to students' ambition to stay enrolled at the institution they originally matriculated (Mallinckrodt & Sedlacek, 1987; Yu, DiGangi, & Jannasch-Penn, 2007). Although retention and persistence can be used interchangeably, the term retention will be used for purposes of this study.

**Attrition.** Attrition is the opposite of persistence or retention. Attrition occurs when students depart from the university without completing a degree (Bean, 1978). Based on evidence from exploratory studies on retention and attrition, researchers (Baumgart & Johnstone, 1977; Pascarella & Terenzini, 1979, 1980; USA Group Noel Levitz, 1997) identified the end of the freshman year as the period when attrition is heaviest.

## Summary

Chapter one introduced the study's background, theoretical underpinning, problem and purpose, research questions, research hypotheses, delimitations, and key terms. The theoretical underpinning for the study includes retention and student engagement theories (Astin, 1975, 1984, 1985; Kuh et al., 2005; Kuh et al., 1991; Kuh et al., 1989; Tinto, 1975, 1987, 1993). The purpose of this dissertation is to contribute to the knowledge base by addressing the lack of information about student-faculty interactions

and GPA as predictors of student satisfaction and retention during the freshman year. The study also provides valuable information to the institution under study. The NSSE instrument explores the influence of the following independent variables: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA upon the following dependent variables: retention and overall satisfaction. Delimitations were outlined and key terms were defined. Chapter two discusses a review of the literature, Chapter three discusses the proposed methods, Chapter four presents the findings, and Chapter five integrates the findings with previous literature and discusses limitations and recommendations for future research and practice.

# CHAPTER TWO

# REVIEW OF THE LITERATURE

## Introduction

The American workforce is demanding more college-educated employees as the economy is becoming more global and knowledge-based (Lotkowski, Robbins, & Noeth, 2004). Nearly every sector of the United States economy requires workers with specific knowledge that extends beyond the scope of a high school education (Carnevale & Desrochers, 2003). Moreover, according to the US Department of Labor, by 2012 the number of jobs requiring advanced skills will grow to twice the rate of those requiring only basic skills (Hecker, 2004).

Therefore, the need to study student retention has become more paramount than ever as the demand for a college education has risen, while the level of degree completion has remained the same (Kuh et al., 2005). The National Survey of Student Engagement (NSSE) is a leading instrument for helping colleges and universities to understand retention factors as well as identify relationships among those factors. The instrument measures five engagement factors believed to promote retention: Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experience, and Supportive Campus Environment (NSSE, 2006).

This review of literature discusses the background characteristics and importance of studying retention, the theoretical framework of this study, and key elements of the NSSE. In addition, empirical studies about student-faculty interactions and GPA are examined highlighting their relationship to retention and student satisfaction during the freshman year of college.

## Student Retention Theories and Models

This section discusses background characteristics influencing retention and the importance of studying student retention in higher education. This section also examines the theoretical framework of this study, which includes: Alexander Astin's Involvement Theory (Astin, 1975, 1984, 1985) George Kuh's Engagement Theory (Kuh et al., 2005; Kuh et al., 1991; Kuh et al., 1989) and Vincent Tinto's Theory of Student Departure (Tinto, 1975, 1987, 1993). These theories are well known and accepted by student affairs professionals and have become the theoretical foundation for many higher education programs (Kuh et al., 2005). All three theories provide a lens for viewing the problem of attrition.

### Background Characteristics Influencing Retention

Between the first-year orientation and graduation, several things take place that may contribute to students' retention or attrition. Many students enter college without the necessary and academic skills (reading, writing, speaking, and test-taking) to complete their degree (Levitz & Noel, 1989). When students lack these skills it can influence their decision to stay or depart from the institution (Tinto, 1993). College academic success and retention have traditionally been predicted using demographic variables and academic variables such as parental education levels (Ting & Robinson, 1998), high school GPA (Tinto, 1987), high school rank (Haviland, Shaw, & Haviland, 1984), and standardized test scores (Lotkowski et al., 2004).

Other studies have suggested that other academic and nonacademic factors may significantly influence college performance and retention (Braxton, 2000; Sedlacek, 2002; Szulecka, Springett, & de Pauw, 1987). Some examples of academic factors at the

institution level are quality of programs (Kuh, 2001), faculty involvement with students (Astin, 1993; Kuh, 2001), availability of courses of study (Neslon & Urff, 1982), and the quality of instruction (Pascarella, Whitt, & Nora, 1996). For instance, Levitz and Noel (1989) suggested that faculty and administrators of institutions can play a large role in retaining college students. Non-academic factors may include the campus climate (e.g., environment, culture, needs of students, and student satisfaction; Upcraft & Schuh, 1996), faculty and administrators' commitment to students (Cabrera et al., 1993) financial aid awards (DesJardins, Ahlburg, & McCall, 2006), and students' ability to navigate the institution's academic and social systems (Padilla, 1999). For instance, the fit between students' personal, academic, and career expectations of college and the actual reality of their experience may influence their decision to stay or leave the institution (Braxton, Vesper, & Hossler, 1995).

**Importance of Studying Student Retention**

Postsecondary education is vital for a stronger national workforce and a better quality of life (Barfield & Bealieu, 1999). Low student retention rates at the postsecondary level may jeopardize the national economic future (ACT, 2004). Sixty percent of jobs in the United States require some measure of postsecondary education; therefore, it is not surprising that the quality of the undergraduate experience is of paramount interest to parents, college students, employers, accreditors and legislators (Kuh, 2001, 2007; Lotkowski et al., 2003). In response to the challenge of remaining economically competitive in a global economy, it is important that higher education institutions not only recruit students to enroll into higher education, but also to formalize strategies to retain them (Lotkowski et al., 2003).

According to the U.S. Department of Education Center, less than 50% of students who enter higher education institutions will obtain a baccalaureate degree (Seidman, 2005). Furthermore, most students drop out early in their college careers, with more than half leaving before their sophomore year (Consortium for Student Retention Data Exchange, 1999). Consequently, those students who drop out of college fall short of acquiring the skills, credentials, and knowledge that post-secondary institutions can provide (Carey, 2004). There are also many individual and societal benefits associated with degree completion such as financial benefits (Day & Newburger, 2002; Porter, 2002), learning benefits (McClanahan, 2004), and individual and social attributes (Hill, Hoffman, & Rex, 2005). Thus, degree holders have a greater likelihood of career advancement, an increased quality of life, and economic privileges.

In addition, degree completion has benefits for institutions of all sizes and affiliations. Authors of several studies have documented that institutions' retention through graduation percentages are in need of improvement (Astin & Oseguera, 2005; Kuh, 2007; Kurd, 2000; Siedman, 2005). Unfortunately, when retention rates are low, institutions lose financial resources and the ability to attract top tier faculty and students (Gansemer-Topf & Schuh, 2005; Patrick, 2007). For instance, public institutions' income from state appropriations is generally allocated in direct proportion to the number of students a particular college or university has enrolled (Nordquist, 1993). Therefore, it is necessary to better understand what makes retention possible in order to develop effective strategies that will improve the current degree completion statistics for higher education institutions. Researchers have spent considerable energy producing theories and models to explain retention.

**Astin's Model of Student Involvement**

Astin (1975, 1984) developed a retention model to examine the multiple variables that impact student retention. The focus of his model is how student involvement can impact student retention. He concluded that students learn by becoming involved, and that the more involved they are the more likely they are to stay in college. Astin (1984) expanded his concepts by explaining that his involvement theory has five basic postulates. First, involvement refers to the investment of both physical and psychological energy devoted to various objects. Second, involvement happens along a continuum. For instance, students may pursue an object, such as studying for an exam, with varying levels of commitment. Third, involvement has both qualitative and quantitative features. For example, the hours spent preparing for an exam can be quantitatively analyzed while the meaning students make of learning can be measured qualitatively. Fourth, the amount of learning and personal development students have is directly proportional to the quality and quantity of involvement they invest in that educational program. Finally, the effectiveness of educational policies and best practices are directly related to their level of student involvement (Astin, 1984).

Thus, the greater involvement and engagement students have within their college community, the greater the likelihood they will stay in college (Astin, 1984). There is specifically a connection with students' involvement in the academic life of the college that enhances higher level and more sophisticated thinking (Tinto, 1997). For instance, the greater students' involvement in college, especially its academic life and contact with faculty, the greater their acquisition of knowledge and development of skills. That engagement, both inside and outside the classroom, appears to be especially important to

student development (Astin, 1993; Endo & Harpel, 1982). Even among the students who stayed in college, those who reported higher levels of contact with peers and faculty also demonstrated higher levels of learning over the course of their college career (Endo & Harpel, 1982).

Moreover, a longitudinal study found that high levels of involvement to be an independent predictor of learning (Tinto, 1997). The same conclusion has been found from a growing body of research on the quality of student effort and its relationship to the extent of their learning (e.g., Kaufman & Creamer, 1991; Ory & Braskamp, 1988; Pace, 1984). In other words, the more effort students invest into their learning activities, the greater their learning (Tinto, 1997). This research suggests that getting students involved with faculty benefits universities by improving their retention rates as well as students as they acquire deeper levels of learning (Endo & Harpel, 1982).

**Kuh's Theory of Student Engagement**

The origin of student engagement theory begins with the work of Astin (1984, 1985), Pace (1984), and Kuh and his colleagues (Kuh et al., 1991; Kuh et al., 1989). Although these theorists used different terminology to describe their definition of student engagement, their views were based on the same premise that students learn from what they do in college. Kuh's Theory of Student Engagement addresses two concepts. First, engagement is student driven, meaning students who invest time and energy into studying and taking part in other purposeful activities (e.g., student organizations, group study, conversations with faculty) will achieve higher levels of engagement. Second, engagement is institution driven, meaning that colleges and universities also need to be purposeful in what they do in order to maximize students' opportunities for engagement

(Upcraft, Gardner, & Barefoot, 2005).

The following are several areas where colleges and universities can be purposeful in what they do for freshmen: (a) Recruiting and retaining students (enrollment management); (b) assessing freshmen student outcomes; (c) challenging and supporting freshmen both inside and outside the classroom; (d) encouraging expectations and performance requirements for faculty and staff; (e) creating a campus culture that fosters student success; (f) creating services for underrepresented minorities; (g) integrating diversity into the campus climate; (h) building a foundation for student success; (i) advocating for freshmen; (j) developing collaborative partnerships between academic and student affairs; (k) using and understanding technology; (l) facilitating faculty and staff professional development opportunities and in designing freshmen services such as first-year seminar courses, academic advising, service-learning projects, learning communities, orientation programs, living environments, and other support services (Upcraft et al., 2005). In other words, it is important for administrators and faculty of colleges and universities to be organized and thoughtful in how they allocate their time and resources in order to maximize opportunities for student engagement and learning.

Kuh's theory (1991) was developed while conducting the College Experiences Study. The study selected 14 colleges based on their high quality of out of class experiences (Kuh et al., 1991). The study later developed into the DEEP project (Documenting Effective Educational Practices) consisting of 20 colleges and universities ranging from highly selective public to private institutions (Kuh et al., 2005). These colleges received higher than expected scores on the National Study of Student Engagement (NSSE) and higher than predicted graduation rates, factors that contribute to

student engagement and related desired outcomes of college (Kuh et al., 2005).

Many scholars support the importance of institutional engagement (Chickering & Reisser, 1993; Kuh et al., 2005; Manning, Kinzie, & Schuh, 2006). In order for student engagement to exist students must be involved in quality learning opportunities both inside and outside the classroom (Carini, Kuh, & Klein, 2006; Coates, 2005; Pike, 2006; Porter, 2006). Students must make a concerted effort with their institution by taking advantage of the learning opportunities that are provided for them (Pascarella & Terenzini, 2005).

**Tinto's Theory of Student Departure**

Tinto developed a longitudinal model of the withdrawal process of college students (Tinto, 1975, 1987, 1993). Tinto adapted Durkheim's (1951) concept of anomie (which arises from a mismatch between personal or group standards with wider social standards) and Spady's (1970) theory of college student attrition to create his model of student departure (Tinto, 1993). Tinto proposed his original model in 1975 but continued to revise his theory to improve its validity. The purpose of his model was to address the process of student departure related to the events that occur within an institution, including the interactions between students and other members of the academic and social systems of the institution (Tinto, 1987).

Tinto's longitudinal model of student departure was two-dimensional (Tinto, 1975). Tinto (1975) theorized that students come to a particular university with a combination of intentions, goals, and commitments (e.g., highest degree expected, importance of graduating from college). He suggested that when students' background traits (e.g., sex, race, ethnicity, secondary school achievement, academic ability, and family social status)

and initial commitments (e.g., selecting a college) were combined, they would become predictors of how well students would perform academically and integrate into the community, which would impact their completion. Tinto speculated that certain student background characteristics would impact students' decision to stay or depart more than others. Some students might have trouble finding friends and struggle to socially integrate, and other students might find that their culture or values are at odds with those of the new community. For example, a devout Catholic student may have difficulty accepting the values of a secular college. A studious person who ends up in a party dorm may encounter an uncomfortable mismatch between her priorities and those of her classmates. Hence, Tinto concluded that students who experienced isolation, adjustment issues, difficulty, or incongruence with the institution were more likely to depart than students who did not experience those dynamics (Tinto, 1975, 1987).

Academic integration and social integration are two core concepts of Tinto's model. Tinto (1975, 1987, 1993) hypothesized that the better students academically and socially integrate into college systems, the more likely they would experience success in college. Academic integration includes the formal education of students and includes activities inside the classroom or in laboratories that involve faculty and staff whose primary responsibilities are the education of students. Social integration includes the daily life and personal needs of students as well as the various members of the institution, and includes interactions among students, faculty, and staff that take place largely outside the formal academic domain of the college (Tinto, 1993). To summarize, stronger levels of students' social and academic integration, coupled with their personal and family aspirations and background characteristics led to greater commitment to the institution and to degree

completion according to Tinto's longitudinal model (1975, 1987, 1993).

## Key Elements of NSSE

Higher education institutions have relied on theoretical departure and engagement models to explain retention and attrition behaviors. For instance, the *Seven Practices for Good Practice in Undergraduate Education* model was inspired on retention and engagement models and includes the following practices: (a) student-faculty contact, (b) cooperation among students, (c) active learning, (d) receiving prompt feedback, (e) student time on task, (f) communication of high expectations, and (g) respect for diverse talents and ways of learning (Chickering & Gamsom, 1987). This model and the other models mentioned in this review of literature have been synthesized and created into measurement tools.

One such tool is the National Survey of Student Engagement (NSSE). The initial NSSE project was conceived as a means to record the current context of student engagement at four-year colleges and universities. The NSSE annually obtains information from random samples of first-year and senior-year students (½ of first year and ½ of senior populations) regarding their experiences as undergraduates in college. The NSSE was initially started using grant money from the Pew Charitable Trust. Since 2002, the survey has been conducted and supported by institutional participation fees. The NSSE is based on research and theory related to effective undergraduate education. That is, the voluminous research on college student development showing the time and energy students devote to educationally purposeful activities and predict their learning and personal development have been used as theoretical lenses for the NSSE (e.g., Astin, 1993; Pace, 1980; Pascarella & Terenzini, 1991).

The NSSE instrument consists of 28 questions (NSSE survey instrument, 2011). NSSE administrators created five clusters or benchmarks of effective educational practice to organize these questions into specific student engagement areas. The five benchmarks include: (a) Level of Academic Challenge, (b) Active and Collaborative Learning, (c) Student-Faculty Interactions, (d) Enriching Educational Experiences, and (e) Supportive Campus Environment (Kuh, 2001). Each benchmark is theoretical driven and measures specific questions within the survey. The NSSE provides participating institutions a variety of reports that compare their students' responses with those of students at self-selected groups of comparison institutions. Comparisons are available for individual survey questions as well as the five NSSE Benchmarks. NSSE administrators help colleges and universities better respond to questions about accountability, student learning, conditions that foster success, and retention (NSSE Annual Student Report, 2006). Additional information about the five benchmarks is addressed in Chapter three.

The NSSE focuses more on student outcomes to define collegiate quality rather than on particular educational outcomes such as institutional rankings that tend to be synonymous with institutional prestige, reputation, and resources (Kuh, 2001). Moreover, NSSE researchers seek to discover the ways in which students use resources rather than focusing on the resources alone (Kuh, 2001). The NSSE survey was strongly influenced by retention theory and was conceived out of decades of research and included the work of student affairs professionals, identity and development theorists, and higher education research pioneers (e.g., Astin, 1993; Bean, 1985; Pascarella, 1985; Spady, 1970; Tinto, 1975). Their goal was to improve higher education institutions by fostering comparative and consortial activity and producing systematic national data on "good educational

practices" (Kuh, 2003). The survey gained traction utilizing three of the seven principles from the *Seven Practices for Good Practice in Undergraduate Education*: the level of academic challenge, the time a student spends on a specific task, and the participation a student experiences in other educationally purposeful activities (Chickering & Gamson, 1987). Each of these principles influence the quality of students' learning and overall college experience (Kuh, 2001).

The first principle, the level of academic challenge, is enhanced student learning that occurs when expectations for student performance inside and outside the classroom are high, are appropriate to students' abilities and aspirations, and are consistent with the institution's mission and philosophy (Chickering & Gamson, 1987). Student expectations should address the wide range of student behaviors associated with academic achievement, intellectual and psychosocial development, and individual and community responsibility (Chickering & Gamson, 1987). Thus, when faculty and administrators expect more from students they will receive more them.

The second principle, the time a student spends on a specific task involves the time and energy students contribute to their learning (Chickering & Gamson, 1987). Learning to use one's time well is critical for professionals and students. Effective learning occurs for students when faculty allocate a realistic amount of time for each task. Learning to use time well is critical for students and professionals alike (Chickering & Gamson, 1987). Thus, when faculty and administrators clarify time expectations for students and other professionals everyone has the opportunity to establish a high level of performance.

The third principle, the participation in educationally purposeful activities, occurs when learning is active. Students do not learn very much when they just sit in class.

However, students learn a lot when they talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. Active learning invites students to bring their life experiences into the learning process and encourages self-reflection of their own and others' perspectives. Experiential opportunities include active learning opportunities both inside and outside of the classroom (Chickering & Gamson, 1987).

A recent study examined the validity, reliability, and other psychometric properties of the NSSE survey for different types of students and institutions using both quantitative and qualitative methods (Kuh et al., 2006). Together these two methods enriched the understanding of student engagement in different institutional contexts and made an important contribution to the understanding of student success in college (Kuh et al., 2006). The sample of the study included 305,196 freshmen and senior African American, Asian American, Hispanic, and White students from 741 four-year colleges and universities who responded to NSSE in 2004 and 2005. The institutional types were (a) Historically Black Colleges and Universities (HBCUs), (b) Hispanic Serving Institutions (HSIs), and three types of Predominantly White Institutions (PWIs): (c) baccalaureate-granting schools, (d) master's granting schools, and (e) doctoral-granting schools. Thirty-one institutions were HBCUs with 6,175 respondents; 37 institutions were HSIs with 13,396 respondents; the remaining students came from PWIs. About 68,000 students were enrolled at baccalaureate-granting schools, 125,000 were at master's institutions, and 97,000 were at doctoral universities. An additional 15,000 students were enrolled at other types of institutions (Kuh et al., 2006).

The primary interest of the study was learning whether the activity of engagement

occurred inside or outside of class (Kuh et al., 2006). In general, the students thought broadly about their college experience when they responded, and included both in- and out-of-class experiences, which suggested that students included a range of experiences as the survey intended. One major finding of the study was that student engagement in educationally purposeful activities was positively related to their retention between the first and second year of college. In addition, the effects of engagement were generally in the same positive direction for students from different racial and ethnic backgrounds. A second major finding was that the NSSE instrument works equally well for students of color and White students in different institutional contexts, such as Predominantly White Institutions (PWIs), Historically Black Colleges and Universities (HBCUs), and Hispanic Serving Institutions (HSIs; Kuh et al., 2006).

The NSSE survey consists of multiple sections consisting of questions that ask students about their experiences inside and outside the classroom, educational and personal growth, opinions about school, educational goals, and demographic information (Kuh et al., 2006). This study places particular emphasis on the Student-Faculty Interaction benchmark. The Student-Faculty Interaction benchmark asks students how much they discuss grades with professors, talk about career plans with an advisor or faculty member, discuss ideas from readings or classes with faculty outside of class, work with faculty members on activities other than coursework, how quickly they have received feedback from faculty on academic performance, and if they have worked with a faculty member on a research project outside of course or program requirements (NSSE Measurement Scales, 2009).

NSSE data suggest that the frequency of student-faculty interaction is “much less

than what research studies suggest is optimal" (Kuh, 2001, p. 13). Students learn firsthand how to problem solve and think critically through interaction with faculty members inside and outside of the classroom (Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2006). Working on campus, writing for the student newspaper, or conducting research with a faculty member can be life-changing experiences for students. When students are encouraged to take responsibility for activities that require daily decisions and tasks, they become invested in them and more committed to the college and their studies. Thus, faculty as well as advisors, counselors, and other professionals who have consistent contact with students should encourage students to get involved in one or more of these kinds of activities because as students' role models and mentors, they have the ability to inspire life-long learning (Kuh et al., 2006).

Based on the first-year class 2009 NSSE data report, this institution under study scored lower on all five Benchmarks (including the Faculty-Student Interaction Benchmark that is analyzed in this study) than its regional and Carnegie peers. This institution has maintained an average retention rate of 77.6% (first to second year) from 1999-2009 (Institutional Research, 2010). This study explains whether or not these low benchmarks were at all related to its retention rate and could benefit administrators' understanding of how to improve its retention rate or keep it stable. In addition, this study contributes to the knowledge base by providing a broader application to similar educational institutions that are also seeking ways to improve their retention rates.

## Empirical Studies of Freshman Retention

This section examines empirical studies about freshmen as they relate to student retention and satisfaction. First, studies about student-faculty interactions, both inside and

outside the classroom, as they relate to retention and satisfaction are discussed. Next, studies about academic advising, a type of out-of-class student-faculty interaction are discussed. Finally, studies analyzing the relationship between GPA and retention or satisfaction are described.

**Studies Employing Student-Faculty Interaction**

Many foundational studies have underscored the importance of faculty relationships in the lives of students. Research has shown the importance of students' perceptions of faculty (Pascarella & Terenzini, 1979, 1980; Terenzini & Pascarella, 1976, 1977). The level of informal interaction with faculty outside of the classroom has been found to be one of the strongest contributors to differences between departing and returning students (Terenzini & Pascarella, 1976, 1977). The valence of students' perceptions of faculty has been linked to their background characteristics. For instance, students that were most positively affected by faculty perceptions were at risk, lower achieving, from families with lower levels of education, and had initially low aspirations towards degree completion (Pascarella & Terenzini, 1979).

The importance of student-faculty relations led additional researchers to discover how faculty interactions, including their concern for students, contributed to student retention or departure even more than the effect of their peer relationships (Pascarella & Terenzini, 1980). Based on the consistency of their results, other researchers have focused their work on the important association between students and faculty. I will now present findings from empirical studies that have explored student and faculty relationships and their influence on student retention and satisfaction.

Authors of foundational retention research have clearly pointed to an important link

between student and faculty relationships and retention (Pascarella & Terenzini 1979, 1980; Terenzini & Pascarella, 1976, 1977). This link has been established from the interactions that occur between students and faculty both inside and outside the classroom. In order to identify more information leading to potential solutions to the attrition problem, various researchers have set out to further explore these dynamics. Their findings further substantiate that student-faculty relationships are important to the retention puzzle (Pascarella & Terenzini, 1979, 1980; Terenzini & Pascarella, 1976, 1977). Toy stated, "It is clear that the performance and attitude of the faculty both in and outside of the classroom is a significant variable in the complex equation by which students form an opinion (1985, p. 385)." Given that faculty may have a significant impact on students' perceptions of the institution as a whole, it is important that faculty are involved as a solution in retaining students.

Many researchers examining student-faculty interaction and its relationship to retention have highlighted the influence of faculty in integrating students to the institution. Specific forms of interaction that can be organized into the institution inside or outside the classroom include student-faculty exchanges that are formal (e.g., exchanges within the academic domain) as well as exchanges that are informal (e.g., exchanges within the social domain; Pascarella & Terenzini, 1979). Formal student-faculty interaction includes interactions inside the classroom, which may include the following: class discussions, course-related projects, and receiving written or oral feedback on academic performance (Pascarella & Terenzini, 1979). Informal student-faculty interaction activities occur outside the classroom and may include the following: talking with a faculty member outside of class, visiting with a faculty member informally

after class, discussing career plans, having coffee with a faculty member, meeting with a faculty advisor, asking a faculty member for advice, and working on a research project (Kuh & Hu, 2001). Since these have been shown to be effective methods for discerning the type of interaction between students and faculty, other researchers have also described student-faculty interaction as they occur within academic and social domains of the integration process (Endo & Harpel, 1982; Pascarella, 1980; Wilson, Gaff, Dienst, Woods, Bavry, 1975; Wilson, Woods, & Gaff, 1974).

Faculty help students integrate into the academic realm of the institutional community. Although faculty members represent only a small segment of the professionals employed at a college or university, student impressions of the institution are shaped by their experiences with faculty. Students' first impressions of faculty have been found to be important in influencing and formulating students' opinion of the institution (Schreiner, 1988). Faculty members have been reported to be frontline representatives of their institutions because of how their interactions with students and role as educators impact students' reflection of the entire institution. Subsequently, students have reported cases of when they have been dissatisfied with the performance or manner of a faculty instructor and how that experience translated into their dissatisfaction of the entire institution (Schreiner, 1988). Similarly, a longitudinal study at a large university surveyed 310 students and found that 63% of the students who dropped out after their first year were not impressed with the caliber of the faculty (Stith, 1994).

This relationship between student discontent and withdrawal decisions has been defined as incongruence. Incongruence "refers in general to the mismatch or lack of fit between the needs, interests, and preferences of the individual and those of the

institution" (Tinto, 1993, p. 50). For instance, students may feel that their faculty are under-qualified or over-qualified or may find the coursework to be either undemanding or exceedingly challenging. When students experience academic boredom or feel that their intellectual life is too challenging, they may decide to withdraw from the institution (Tinto, 1993).

Eighteen students who had withdrawn from institutions in Utah were interviewed to analyze the central elements of Tinto's model (Nordquist, 1993). The questions were designed to address students' family background, personal goals as they related to college attendance, best and worst college experiences, social interaction, faculty interaction, availability of academic advising, and the circumstances surrounding their decision to leave school. All but one student described their overall best and worst college experiences involving a positive or negative interaction with a faculty member (Nordquist, 1993). Lacking interactions with faculty or having negative interactions with faculty led to students' departure (Nordquist, 1993). Some negative interactions included faculty who were not engaged with or seemed not to care about their students (Nordquist, 1993). This study further demonstrates how faculty can influence students' satisfaction or dissatisfaction of their college experience.

Academic student-faculty interactions influence students' ways of thinking, problem solving methods, and interest in life goals (Endo & Harpel, 1982). These interactions, such as the frequency of teacher immediacy behaviors (e.g., responsive verbal and non-verbal cues and gestures), contribute significantly to college students' academic achievement and perceptions of their scholastic competence (Woodside, Wong & Weist, 1999). For instance, research has shown that participation in learning

communities (e.g., collaborative and shared learning cohorts) enabled students to develop a network of support from a small supportive community of peers (Tinto, 1997). Learning communities encourage students to feel connected to the broader social communities of the college and to feel more engaged in the academic life of the institution. Communities of classroom-based peers have been found to support students by encouraging them to attend class regularly and participate in learning both inside and outside the classroom. In this manner, collaborative learning settings enabled students to bridge the academic-social divide that typically confronts students in these settings. In effect, learning communities served as the academic and social crossroads out of which "seamless" educational activities are constructed (Tinto, 1997).

Several researchers have also shown that social student-faculty interactions are equally important. Unfortunately, students experience institutional isolation when they cannot establish themselves into a social network and lack the personal connections that are necessary for belonging into communities of the institution (Tinto, 1993). Thus, it is the absence of meaningful contacts between students and faculty that contribute to this sense of isolation. Endo and Harpel (1982) examined types of student-faculty interaction and compared “friendly’’ versus “formal” interaction on several student outcomes categorized as personal/social, academic achievement, and satisfaction with education. Formal interaction consisted of discussions limited to objective topics. Friendly interaction, on the other hand, involved a broad range of topics including more personal subjects relating to the students’ cognitive and developmental growth. The findings revealed that the amount of friendly interaction affected nine of the fourteen outcome variables compared to formal interaction, which affected only two variables (Endo &

Harpel, 1982). Thus, the results supported the impact student-faculty interaction may have on students' academic and social outcomes of college and their overall satisfaction of their college experience.

The Stratil Counseling Inventory (SCI) has been used in identifying college freshmen that are prone to dropping out of college and in designing programs that increase student retention by stressing and rewarding early, frequent faculty-student contact (Schreiner, 1998). The SCI was administered to 213 college freshmen that became involved in a retention management program comprised of faculty-student interaction, an orientation program, and appropriate use of resources. The findings revealed that student-faculty interaction was critical early on because contact facilitated social interaction during a period prior to when peer relationships had been formed (Schreiner, 1998). The SCI accurately identified at-risk students and significant differences between scores of those who were retained and those who departed. Additionally, total retention increased from 61% in 1984 to 76.3% in 1986. Based on the significance of the results, it appears that dropout-prone students can be accurately identified at an early stage in their college careers, and a positive effect on retention can be achieved when the faculty of institutions initiate a comprehensive program, including the social and academic integration of students.

Another study similarly found that student-faculty mentoring relationships may greatly impact students' social and academic integration into the institution (Nordquist, 1993). Student motivation profiles were measured in relation to their academic and social integration into the college and found that students' positive perceptions of rapport with faculty was the greatest predictor of their ability to adopt a mastery achievement

orientation (e.g., welcoming challenges, an ability to maintain focus, retention in the face of obstacles, and believing that intelligence is increased through diligence; Strage, 1999). Thus, in addition this study found that mentoring relationships positively related to student retention (Nordquist, 1993).

**Studies Employing Academic Advising**

A recent description of academic advising delivery systems employed by colleges and universities includes faculty advising, professional advising, peer advising, and paraprofessional advising (Crocket, 1985). Faculty advising has been identified as the predominant advising provider (Crocket, 1985). Faculty advisors are considered experts in their academic subject, familiar with departmental offerings, and knowledgeable of professional opportunities within their fields. However, faculty advisors may have biases toward their own departments or may feel that their advising duties are in conflict with their other responsibilities (Allen & Smith, 2008a, 2008b). Professional academic advisors are the second most widely used advising delivery system. Professional advisors advise students full-time and are not limited to departmental biases like faculty advisors (Crockett, 1985). Rather, they are hired specifically to advise students and typically have been trained to have the necessary knowledge and skills to assist students with their life goals. Limitations of this role might include the lack of knowledge about specific course content and career opportunities within specific disciplines. Peer and paraprofessional advising are additional institutional delivery systems. However, these advisors typically have not been trained to handle some of the more complicated aspects of academic advising; therefore, their advising contribution could lead to problematic outcomes (Crocket, 1985).

In the past, the quality of academic advising was often unrecognized; however, institutional research has more recently considered academic advising as an institutional activity worth investigating (Belcheir, 1999). Institutions are now aware that when academic advising is effectively delivered, it can be a powerful influence on students' development and learning, often resulting in retention on college campuses (Crockett, 1985). For example, over 900 institutional administrators of retention programs reported inadequate academic advising as a primary factor associated with student attrition (Beal & Noel, 1980). Thus, this awareness has attributed a change in institutions to look more closely at the needs of students and its relationship to attrition (Belcheir, 1999).

The impact of faculty and professional academic advising within higher education has been recognized as an effective retention strategy (Noel, 1985). Enrollment decisions are the by-product of student satisfaction, and can be impacted by capable and concerned professionals that want to positively influence students' lives (Noel, 1985). Moreover, students' decision-making process to stay or depart from the institution can be analyzed as a cost-benefit analysis. For instance, students are continuously assessing the value of their experiences and weighing them against the costs; when they sense that the benefits are not being delivered or that they are not valued members of the institution, they may make the decision to leave the institution. In order to make students' experiences more beneficial, extensive institutional efforts must be made to provide value-added and enriching educational experiences (Noel, 1985). This process involves identifying and cultivating student talents and emphasizing student learning, growth, and development.

In addition, retaining students involves a commitment from all members of the academic community and clear expectations about curricular requirements and options.

Although many retention strategists believe efforts should be considered a student services responsibility, the researcher maintained that the primary players involved in a campus retention effort are those on the academic side of the institution. Noel stated, "This kind of guidance takes top-notch frontline teachers in the classroom and academic advisers in the advising office who are willing and able to interpret the curriculum for students" (1985, p. 9). According to this research, academic affairs administrators, faculty, and advisors have a tremendous responsibility in fostering environments that encourage student retention.

Faculty advising has evolved from a simple perfunctory activity where advisors prescribed required courses, to a more comprehensive and purposeful activity that emphasizes student development (Crocket, 1985). In order to recognize the significance of academic advising within a staying institutional climate, the role of the academic advisor must be considered. According to King (1993),

> Academic advising is the only structured service on our campuses that guarantees students some kind of interaction with concerned representatives of the institutions. Advising can therefore be viewed as the 'hub of the student services wheel', providing the linkages with other support services such as career planning, counseling, financial aid and tutoring. Advisors play a key role in helping students become integrated within the academic and social systems on campus, which in turn contributes to student growth, satisfaction and persistence. (pp. 21-22)

O'Banion (1972) was the original theorist to make the distinction between prescriptive and developmental advising. The five steps of O'Banion's (1972) model included: (a) exploration of life goals, (b) exploration of career goals, (c) selection of a

major or program of study, (d) selection of courses and (e) scheduling of courses. Current literature on academic advising has expanded upon O'Banion's (1972) original model to incorporate additional functions of the contemporary academic advisor within higher education. One responsibility of advisors is being informed about and communicating current institutional rules, procedures, timetables and policies (Pettress, 1996). Advisors should communicate this information in alignment with students' interests, values, potential major and career choices (Fago, 1995; Frost, 1991; Wade & Yoder, 1995). This is a complex process that involves analyzing institutional data as well as assessing students' needs (e.g., cognitive, affective, and behavioral), interpreting their goals, and determining the most effective intervention strategies (Fiddler & Alicea, 1996).

A second responsibility of advisors involves being a referral agent (Beasley-Fielstein, 1986; Petress, 1996). Academic advisors should be well equipped with basic knowledge of career counseling, study skills, and low-level interpersonal problem solving (Fago, 1995). But when the extent of a problem moves beyond the professional boundaries required of an academic advisor, it is the advisor's responsibility to be aware of appropriate services on or off campus that specialize in the student's particular situation. Students' academic success depends on their physical, mental, emotional, and spiritual health and oftentimes a referral to another service on campus is necessary (Petress, 1996). However, it is "the advisor's initial understanding, empathy, and competent referral that is the key to student well being. Students who do not really know, trust, and frequently interact with their advisor, seldom seek the help they need and deserve" (Pettress, 1996, p. 2). Therefore, advisors not only must be aware of appropriate referral services on or off campus, but they must also strive to develop an ongoing

personal relationship with their advisees (Metzner, 1989). This connection may help students may lead to greater involvement at the institution, increased learning and retention (Astin, 1984; Habley, 1982).

A third responsibility of the academic advisor is to be a personal mentor. Being a mentor involves establishing rapport and sustaining trust while focusing on students' individual needs and developmental requirements (Wade & Yoder, 1995). Mentorship involves an investment of time and a demonstration of care towards students (Beasley-Fielstein, 1986). In an advisor assessment survey, students based their judgments primarily on advisors' interpersonal qualities including helpfulness, accessibility, and levels of demonstrated concern and personal interest for the individual (Beasley-Fielstein, 1986). Furthermore, the quality of the student-advisor interaction in academic advising is a major contributing variable to student retention (Beasley-Fielstein, 1986). Thus, the mentoring relationship has the opportunity to offer students stability, assurance, and consistency while advisors serve as a source of confidential guidance, affirmation, and support (Pettress, 1996).

In addition to the various roles and types of advisors, academic advising is important to understand from the student perspective. According to the current literature, students rate advising as an essential component of their educational experience (Hendel & Tomsic, 2000). Moreover, students at all campuses have overwhelmingly expressed a desire for quality advising when selecting courses and choosing and preparing for a career (Hendel &Tomsic, 2000). Similarly, Fago (1995) conducted a study to examine the validity of the Advisor Effectiveness Questionnaire (AEQ), an instrument designed to measure the effectiveness of faculty advisors for a newly implemented academic advising

program at a small liberal arts college. The freshman students who were surveyed (approximately 1,100) based their satisfaction of advising in terms of their general college experience and viewed advising as a mentoring relationship as opposed to a technical process, similar to current definitions of academic advising within the literature. Students also reported that their perceptions of their individual adjustment difficulties were independent of perceptions of advising, suggesting that their personal difficulties do not affect the assessment of the advising process (Fago, 1995).

Similarly, students' satisfaction of their developmental academic advising relationship was examined at another institution (Beasley-Fielstein, 1986). Students who had originally completed an institutional telephone survey answering questions about academic advising were invited to participate in a more extensive interview addressing various aspects of the advising relationship. Twenty students participated, including 13 students who had originally expressed satisfaction with advising and 7 who had expressed dissatisfaction. Students were asked to describe and rate advisor/advising qualities and characteristics, behaviors, experiences, methods of delivery, perceptions of the relationship, and suggestions for improvement. Satisfied students perceived advisors as helpful and believed that advisors were generous with their time, accessible, a source of accurate information, and willing to take a personal interest in students. Dissatisfied students described advisors as unpredictable, indifferent, intimidating, and inaccessible (Beasley-Fielstein, 1986).

Four themes of effective advising emerged from the student interviews including the importance of (a) expediency and efficiency in addressing student problems, (b) having an attitude of concern for students, (c) taking a personal interest in students, and

(d) operating out of a context of educational and career goals. Themes of ineffective advising reflected a need for improvement in those four areas. Dissatisfied students requested administrators to select advisors based on their ability to relate to students and demonstrate a willingness to help students (Beasley-Fielstein, 1986).

Two additional studies have further captured students' dissatisfaction of advising. Recent graduates were asked to assess the campus academic programs, services, and the overall institutional climate in a college survey (Kent State University, 1993). Students were asked to rate and comment upon campus services including registration, advising, student activities, student records, career planning, graduation, program curriculum, teaching quality, course availability, and course content (Kent State University, 1993). Academic advising was rated the lowest among all the listed areas, and was further corroborated by several negative comments. Students' disappointment stemmed from advising errors, the failure of advisors to keep scheduled appointments, general incompetence, and a lack of appreciation of student needs. In a qualitative study, 18 students were interviewed who had recently withdrawn from several Utah universities concerning their institutional experiences related to retention (Nordquist, 1993). Students described their dissatisfaction and decision to depart from the institution as a result of a lack of or negative interaction with faculty and advisors (Nordquist, 1993).

Thus, academic advising maintains to be a critical component within higher education institutions. Academic advising developmentally contributes to students' future goals and aspirations within the context of educational offerings. Advisors are an institutional resource by serving students and connecting them to resources on or off campus where they can best be served. During the freshman year, advisors service as a

mentor is critical for students who have left behind their family and friends in order to provide information, affirmation, and guidance. Unfortunately, students are not always satisfied with academic advising. Researchers in this area of the literature have not yet established whether or not students' dissatisfaction of advising could ultimately affect their overall satisfaction of the institution, resulting in student attrition.

**Studies Employing GPA Related to Retention and Satisfaction**

Several researchers have found that students' GPA can predict retention (Allen, 1999; Astin, 1993; Feldman, 19993; Tinto, 1993). Both Astin (1996) and Tinto's (1975) theories discussed the importance of academic achievement as a predictor of student retention. Astin (1996) reported the importance of student involvement and its impact on retention in college. He suggested that the more students are involved in their academic endeavors, with faculty, and with other students, the more likely they are to have high GPAs and stay in college (Astin, 1996).

Tinto (1975) explained the importance of both academic and social integration for college retention. He stated that when students lack integration in either of the academic or social domain that they may depart from the institution. In addition, Tinto addressed how students enter higher education institutions with a variety of individual attributes such as their high school GPA. Moreover, he reported that students' high school GPA could have a direct impact on their academic performance in college, which could determine whether or not they stay or drop out of college (Tinto, 1975).

Another study examined the relationships between college attrition and academic performance, satisfaction with courses, and students overall satisfaction (Edwards & Waters, 1982). Data were collected from 223 university undergraduates who enrolled in

freshman level psychology courses. After two years, 155 freshmen records in the original sample were examined to see if they were still enrolled in the university. The analysis revealed that students' freshman GPA and overall satisfaction of the institution were significant predictors of attrition and retention (Edwards & Walters, 1982).

Similarly, predictors of attrition for freshman students at a community college were found to assist college personnel in identifying at risk students early on in their academic careers (Feldman, 1993). Based on a logistic regression model, the findings suggested that students' freshman GPA was the greatest predictor of retention (Feldman, 1993). In other words, the lower students' GPA, the greater their chances of leaving the institution (Feldman, 1993). In a more recent study, 581 freshmen students were surveyed at an institution in the Southwest to investigate the role of persistence behaviors (Allen, 1999). The findings suggested that student's freshman college GPA was significant in the variance of retention from the first to second year of college. Another longitudinal study at a large university surveyed 310 students and found that of all the students who stopped attending after their first year, 57% received a cumulative GPA of less than 2.0 (Stith, 1994).

Students' GPA may also relate to student satisfaction (Bean, 1983). For instance, one study used a survey to analyze the relationship between GPA, satisfaction, and retention (Aitken, 1982). The sample included 743 freshmen from the University of Massachusetts. The findings discovered that students' GPA was affected by the following satisfaction factors ranked in order of their importance: course satisfaction, student's feeling of isolation, satisfaction with their major, and rating of instructors (Aitken, 1982).

A more recent study identified and compared factors that impact student

satisfaction at the Council for Christian Colleges and Universities (CCCU) institutions and at non-CCCU institutions in the United States (Wu, 2007). Data were collected from students who completed the 1998 Cooperative Institutional Research Program (CIRP) Freshman Survey and the follow up College Student Survey (CSS) four years later. Forty-five CCCU institutions, with 2,772 students, and 27 non-CCCU institutions, with 1,305 students participated in the study. Chi-square tests and t-tests revealed differences between the CCCU and non-CCCU students on a variety of background characteristics. High school GPA was found to be a significant predictor of students' satisfaction of relationships with faculty, curriculum and instruction at both types of institutions (Wu, 2007).

## Summary

This chapter addressed the importance of studying college student retention and satisfaction for individual students, institutions and society. There is a great need for college degree holders in the United States since economic, personal, and societal implications are at stake. The review of literature also explained the theoretical framework for the proposed study: Astin's Model of Student Involvement (Astin, 1975, 1984, 1985), Kuh's Theory of Student Engagement (Kuh et al., 2005; Kuh et al., 1991; Kuh et al., 1989), and Tinto's Model of Student Departure (Tinto, 1975, 1987, 1993). This chapter also discussed the NSSE, an instrument that is informed by aforementioned research models and seeks to measure the effectiveness of an institution's retention efforts through the creation of benchmarks that offer feedback. NSSE's five benchmarks, which are believed to promote retention were analyzed: (a) Academic Challenge, (b) Active and Collaborative Learning, (c) Student-Faculty Interaction, (d) Enriching Educational

Experience, and (e) Supportive Campus Environment (NSSE, 2006). Finally, literature about the freshman year experience was presented, highlighting empirical studies about student-faculty interaction and GPA as they relate to satisfaction and retention. This study seeks to utilize the NSSE instrument to analyze retention and satisfaction at a four-year public institution in the Midwest. The next chapter discusses the research design and methodology.

# CHAPTER THREE

# RESEARCH DESIGN & METHODOLOGY

Chapter three describes the research design and methodology that were undertaken in this study. This chapter begins with a restatement of the purpose of the study. Next, the chapter discusses the research design, including the research setting and participants, instrument, and variables. The research design of this study will answer questions developed to help improve the quality of services at a comprehensive public university in the Midwest as well as to contribute to the knowledge base by providing a broader application to similar institutions that also seek to improve retention and satisfaction. In addition, the chapter includes an explanation of the research questions and data analysis.

## Restatement of Purpose

This quantitative study used archival data from the institutional records of a comprehensive public university in the Midwest to (a) examine retention and satisfaction questions developed to contribute to the improvement of services at that comprehensive public university in the Midwest and (b) contribute to the knowledge base by providing a broader application to similar educational institutions that also seek to improve retention and satisfaction. The NSSE instrument explored the influence of the following independent variables: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA upon the following dependent variables: retention and overall satisfaction.

## Research Design

This investigation involved a secondary data analysis of existing NSSE data and

student enrollment records. All data are property of the institution under study and are housed on a secure server. NSSE, GPA (freshman cumulative GPA), and student retention data (from the first to the second year) were obtained from the Office of Institutional Research. NSSE participants were matched with a unique eight-digit number. The statistics of this study included logistic and multiple regression. This section addresses the setting and participants, instrument, and variables developed for this investigation.

**Setting and Participants**

The university under study is a comprehensive public institution located in the Midwest. The school was founded in 1868, serving 27 students. Today the school serves a student population of more than 14, 500 students, including both graduate and undergraduate programs. Approximately 1,800 faculty and staff are employed at the institution, including more than 640 teaching faculty (College Website, 2010).

The participants of this study included a random sample of 288 of 1,937 freshmen students (½ of whole freshman population; 15% response rate) who were emailed sometime in February to March to participate in the 2009 NSSE survey. The NSSE survey asked students to answer questions about their ethnic and background characteristics. Fifty-three students did not complete this information. However, the ethnic and background characteristics of every student (matched by their unique id) were provided by the Office of Institutional Research; therefore, the IR data were used in this analysis since they more completely revealed the findings.

The students within this sample were coded into one of seven race/ethnicity groups based on their self-reported data (see Table 2). The largest group was White ($n$ = 249)

followed by Black or African American (*n* = 13), Asian, Asian American, or Pacific Islander (*n* = 12), Mexican, Mexican American, Hispanic, or Latino (*n* = 6), Unknown (*n* = 6), American Indian or other Native American (*n* = 1), and Foreign or International (*n* = 1).

In regard to gender, females made up 64% of the sample (*n* = 185) compared to 36% of males (*n* = 103). Ninety-eight percent of students were full-time students (*n* = 284) compared to 2% part-time students (*n* = 4). The average age was 18 years old. Tables 2 and 3 provide the ethnic and background characteristics of the sample in comparison to the entire freshman population of the institution under study. Although the sample is not very ethnically diverse, the sample closely compares to the ethnic and background characteristics of the entire 2009 freshman student population.

**Instrument**

The National Survey of Student Engagement (NSSE) survey was the instrument used for this study. The NSSE survey reflects behaviors by students and institutions that are associated with desired outcomes of college (Kuh, 2001). Moreover, the NSSE survey measures best practices posited by embraced retention theories and models (About NSSE, 2011). The survey measures student engagement, which represents two critical features of collegiate quality: (a) The amount of time and effort students put into their studies and educational related activities, and (b) how the institution strategically arranges its resources and organizes learning opportunities inside and outside the classroom to encourage student participation, which leads to student learning (Kuh, 2001). The NSSE survey is annually administered to samples of freshmen and senior students from hundreds of participating colleges and universities to collect data about their

undergraduate experience, including their levels of participation in activities that have been proven to impact learning and personal development (Kuh, 2001).

The NSSE survey is available in both paper and online options and is administered sometime in late January to May depending on the schedule created for the institution. Administering the NSSE requires collaboration between NSSE staff and institutional participants for about a 12-month time span. NSSE institutional participants are assigned a Project Service Team upon registration approval to assist them with preparing and administering the NSSE (About NSSE, 2011).

NSSE administrators help colleges and universities better respond to questions about accountability, student learning, conditions that foster success, and retention (NSSE Annual Student Report, 2006). The NSSE results point to areas of the undergraduate experience where colleges and universities are performing well and areas that could be improved. The results provide participating institutions with both national comparison data as well as school specific data that estimate how undergraduate students are spending their time and what they are gaining from college. Institutions can use this data to identify aspects of the undergraduate experience both inside and outside the classroom that can be improved through changes in policies consistent with good practices in undergraduate education. Prospective college students, parents, college counselors, academic advisers, institutional research officers, and other researchers can also access and analyze national data and school specific data to learn about how students at their own institutions are spending their time and what they are gaining from their experiences (About NSSE, 2011). Each November, the Annual Results of NSSE are

published, reporting current research and trends in student engagement (About NSSE, 2011).

**Structure of the Instrument**

The NSSE instrument consists of 28 questions (NSSE survey instrument, 2011). A majority of the questions are in the form of a 4-point Likert-type scale. The NSSE instrument collects information in five categories. It first asks students questions about their participation in dozens of educationally purposeful activities, such as interacting with faculty and peers, the amount of time they spend studying or participating in cocurricular or other activities, including their work on or off the campus (Kuh, 2009). A second set of questions asks students about what the institution requires of them, such as the amount of reading and writing students did during the current school year and the nature of their examinations and coursework. A third set of questions asks students about their perception of the college environment such as the extent of their institutional support and the quality of relationships among faculty and students, which are associated with achievement, satisfaction, and persistence (Astin, 1993; Pascarella & Terenzini, 2005; Tinto, 1993). A copy of the survey may be viewed in Appendix A.

Students' perceptions are directly related to whether they will be retained and satisfied with their experience and are indirectly related to desired outcomes (Kuh, 2009). Direct measures of student satisfaction are obtained from two questions: "How would you evaluate your entire educational experience at this institution?" and "If you could start over again, would you go to the same institution you are now attending?" In the fourth category, students provide information about their background, including age, gender, race/ethnicity, living situation, educational status, and major field. This

information allows NSSE administrators and other researchers to better understand the relationships between student engagement and desired outcomes for different types of students.

Finally, students are asked to estimate their educational and personal growth since starting college in the areas of general knowledge, intellectual skills, written and oral communication skills, vocational preparation, and personal, social, and ethical development (Kuh, 2009). Students' estimates are judgments about the progress or gains they have made (Pace, 1984). Although estimates cannot substitute for direct measures of learning, self-reported student outcomes appear to be generally consistent with other evidence, such as results from achievement tests (Pace, 1985; Pike, 1995).

**NSSE Benchmarks**

In order to provide a common language and framework for discussing and reporting student engagement and institutional performance results, NSSE administrators combined empirical and conceptual analyses to identify a small number of clusters, or benchmarks, of effective educational practice (Kuh, 2009). The NSSE benchmarks are particularly useful when examining student engagement data from an institutional point of view (Kuh, 2003). Benchmarks provide institutions with comprehensive, instructive, and reliable information about the quality of their undergraduate education as well as information about how they compare to their regional and Carnegie Peers. Comparisons are available for individual survey questions as well as for the five NSSE Benchmarks. The five benchmarks include: (a) Level of Academic Challenge, (b) Active and Collaborative Learning, (c) Student-Faculty Interactions, (d) Enriching Educational Experiences, and (e) Supportive Campus Environment (see Table 4). Each benchmark is

theoretical driven and measures specific questions within the survey (Kuh, 2009).

The first benchmark, the Level of Academic Challenge, contains 11 items that focus on how much time students spend preparing for class, reading, and writing, and institutional expectations for performance (NSSE: Measurement scales, component items, and intercorrelation tables, 2009). The second benchmark, Active and Collaborative Learning, contains seven items to measure active and collaborative learning inside and outside the classroom. The third benchmark, Student-Faculty Interaction, has six items related to how often and to what extent students talk with faculty both inside and outside of the classroom on topics related to class, advising, involvement in research, and getting feedback. The fourth benchmark, Enriching Educational Experiences, consists of 12 items focused on interactions with students from diverse backgrounds, use of technology, and engagement in co-curricular activities such as internships, learning communities, and senior projects. The fifth benchmark, Supportive Campus Environment, has six items to measure the student perspective of how the institution helps them to be successful and supports them in non-academic related areas (NSSE: Measurement scales, component items, and intercorrelation tables, 2009). Information concerning item intercorrelations (e.g., Cronbach's Alpha) is summarized in Table 8.

**NSSE Scale and Scalelets**

In addition to NSSE benchmarks, NSSE created other measures, including scales and scalelets, to supplement analyses (NSSE creating scales and scalelets, 2011). One scale used in the study was *overall satisfaction.* Information concerning intercorrelations (e.g., Cronbach's alpha) for overall satisfaction as well as a complete description of the scale is summarized in Table 7. Two scalelets used in this study were *out-of-class*

*interaction with faculty* and *course-related interactions with faculty*. These two items are also independent variables in research questions 1 and 2. To avoid confusion in terminology, *overall satisfaction*, *out-of-class interaction with faculty*, and *course-related interactions with faculty,* will be defined exclusively as variables (versus a scale or a scalelet) from this point until the conclusion of this dissertation.

**Validity and Reliability**

The validity and reliability of NSSE have been examined extensively (Baird, 1976; Kuh et al., 2006; Pace, 1985; Pike, 1995, 2006). In general, the psychometric properties of NSSE are very good, and the individual items and overall instrument have been tweaked based on data collected over the years from focus groups, cognitive testing, and various psychometric analyses (Kuh, 2009). The NSSE instrument was adapted from other instruments used in college student research, including the College Student Experiences Questionnaire (CSEQ; Pace, 1984) and instruments used by the Cooperative Institutional Research Program (CIRP; Astin, 1993). The CSEQ and CIRP instruments are well researched and have been reported to adequately measure the constructs they assert to measure (Kuh, 2001, 2004).

Validity is the degree to which a test measures what it is intended to measure and is often considered the most important property of an assessment tool (NSSE: Validity, 2011). NSSE administrators have spent a considerable amount of time refining the survey items so that they are clearly worded, well defined, and have high content and construct validity (NSSE: Validity, 2011). Cognitive interviews and focus groups have revealed that very few of the survey items posed difficulty for students to interpret as intended (Kuh, 2009). Although some students had trouble understanding such things as the

meaning of a learning community or distinguishing between socializing and relaxing, these problems were consistent across different types of students from different types of institutions. Additionally, items that contribute to the five NSSE benchmarks were not problematic, implying that the benchmarks are also valid measures (NSSE: Validity, 2011).

In a recent study, *Connecting the Dots*, researchers used quantitative and qualitative methods to further investigate the validity of NSSE by discovering whether or not the survey questions worked as intended for different types of students at different types of institutions (Kuh et al., 2006). The researchers found that the NSSE survey worked equally well for students from different racial and ethnic backgrounds as well as for students from different types of institutions. Overall, the pattern of responses from freshmen and senior students suggested that the items measure what they are supposed to measure (Kuh, 2009).

Reliability refers to the consistency or stability of measurement (NSSE: Reliability, 2011). NSSE administrators have also devoted a lot of effort into the reliability of the instrument by performing several psychometric analyses. NSSE analysts have examined the reliability of student responses in two ways: test-retest analysis at the student level and stability analysis at the institutional level (Kuh, 2009). The results of their analyses have determined that the NSSE survey is reliable for the purpose of measuring the constructs it was designed to measure (Kuh, 2002). For instance, in 2002, NSSE administrators conducted a test-retest analysis using 1,226 respondents who completed the same form of the paper survey twice over a period of several months. In 2005, NSSE administrators conducted the study again using 1,536 respondents who completed the

paper or Web survey twice within a period of several months. The results were similar to the earlier study with the reliability coefficients. The test-retest analysis results from the 2002 and 2005 NSSE survey administration may be found in Table 8. These findings suggested little variation in student responses from one testing period to the next (Kuh, 2009).

**Variables**

The variables in this study include the following independent (predictor) variables: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA. The following dependent (outcome) variables in this study include retention and overall satisfaction. A diagram and description of these variables can be seen in Figures 1 and 2.

## Research Questions

The following research questions will be conducted in this study.

RQ1: Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college significantly predict their decision to stay or depart from the institution?

RQ2: Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college significantly predict their overall satisfaction at the institution?

## Data Analysis

Logistic and multiple regression will be the statistical tests used to analyze the data for this investigation. NSSE, GPA, and student retention data (from the first to the second

year) were obtained from the Office of Institutional Research. The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 12.0 (Pallant, 2005). In addition, a correlation matrix and frequencies (descriptives) were run using SPSS to analyze the inter-correlations among all of the variables as well as provide their means and standard deviations. Specific statistical approaches for each research question are addressed in this section.

**Research Question One**

Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college significantly predict their decision to stay or depart from the institution?

H0: The amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA will not significantly predict their decision to stay at or depart from the institution.

Ha: The alternative hypothesis is that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college will significantly predict their decision to stay or depart from the institution. Foundational retention research clearly points to a relationship between student-faculty interactions and retention (Pascarella & Terenzini 1979, 1980; Terenzini & Pascarella, 1976, 1977). Student-faculty interactions that occur inside the classroom (i.e., course-related interactions) are important because the college educational encounters that occur inside the classroom are a central feature of students' educational experience (Tinto, 1997). Researchers have found that experiential learning opportunities inside the classroom promoted greater student involvement or integration

into the life of the institution, which resulted in increased student retention (Astin, 1984; Mallette & Cabrera, 1991; Nora, 1987; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1977). Student-faculty interactions that occur outside the classroom are also important (Kuh & Hu, 2001). Researchers have found that the amount of interactions students have with faculty outside of the classroom was one of the strongest contributing differences between departing and returning students (Terenzini & Pascarella, 1976; 1977).

Many studies have found that student satisfaction is strongly connected to retention (Edwards & Waters, 1982; Freeman et a., 2007; Starr et al., 1972). In other words, students' dissatisfaction or their institution's academic and/or student support services can lead to their decision to stay or depart (Sanders & Burton, 1996). Several researchers have also found that students' GPA can predict their retention (Allen, 1999; Astin, 1993; Feldman, 1993; Tinto, 1993). Both Astin (1996) and Tinto (1975) discuss in their theories the importance of academic achievement as a predictor of student retention. Other studies have examined the relationship between college attrition and academic performance and found that students' freshman GPA was a significant predictor of retention from the first to second year of college (Allen, 1999; Edwards & Waters, 1982; Feldman, 1993).

To test the hypothesis, logistic regression is the chosen statistical test. Logistic regression is used to compute the relationship between a set of independent variables and a discrete dependent variable (Mertler & Vannatta, 2005). Logistic regression is more flexible than multiple regression or discriminate functional analysis because the predictors do not have to be normally distributed, linearly related, or have equal variances

within each group (Mertler & Vannatta, 2005). Also, logistic regression has the capacity to analyze predictor variables (IVs) of all types — continuous, discrete, and dichotomous.

In this study, the independent variables are course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA. Course-related interactions with faculty includes the following three survey questions (questions 1n, 1p, 1q—see Table 5): discussed grades or assignments with an instructor, discussed ideas from your readings or classes with faculty members outside of class, and received prompt written or oral feedback from faculty on your academic performance. Each question is rated on a 4-point Likert-type scale (3-12 total scale score range). Out-of-class interactions with faculty includes the following 3 survey questions (1o, 1s, 7d—see Table 5): talked about career plans with a faculty member or advisor, worked with faculty members on activities other than coursework, and worked on a research project with a faculty member outside of course or program requirements. Each question is rated on a 4-point Likert-type scale (3-12 total scale score range). The other independent variable, GPA, is a continuous variable on a 0.0 to 4.0 scale. The dependent variable, student retention (fall to fall retention) is a dichotomous variable (i.e., students stay or depart).

**Research Question Two**

Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their Grade Point Average (GPA) during their freshman year of college significantly predict their overall satisfaction of the institution?

H0: The amount of course-related interactions and out-of-class interactions with faculty as well as their GPA will not significantly predict their overall satisfaction of the institution.

Ha: The alternative hypothesis is that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college will significantly predict their overall satisfaction of the institution. As frontline representatives of their institutions, faculty have the potential to integrate students into the academic fabric of the institutional community and directly influence their overall satisfaction of the entire institution (Schreiner, 1988).

Students have reported cases of when they have been dissatisfied with the performance or manner of a faculty instructor and how that experience translated into their dissatisfaction of the entire institution (Schreiner, 1988; Stith, 1997). For instance, students reported frustrations of faculty being under-qualified or over-qualified and with faculty coursework being too easy or too challenging (Tinto, 1993). When students' perceived needs, interests, and preferences were mismatched with the existing offerings, such as poor teaching, they experienced a lack of fit or overall dissatisfaction between their needs, interests, and preferences to those of their institution (Tinto, 1993). Furthermore, another study found that friendly student-faculty interaction outside of the classroom was more significant in students' overall satisfaction than formal student-faculty interaction inside the classroom (Endo & Harpel, 1982). A similar study found that students who experienced institutional isolation were lacking meaningful contact with faculty (Tinto, 1993). Students' GPA may also influence their satisfaction (Bean, 1983). For instance, researchers surveyed students to analyze the relationship between GPA, satisfaction, and retention and found that students' GPA were affected by satisfaction contributors (e.g., course satisfaction, student's feeling of isolation, satisfaction with their major, and rating of instructors; Aitken, 1982).

To test the hypothesis, multiple regression will be the statistical test used. Multiple regression is a technique used to predict the value of a single dependent variable from a weighted, linear combination of independent variables (Mertler & Vannatta, 2005). In this study, the independent variables are course-related interactions with faculty, out-of-class interactions with faculty, and GPA. Course-related interactions with faculty includes the following three survey questions (questions 1n, 1p, 1q—see Table 5): discussed grades or assignments with an instructor, discussed ideas from your readings or classes with faculty members outside of class, and received prompt written or oral feedback from faculty on your academic performance. Each question is rated on a 4-point Likert-type scale (3-12 total scale score range). Out-of-class interactions with faculty includes the following 3 survey questions (1o, 1s, 7d—see Table 5): talked about career plans with a faculty member or advisor, worked with faculty members on activities other than coursework, and worked on a research project with a faculty member outside of course or program requirements. Each question is rated on a 4-point Likert-type scale (3-12 total scale score range). The other independent variable, grade point average (GPA), is a continuous variable. The dependent variable, overall satisfaction, is a continuous variable and includes the following two survey questions (questions 13, 14—see Table 6): How would you evaluate your entire educational experience at this institution? If you could start over again, would you go to the same institution you are now attending? Each question is rated on a 4-point Likert-type scale (2-8 total scale score range).

## Summary

College student retention is an increasingly important area of research. This study seeks to understand how student-faculty interactions and GPA predict student retention

and satisfaction as measured by the NSSE instrument. This chapter described the research design and methodology that were undertaken in this study, including the research design, setting and participants, instrument, variables, research questions, and data analysis. Chapter 4 presents the findings.

# CHAPTER FOUR

# FINDINGS

## Introduction

This chapter provides the data cleaning and manipulation procedures, descriptive statistics, assumptions of the test statistics, and findings of the data analysis. The data for this study were provided from the Office of Institutional Research and were converted into a database in SPSS version 12 (Pallant, 2005).

## Data Cleaning and Manipulation

Several steps were taken to clean and prepare the data for the analysis. First, the data were screened to check for errors or values that fell outside the range of possible values for a particular variable. To check for errors, the frequencies of each variable were inspected, including the individual items that make up scales (and scalelets). As mentioned in Chapter four, using the terms scale and scalelet are used here, since they are the terms used by NSSE administrators (NSSE creating scales and scalelets, 2011). However, after this section, for reader clarity they will be referred to as variables.

After the data were analyzed for accuracy, the next step involved a procedure for adding up the scores from the items to create the scale and scalelet variables. One scale that was created was overall satisfaction. This scale included two questions: (a) How would you evaluate your entire education experience at this institution? and (b) If you could start over again, would you go to the same institution you are now attending?

The two scalelets that were created were out-of-class interactions with faculty and course-related interactions with faculty. Out-of-class interactions with faculty included three items: (a) talked about career plans with instructor; (b) worked on activities other

than coursework; and (c) worked on research project outside of course. Course-related interactions with faculty also included three items: (a) discussed grades with an instructor; (b) discussed ideas or readings outside of class; and (c) received prompt written and oral feedback.

**Descriptive Statistics**

Once there were no errors in the data file, the descriptive statistics phase of the analysis was undertaken. Prior to running the test statistics to answer the research questions (e.g., logistic and multiple regression), assumptions of each individual test were analyzed to determine if violations existed in the data. Testing the assumptions involved obtaining descriptive statistics of the variables such as means, standard deviations, range of scores, skewness, and kurtosis of the utilized variables. Several graphs (e.g., histograms, bar graphs, scatterplots, and line graphs) were also created to visually describe and explore the data. Individual descriptions of each research question including specific tests that were run and plots that were made to test the assumptions are described below.

The variables in this study included four independent (e.g., predictor) variables and two dependent (e.g., outcome) variables. The independent variables were the following: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA (cumulative freshman GPA). As discussed in Chapter 2, the review of literature, students' cumulative freshmen GPA (e.g., which includes an average grade of their fall and spring term semesters) was decided to be used in this model rather than only analyzing their fall or spring term GPA. The dependent variables were the

following: retention and overall satisfaction. Student retention was analyzed according to whether or not students returned to the institution the following fall semester.

On a scale ranging from 3-12, with a low score being the best, the students' average amount of course-related interactions with faculty was 6.44 with a standard deviation of 1.82. On a similar ranking scale of 3-12, students' average amount of out-of-class interactions with faculty was 5.48 with a standard deviation of 1.66. On a ranking scale of 3-8, with a low score being the best, students' average overall satisfaction of the institution was 6.23 with a standard deviation of 1.30. The average cumulative GPA for freshmen was a 3.03, ranging from 0.31 to 4.0, with a standard deviation of .713. Students' average retention rate (returned the following fall semester) was 87%.

**Research Question One**

The first question asked, "Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college significantly predict their decision to stay or depart from the institution?"

Ha: The alternative hypothesis was that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college will significantly predict their decision to stay or depart from the institution.

SPSS was used to conduct a logistic regression to answer this question. This question included four (continuous) independent variables: course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA. The (dichotomous) dependent variable was student retention (fall to fall retention). Before

providing the findings of the question, the assumptions of logistic regression and how they were met prior to the analysis are addressed.

**Assumptions of Logistic Regression**

The following are the major assumptions of logistic regression: sample size, multicollinearity, and outliers (Tabachnick & Fidell, 2007).

**Sample size.** Like multiple regression and most other statistical techniques, it is important to consider the size and nature of the sample when using logistic regression (Pallant, 2005). In particular, it is important that the sample is large enough for the amount of predictors that is included the model. For instance, small samples might result in high standard errors. In other words, if there are too few cases in relation to the number of variables, it may be impossible to converge on a solution (Garson, 2011). The sample size of this analysis ($N$ = 288) sufficiently satisfied this assumption.

**Multicollinearity.** Multicollinearity occurs when the independent variables are highly correlated (r = .9 and above; Pallant, 2005). To meet this assumption, the inter-correlations among the predictor variables were analyzed. In this study, none of the independent variables were highly correlated to each other. The correlation matrix revealed that intercorrelations ranged from -.081 to .610 (see Table 9). However, the correlation of .610 between course-related interactions and out-of-class interactions did have an impact on the final results, which will be described below.

**Outliers.** Like multiple regression, it is important to check for the presence of outliers, or cases that are not well explained by the model (Pallant, 2005). Outliers were inspected when analyzing the residuals, or the differences between the obtained and the predicted dependent variable scores. Residual analysis may lead to development of

separate models for different types of cases. For logistic regression, it is usual to use the standardized difference between the observed and expected probabilities. SPSS calls this the standardized residual (ZResid). Cases with values above 2.5 or less than -2.5 are considered outliers (Pallant, 2005). In this study, seven cases had scores less than -2.5 (ranging from -.2872 to -6.776). An examination of the model was re-estimated after running a second logistic regression analysis without the seven cases; however, little difference was found. Since the model was not sensitive to the outliers, the cases remained in the first logistic regression analysis.

**Findings of Research Question One**

Logistic regression was conducted to assess whether or not the four predictor variables: course-related interactions, out-of-class interactions with faculty, students' overall satisfaction, and freshman GPA significantly predicted if students stayed or departed from the institution. The number of students included in the study was 288; however, not all students answered all questions, giving them missing data. Therefore, the sample for this analysis was $n = 231$. The findings of the logistic regression analysis can be divided into three parts: the overall model fit, a classification table, and the summary of model variables (Mertler & Vannatta, 2010).

There are several resulting statistics for the overall model of fit as part of a logistic regression. The -2 Log-Likelihood statistic provides an index of model fit (Mertler & Vannatta, 2010). A perfect model would have a -2 Log-Likelihood of 0. In other words, the lower the value, the better the model fits the data. In this study, the -2 Log-Likelihood was 145.368 (see Table 10). Although logistic regression cannot yield an $R^2$ in the same way as multiple regression, two analogous measures, Cox and Snell $R^2$ and Nagelkerke

$R^2$, indicate how effective the model is at predicting the intended outcome with the added benefit of taking into account sample size. In this study, these two statistics suggested that the variables in this model explained between 14.7% and 27% of the variability (Cox and Snell $R^2 = .147$, Nagelkerke $R^2 = .270$—see Table 10).

In addition, the logistic regression model passed both the Omnibus Tests of Model Coefficients and the Hosmer-Test, which are also goodness of fit tests. For Omnibus Tests of Model Coefficients, a highly significant value ($p < .05$) is the desired result. In this study, the value was highly significant ($p < .0005$). Also the chi-square value ($\chi^2$) was 36.795 with 4 degrees of freedom (see Table 10). The results in the Hosmer and Lemeshow Test also supported the model. This test is the most reliable test of model fit available in SPSS, and is interpreted differently than the Omnibus test since a significance value ($p$) *greater* than .05 is the desired result. In this example, the chi-square value was greater than .05, supporting the model ($\chi^2 = 3.774$, $p =. 877$).

The Classification Table is the second part of the logistic regression analysis. The Classification Table evaluates how accurate the logistic regression model is in predicting the correct category (whether students stay or depart) for each case (Pallant, 2005). However, the Classification Table should not be used exclusively as a goodness-of-fit measure because it ignores actual predicted probabilities using dichotomized predictions using a cut off value of .50 (Garson, 2011). Predictions, correct or not, that are mostly close to the .50 cutoff do not have as good of a fit as a model that predicts scores that cluster either near 1.0 or 0.0. In this study, the model correctly predicted 16.1% of the students who were not retained the following fall semester and 97.5% of those who were retained.

The third part of the logistic regression analysis includes a summary of the model variables. Table 10 presents the outcome of the logistic regression analysis on retention, including information about the following: *B*, *Wald*, *Exp*(β), *df,* and *p*. *B* coefficients are equivalent to the *B* values obtained in a multiple regression analysis (Pallant, 2005). *B* coefficients vary between positive or negative infinity with 0 indicating that the given explanatory variable does not affect the results in terms of coefficients (Garson, 2011). All of the *B* coefficients in this study were above or below 0.

Two statistics used in logistic regression (and not used in multiple regression) are the *Wald* and the *Exp*(β). The *Wald* statistic is an alternative test that is commonly used to test the significance of individual logistic regression coefficients for each independent variable (Garson, 2011). *Wald* statistic is quite conservative (Tabachnick & Fidell, 2007); therefore, a more liberal significance level (i.e., $p < .05$ or $p < .1$) should be applied when interpreting this value. In this study, one variable (out-of-class interactions with faculty) was less than. .05. The other variables ranged from .386 to 18.128 (see Table 10).

Another important statistic to understanding the results of logistic regression is the *Exp*(β), which is the change in odds for every unit increase in a given variable (Garson, 2011). When *Exp*(β) is equal to one, it means that variable does not change the odds (for this study the odds of being retained). The larger *Exp*(β) is from one, the more the odds change in a positive direction. When *Exp*(β) is smaller than one, that variable reduces the odds. In this study, students' overall satisfaction and GPA improved the odds of a student staying at MSU. Whereas, students' course-related interactions and out-of-class interactions with faculty did not improve the odds (see Table 10).

Significance (or *p*) refers to variables that contribute significantly to the predictive

ability of the model (Pallant, 2005). Values less than .05 ($p < .05$) are significant. In this study, GPA ($Exp(\beta) = 3.077$) and Overall Satisfaction ($Exp(\beta) = 2.086$) increased the odds in a positive direction (See Table 4). There were two significant variables: GPA ($p = .000$) and Overall Satisfaction ($p = .000$). Course-related interactions with faculty ($p = .534$) and out-of-class interactions with faculty ($p = .961$) did not contribute significantly to the model (see Table 10).

**Research Question Two**

The second question asked, "Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their Grade Point Average (GPA) during their freshman year of college significantly predict their overall satisfaction of the institution?"

Ha: The alternative hypothesis is that the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college will significantly predict their overall satisfaction of the institution.

SPSS was used to conduct a multiple regression to answer this question.
In this study, the independent variables were the following: course-related interactions with faculty, out-of-class interactions with faculty, and GPA. The dependent variable was overall satisfaction. The assumptions of multiple regression and how they were met will be addressed prior to a discussion of the findings.

**Assumptions of Multiple Regression**

Multiple regression was the statistical test for this question. The following are the major assumptions of multiple regression: sample size, multicollinearity and singularity,

outliers, normality, linearity, homoscedasticity, and independence of residuals (Lomax, 2007; Tabachnick & Fidell, 2007).

**Sample size.** The size of the sample is important in multiple regression, because if a sample is too small the result will not generalize with other samples. Tabachnick and Fidell (2007) provide a formula for calculating sample size requirements, taking into account the number of independent variables: $N > 50 + 8m$ (where m = number of independent variables). In this study there were four independent variables, which made up the three constructs; therefore, 82 cases would be required. The sample size of this study is 288, which exceeds the 82 required cases.

**Multicollinearity and singularity.** Multicollinearity and singularity refer to the relationship among independent variables (Pallant, 2005). Multicollinearity occurs when the independent variables are highly correlated (r =.9 and above). Singularity occurs when one independent variable is a combination of other independent variables (e.g., both subscale scores and the total score of a scale are included). Tolerance and VIF scores were run to meet this assumption. In this study, the tolerance values (.627, .625, and .993) and VIF values (1.594, 1.599, and 1.007) revealed that there were no concerns (see Table 11).

**Outliers.** Multiple regression is very sensitive to outliers (e.g., very high or very low scores; Pallant, 2005). To assess the data regarding this assumption, the data were analyzed to look for extreme scores as a part of the initial data screening process for all the variables, including both the dependent and independent variables in the regression analysis model. Frequencies and scatterplots were run and examined; no outliers were found.

**Normality, linearity, homoscedasticity, independence of residuals.** These assumptions refer to various aspects of the distribution scores and the underlying relationships between the variables (Pallant, 2005). Normality refers to residuals that are normally distributed about the predicted dependent variable scores. Linearity refers to residuals that have a straight-line relationship with predicted dependent variable scores. Homoscedasticity refers to having the same variance of the residuals about dependent variable for all predicted scores. The independence of residuals refers to having a model that is independent of error terms.

In this study, all of these assumptions were analyzed from the residuals scatterplots (e.g., Normal P-Plot of Regression and Residual Scatterplot) that were generated as part of the multiple regression procedure. The Normal P-Plot revealed that the points lied in a reasonably straight line from bottom left to right, suggesting no major deviations from normality. Also, the output from the residuals scatterplot were roughly rectangularly distributed with most of the scores concentrated in the center, also revealing no concerns for any of these assumptions.

**Findings of Research Question Two**

A multiple regression analysis was conducted to assess whether or not the three predictor variables: course-related interactions, out-of-class interactions with faculty, and freshman GPA significantly predicted students' overall satisfaction of the institution. The number of students included in the study was 288, but since not all of the students answered every survey question the sample for the multiple regression was $n = 232$.

There are several different ways of computing multiple regression (i.e., simultaneous/standard, hierarchical, and stepwise) that are used under different

circumstances (Leech, Barrett, & Morgan, 2011). Since the literature did not provide strong cues about which variables would create the best prediction equation, standard multiple regression was chosen as the method over hierarchical and stepwise methods. In standard multiple regression, all independent variables are simultaneously entered into the analysis (Mertler & Vannatta, 2010).

The findings of the multiple regression analysis can be divided into three parts: model summary, ANOVA, and coefficients (Mertler & Vannatta, 2010). The model summary displays three multiple correlation indices—multiple correlation ($R$), squared multiple correlation ($R^2$), and adjusted squared multiple correlation ($R^2_{adj}$)—all of which indicate how well an independent variable(s) predicts the dependent variable. The multiple correlation ($R$) is a Pearson correlation coefficient between the predicted and actual scores of the dependent variable. The squared multiple correlation ($R^2$) represents the degree of variance accounted for by the independent variable(s) and represents effect size in multiple regression. $R$ and $R^2$ typically overestimate their corresponding population values; therefore, $R^2_{adj}$ is calculated to account for such bias. In this study $R=.192$, $R^2=.037$, and $R^2_{adj}=.024$ (see Table 12). Using the $R^2$ value, the model explained 3.7% of the variance in the dependent variable, a weak relationship.

The ANOVA table presents the $F$ test and corresponding level of significance for each step generated (Mertler & Vannatta, 2010). The $F$ test examines the relationship between the dependent and independent variable(s) to see if it is linear and is used to test the significance of R, or the significance of the regression model as a whole (Garson, 2011). A significant relationship ($p < .05$) is linear, indicating that the model significantly predicts the dependent variable. The ANOVA in this study was significant ($F = 2.916$, df

= 3, 228, p = .035 (see Table 12).

The coefficients table reports the following: the unstandardized regression coefficient (*B*), the standardized regression coefficient (beta or β), *p* values, and three correlation indices (Mertler & Vannatta, 2010). The unstandardized regression coefficient (*B*) represents the slope weight for each variable in the model and is used to create the regression equation. *B* values also indicate how much the value of the dependent variable changes when the independent variable increases by 1 and the other independent variables remain the same. A positive *B* value specifies a positive change in the dependent variable when the independent variable increases, whereas a negative *B* value indicates a negative change in the dependent variable when the independent increases. The *B* values in this study were .093 for course-related interactions with faculty, .063 for out-of-class interactions with faculty, and .088 for GPA (see Table 11).

Since it is difficult to interpret the importance of the predictors when the slope values are not standardized, beta values (β) or standardized regression coefficients are often utilized to create a prediction equation for the standardized variables. Beta values are used to compare the different variables and are based upon z-scores with a mean of 0 and standard deviation of 1. In this study, course-related interactions with faculty was the largest variable (β = .130), indicating that it made the strongest unique contribution to the dependent variable (see Table 11).

The *p* indicates the significance of the *B* values, β values, and the subsequent part and partial correlation coefficients. The *p* tells whether each variable is making a statistically significant unique contribution to the equation ($p < .05$). In this example, none of the independent variables made a significant unique contribution to the prediction

of the dependent variable.

In addition, three correlation coefficients are displayed in the coefficients table, which include the following: the zero-order, partial, and part correlation coefficients. The zero-order correlation represents the bivariate correlation between the independent variable and the dependent variable. The partial correlation coefficient indicates the relationship between the independent variable and dependent variable after partialing out all other independent variables. The part correlation coefficient represents the correlation between the dependent variable and independent variables after partialing only one of the independent variables. Squaring each of the part values indicates its unique contribution to the total $R^2$. However, after adding the squared values, the total does not equal the sum of $R^2$ since the part correlation values only represent the unique contribution of each variable, whereas $R^2$ includes both unique and shared variances. Values for each of these may be found in Table 12.

## Summary

Several steps were taken to clean and prepare the data for the analysis. Prior to running the statistical analyses, assumptions of each individual test were analyzed to determine if violations were made. Logistic regression was conducted on the first research question to determine which independent variables (course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA) were predictors of student retention (fall to fall retention). The findings indicated that students' overall satisfaction and GPA were statistically significant in predicting student retention (-2 Log-Likelihood = 145.368, $\chi^2$ =36.795, $p <$. 0005). The model correctly classified 86.6% of the cases. Logistic regression coefficients are presented in Table 10. *Wald*

statistics indicated that overall satisfaction and GPA significantly predicted student retention. Odds ratios for these variables also indicated change in the likelihood of student retention (Overall Satisfaction $Exp(\beta) = 2.086$ and GPA $Exp(\beta) = 3.077$), demonstrating that overall satisfaction and GPA contribute significantly to the predictive ability of the model.

Multiple regression was conducted for the second research question to determine if the independent variables (course-related interactions with faculty, out-of-class interactions with faculty, and GPA) predicted students' overall satisfaction, and which provided the most influence. Although the findings indicated that the model was significant, none of the three predictors significantly predicted students' overall satisfaction ($R = .192$, $R^2 = .037$, $R^2_{adj} = .024$, $F(3, 228) = 2.916$, $p. = .035$). It is likely that, although essential in the study, the effects of course-related interactions and out-of-class interactions were overlapping. Bivariate and partial correlation coefficients between each predictor and the dependent variable are presented in Table 11. A summary of the multiple regression model is presented in Table 12. Chapter 5 provides a discussion of the findings.

# CHAPTER FIVE

# DISCUSSION OF FINDINGS

## Introduction

This quantitative study used data from the institutional records of a comprehensive public university in the Midwest to (a) examine retention and satisfaction questions developed to contribute to the improvement of services at that comprehensive public university in the Midwest and (b) contribute to the knowledge base by providing a broader application to similar educational institutions that also seek to improve retention and satisfaction. This final chapter presents a discussion of the findings. The first section presents a brief overview of the study. The next section presents the findings to the research questions that drove this study and connects them to the relevant literature and theory. The chapter concludes with a discussion the study's limitations and recommendations for further research and practice.

## Overview of Study

According to the U.S. Department of Education, less than 50% of students who enter higher education institutions will obtain a baccalaureate degree (Seidman, 2005). Most students drop out early in their college careers, with more than half leaving before their sophomore year (Consortium for Student Retention Data Exchange, 1999). Student discontent and withdrawal decisions occur when students' perceived needs, interests, and preferences are mismatched with the existing offerings at a college. Poor student-faculty interactions oftentimes lead to student dissatisfaction and withdrawal decisions (Tinto, 1993).

Many studies have found that student satisfaction is strongly connected to retention

(Edwards & Waters, 1982; Freeman et al., 2007; Starr et al., 1972). In other words, when students are dissatisfied with their institution's academic or student support services, they may decide to leave (Sanders & Burton, 1996). Several researchers have also found that students' GPA can predict student retention (Allen, 1999; Astin, 1993; Feldman, 1993; Tinto, 1993) and satisfaction (Aitken, 1982; Bean, 1983; Edwards & Waters, 1982; Wu, 2007). In addition, researchers have discovered students' freshman GPA to be a significant predictor of retention from their first to second year of college (Allen, 1999; Edwards & Waters, 1982; Feldman, 1993).

Despite numerous studies about retention, attrition rates from colleges and universities continue to be high. Given the current national education agenda and goals, these low completion rates are unacceptable. These stagnant college completion rates along with greater external pressures for institutional accountability for student learning have encouraged higher education institutions to better understand factors that influence student success in college (Bok, 2006).

Administrators from the institution under study discovered from their 2009 NSSE data report that their institution scored lower than their regional and Carnegie peers in engagement across each of the five NSSE benchmark areas. Their regional peers included a group of ten 4-year competitor institutions similar to the institution under study based on their ACT score submission. For the purposes of this dissertation, the Student-Faculty Interaction benchmark was analyzed in this study. The mean score of freshman student-faculty interactions for the institution under study was 29.1 compared to the 32.1 for the 4-year competitor institutions (NSSE: Benchmark Comparisons, 2009; see Table 1). This study sought to answer two questions:

RQ1: Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college significantly predict their decision to stay or depart from the institution?

RQ2: Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college significantly predict their overall satisfaction of the institution?

Three theories served as the lens for this study: Astin's Involvement Theory (Astin, 1975, 1984, 1985), Kuh's Engagement Theory (Kuh et al., 2005; Kuh et al., 1991; Kuh et al., 1989), and Tinto's Theory of Student Departure (Tinto, 1975, 1987, 1993). Astin (1975, 1984) developed a retention model to examine the multiple variables that impact student retention. Astin's model focused on ways student involvement can impact student retention. He concluded that students learn by becoming involved, and that the more involved they are the more likely they are to stay in college.

Kuh's Theory of Student Engagement is both student driven and institutional driven. Student driven, meaning that students who invest time and energy into studying as well as other purposeful activities (e.g., student organizations, group study, conversations with faculty) will achieve higher levels of engagement (Kuh et al., 2005; Kuh et al., 1991; Kuh et al., 1989). Institutional driven, meaning that colleges and universities should be purposeful in creating opportunities and initiatives in order to maximize students' levels of engagement (Upcraft et al., 2005). These opportunities should occur both inside and outside the classroom (Carini et al., 2006; Coates, 2005; Pike, 2006; Porter, 2006). It is important for students to take advantage of these

opportunities in order to benefit from the rewards student engagement can offer (Pascarella & Terenzini, 2005).

Tinto's (1975, 1987) theory asserted that stronger levels of students' social and academic integration, coupled with their personal and family aspirations and background characteristics led to greater commitment to the institution and to degree completion. He suggested when students' background traits and initial commitments were combined, they would become predictors of how well students would perform academically and integrate into the community, which would impact their degree completion. Tinto also speculated that certain student background characteristics impacted students' decision to stay or depart more than others.

As discussed in Chapter Three, logistic and multiple regression analyses were the statistical tests used in this study. Logistic regression was used to determine whether or not students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and GPA during their freshman year of college would significantly predict their decision to stay or depart from the institution. Multiple regression was used to determine whether or not the amount of students' course-related interactions and out-of-class interactions with faculty as well as their GPA during their freshman year of college would significantly predict their overall satisfaction of the institution.

## Discussion of Results

As discussed in Chapter Two, the predictor variables in this study have previously been found to impact student retention. Limited studies have also shown their prediction of student satisfaction. Thus, this section begins with a discussion of the findings

generated in this study for each research question and how they relate to the literature. The section concludes with a discussion of the effects of student-faculty interactions and GPA on students' retention and overall satisfaction.

**Research Question One**

This study examined the retention and overall satisfaction of a random sample of 288 of 1,937 freshmen students (½ of whole freshman population; 15% response rate) who were emailed to participate in the 2009 NSSE survey. In examining whether or not course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA were predictors of student retention (fall to fall retention), the findings indicated that overall satisfaction and GPA were statistically significant. However, course-related interactions and out-of-class interactions with faculty were not significant in predicting student retention.

The current findings are in line with the prior research, which has attributed students' freshmen GPA as a predictor of their retention (Allen, 1999; Astin, 1993; Feldman, 1993; Stith, 1994; Tinto, 1993). Studies by Allen (1999), Astin (1996), Feldman (1993), Stith (1994), and Tinto (1975) have similarly found the importance of academic achievement (GPA) as a significant predictor of student retention during the freshman year.

The current findings are also consistent with the limited amount of prior research attributing students' overall satisfaction as a predictor of their retention (Edwards & Walters, 1982). Edwards and Walters (1982) examined the relationships between college attrition and academic performance, satisfaction with courses, and students overall satisfaction. After a two-year follow-up, their analysis revealed that students' freshmen

GPA and overall satisfaction of the institution were significant predictors of retention (Edwards & Walters, 1982).

However, an unanticipated finding of the current study was that the amount of course-related interactions and out-of-class interactions with faculty for this sample did not significantly predict students' retention. The finding does not align with the prior research, which has found that course-related interactions with faculty and out-of-class interactions with faculty attributed to student retention (Schreiner, 1988; Toy, 1985).

Authors of foundational studies have found student-faculty relationships to be one of the strongest contributors of student retention (Pascarella & Terenzini 1979, 1980; Terenzini & Pascarella, 1976, 1977; Wilson et al., 1974). Thus, it is unclear why the amount of student-faculty interactions were not predictors of retention in this current study. One explanation may be that this institution is more of a "commuter institution" where many students work part-time or full-time and do not live on campus. Therefore, these students may not expect or see the need for student-faculty interactions.

The literature was also used as a tool to develop additional explanations. Although researchers have discussed the importance of student-faculty relationships, other researchers have discussed the importance of student-student relationships (e.g., collaborative and shared learning cohorts) and campus involvement to develop a network of support from a small supportive community of peers (Pascarella & Terenzini, 2005; Tinto, 1997). Learning communities, for example, allow opportunities for students to synthesize what they learn in different courses and to connect in- and out-of-classroom experiences. Learning communities foster student-faculty relationships but also encourage students to feel connected to their peers and the broader social communities of

the university. Communities of classroom-based peers have been found to support students by encouraging them to attend class regularly and participate in learning both inside and outside the classroom. In this manner, collaborative learning settings have enabled students to bridge the academic-social divide that typically confronts students in these settings. In effect, learning communities served as the academic and social crossroads out of which "seamless" educational activities are constructed (Tinto, 1997).

In this study, 14% of the students participated in a learning community, 30% spent five or more hours a week in co-curricular activities, and 82% positively rated their relationships with other students (Executive Summary for Spring Administration, 2009). Perhaps these high ratings of peer-to-peer student involvement met their need of feeling valued, making student-faculty interactions less important to them.

A recent study by Kuh and Huh (2001) examined the effects of student-faculty interaction on a range of self-reported learning and personal development gains associated with attending college. Their findings showed that the frequency of student-faculty interaction increased from first year through the senior year, which had substantial positive effects on students' efforts in other educationally purposeful activities. Perhaps the freshmen in the current study will also have more student-faculty interactions as their college experience progresses, which could have more of an impact on their retention and overall satisfaction during their junior and senior years than on their freshman year.

The majority of the students in this sample are Millennials (born between 1977 and 1998). Millennials, according to DeBard (2004), have sheltered lives. In other words, one way that authority figures have displayed how special Millennial children are is by

sheltering them from harm's way. Also, the parents of Millennials from the Baby Boomer generation have imposed high expectations upon the Millennials to behave well and excel academically (Howe & Strauss, 2000). This has resulted in a need for and an expectation of structure for Millennial students. Parents of Millennials have organized their children's lives to give direction, which has been supported by daycare options, after-school programs, recreational centers, music and dance lessons, and arts programs that have come to occupy an increasing amount of what was formerly free play time for this nation's youth (Howe & Strauss, 2000). Thus, Millennials have come both to trust authority and to depend on authority. According to Schneider and Stevenson (1999), the Millennial generation is ambitious but "directionless," having no clear life plan. Moreover, Baxter Magolda's (2001) theory of self-authorship includes four phases in becoming the author of one's life. Although the four phases are non-linear, freshmen are typically in the Random Exploration phase where their decision-making lacks direction and self-reflection. Thus, given the fact that the students in this study were freshmen, they may have felt directionless due to their level of cognitive development. Also, as Millenials, they might have felt directionless due to the amount of freedom that faculty ask of them, which probably contrasts from their more directive parents. In this study, it is unknown what number of students, if any, felt "directionless", but perhaps those who did placed less importance on student-faculty interactions.

Also, perhaps since many undergraduate students during their first two years of college enroll in general education classes, the amount of student-faculty actions were limited due to larger class sizes. Whereas, upper-division students are more likely to be established in a major field of study, are more confident about their thinking and

knowledge base, and find it easier and more stimulating to converse about substantive topics with faculty members (Kuh & Huh, 2001). Faculty may make themselves more accessible to juniors and seniors, as they are more comfortable with and find it more rewarding to work on an individual basis with more intellectually mature students in the context of their discipline (Kuh & Huh, 2001). These could be additional reasons why the amount of student-faculty interactions did not predict students' retention in this study.

Given that this research question analyzed student retention, it is also important to know how the institution did at retaining the sample of students in this current study. The fall 2009 retention rate of the current study was 87% (fall 2008-fall 2009), which was higher than the freshman retention rate as a whole (75.5%). Even though this retention rate was rather high, there could be additional factors at stake that should be considered. Tinto's (1975, 1987) longitudinal research asserted that stronger levels of students' social and academic integration, coupled with their personal and family aspirations and background characteristics led to greater commitment to the institution and to degree completion. In other words, students come to college with certain background characteristics and initial commitments that influence how well they will "fit" into the academic and social environment of the institution.

For example, students from diverse backgrounds (e.g., a devout Catholic student attending a secular college; a studious person who ends up in a party dorm) may have trouble connecting at a college or university when their values, goals, and attitudes do not align with those of the college (Tinto, 1987). This can lead to isolation, adjustment issues, difficulty, or incongruence with the institution, which influences students' decisions to leave an institution more than students who did not experience those dynamics (Tinto,

1975, 1987). Universities are often blamed for not retaining 100% of their students. However, according to Tinto's model, not every university is the right fit for every student; therefore, a 100% retention rate is unrealistic.

In addition, non-academic factors might have significantly influenced the retention rate in this current study, such as the following: the campus climate (e.g., environment, culture, needs of students, and student satisfaction; Upcraft & Schuh, 1996), faculty and administrators' commitment to students (Cabrera et al., 1993), financial aid awards (DesJardins et al., 2006), and students' ability to navigate the institution's academic and social systems (Padilla, 1999). Thus, there are many environmental factors that occur out of the classroom that could either encourage or hinder the personal development of students, influencing retention (Kuh et al, 1991).

**Research Question Two**

While it was predicted that course-related interactions with faculty, out-of-class interactions with faculty, and GPA would predict students' overall satisfaction, the findings indicated that none of the three predictors were significant. These findings are in contrast to previous literature, which has found each of these predictors to be related to students' satisfaction.

Again, it is unclear why student-faculty interactions did not predict students' overall satisfaction in this study. In general, the literature has found that the more contact between students and faculty both inside and outside the classroom, the greater their student development and satisfaction (Astin, 1993). However, recent studies (Kuh, Hu, & Vesper, 2000; Kuh, 2001; Pascarella, Whitt, & Nora, 1996) have reported different results. For example, in a study classifying students according to their patterns of

engagement in a variety of in-class and out-of-class college activities, Kuh et al. (2000) found that one group of students (Art majors) reported more frequent contact with faculty but fewer benefits from their college experience than other groups of students who reported less frequent contact. The literature has also underscored the quality of academic programs (Kuh, 2001) and the quality of instruction (Pascarella et al., 1996). In this current study, the question asked whether the 'amount' of students' course-related interactions and out-of-class interactions significantly predicted overall satisfaction. Perhaps, the difference in this study with regard to course-related interactions and out-of-class interactions not predicting overall satisfaction is more a question of the quality of those interactions than the quantity. Therefore, the better question might be whether or not the 'quality' of these interactions significantly predicted students' overall satisfaction (and retention). More information about the quality of student-faculty interactions will be discussed in the recommendations for further research and practice section.

Another unanticipated finding in this study was that students' GPA did not significantly predict students' overall satisfaction. Only a limited number of studies have found freshman GPA to be a predictor of students' satisfaction, (Aitken, 1982; Feldman, 1993). Therefore, more studies at various institution types are needed to determine if freshman GPA significantly predicts students' overall satisfaction with their university.

Given that this question analyzed students' overall satisfaction, it is important to know what students' overall satisfaction was in this current study. The majority of students within the sample were more dissatisfied than satisfied with their overall experience. A majority of them evaluated their entire educational experience as "fair" (on a scale of excellent, good, fair, or poor) and if they could start over again, a majority of

them stated they would "probably not" be attending the institution they are now attending (on a scale of definitely yes, probably yes, probably no, and definitely no). It would be interesting to know what other factors contributed to their dissatisfaction. A majority of these students within the sample were of Millennial generation (born between 1977 and 1998). One characteristic of the Millennials is being special (DeBard, 2004). Millennials have been made to feel important by those, including colleges and universities, who would sell them a product or service (Howe & Strauss, 2003). As children, they were given trophies for participation rather than victory. These students wish to feel special by those who provide them services and have high expectations for those services (DeBard, 2004). Thus, perhaps desiring to be perceived as special, and not having those expectations met were contributors of students' dissatisfaction in this study.

## Limitations of the Study

This study has some limitations that need to be considered when interpreting the findings. First, an important limitation of this study is that the data were drawn from one institution, which limits the ability to generalize the findings. Thus, the experiences of students at this institution may vary significantly from other institutions. For instance, students at private institutions might have significantly different experiences from this comprehensive public institution. It should also be noted that the experiences of this freshman sample of students may be different from past or future cohorts of freshman students given the changes of programming and services that the institution implements annually. Therefore, caution is warranted if attempting to generalize these results to other institutions unless they have similar characteristics.

Another limitation of this study is that the NSSE instrument is relatively short and does not measure all the relevant aspects of engagement. In addition, this study used selected items from the survey; if different items of engagement were included and analyzed, the findings might be different. Moreover, given the quantitative nature of this study, students' voices were limited.

A third limitation of this study is that despite the large sample size of freshman students who completed the survey ($N = 288$), this was only a 15% response rate of the entire freshman population. In addition, the majority of the students (e.g., 86.5%) of the sample were White. Although this sample closely compares to the ethnic and background characteristics of the entire 2009 freshman student population, its lack of diversity limits its generalizability.

Finally, approximately 200 freshmen students who were enrolled during the fall semester left the institution prior to spring semester, the semester the NSSE survey was administered. Also, the number of students who were considering transferring to another institution or dropping out of college might not have been motivated to complete the survey. Thus, the extent to which the prediction of retention and overall satisfaction is biased by this sample is unknown.

## Recommendations for Further Research

This study contributes to the growing body of literature by providing information about variables that predict or do not predict students' retention and overall satisfaction at a comprehensive public university located in the Midwest. The findings of this study suggest that the variability in student-faculty interactions at this institution did not affect students' retention or overall satisfaction. In other words, the students who came back the

following fall semester did not report significantly more student-faculty interactions than students who left. In addition, students' GPA did not affect students' overall satisfaction. However, students' overall satisfaction and GPA did significantly contribute to students' retention. Given the findings of this study, recommendations for further research are discussed in this section.

This study raises a number of intriguing questions. For instance, given that the literature has pointed to a positive correlation between student-faculty interactions and retention (Pascarella & Terenzini 1979, 1980; Terenzini & Pascarella, 1976, 1977; Wilson et al., 1974) as well as satisfaction (Endo & Harpel, 1982; Nordquist, 1993; Schreiner, 1988; Stith, 1994; Tinto, 1993), why then, did student-faculty interactions not contribute to students' retention or satisfaction at this institution? The NSSE survey asks questions about the amount or quantity of student-faculty interactions students have with their faculty members. But perhaps, the better question to analyze was the *quality* of their relationships with faculty. The NSSE student-faculty questions analyzed in this current study asked students how often they experienced student-faculty interactions. However, the NSSE survey also asks students to rate the quality of their relationships with people at their institution, including relationships with faculty. During the preliminary analysis, rating the quality of students' relationships with faculty was not selected to be a part of this study, since only one question in the survey rates the quality of student-faculty relationships—therefore; a limited amount of data is gathered when students rank their relationships with faculty (how available/unavailable, helpful/unhelpful, or sympathetic/unsympathetic their faculty were).

Another reason why the quality of students' relationships with faculty question was

not selected is because it did not fall into either the *course-related interactions* or *out-of-class interactions with faculty* NSSE scalelets. However, in future studies (using multivariate models), researchers may also want to select the *quality campus relationships* scale, since that scale includes three questions analyzing students' relationships with other students, faculty, and administrative personnel and offices (NSSE: Measurement scales, component items, and intercorrelation tables, 2009). Future studies should also consider including a qualitative portion by asking students to elaborate about their student-faculty relationships. This would more fully explain student-faculty relationships by hearing the voices of students.

As discussed in the limitations section, the lack of diversity within the sample (86.5% White) limits the generalizability of this study. As a salient factor, research has found that race can contribute to the dynamics of student-faculty relationships (Guadalupe & Darnell, 2001). For instance, White faculty might expect minority students to have knowledge concerning racial issues and race relations in America (Burrell, 1980). Minority students are often labeled with race-related assumptions about their academic ability, ambition, and high school preparation—all of which may hinder the development of their student-faculty relationships (Kraft, 1991). Minority students may also experience limited accessibility to faculty (Turner, 1994). Nonetheless, some minority students do enjoy positive relationships with university faculty and staff and having them as role models has been reported to be strongly associated with high grades for students in several racial groups: African American, Mexican American, Native American, and White students (Mayo, Murguia, & Padilla, 1995). Thus, additional studies about how race influences student-faculty interactions as well as student retention and overall

satisfaction are needed.

Students' overall satisfaction significantly predicted the retention of students in this study; however, much remains unknown about student satisfaction. The NSSE survey asks students two questions about how they would rank their overall satisfaction at their institution. These questions present data about how satisfied or unsatisfied students are with their college experience but do not provide information why. Thus, this remains to be a grey area that needs further exploration. A qualitative study asking students to elaborate about what contributes to their satisfaction or dissatisfaction would address this gap. A quantitative option could be to ask students to either check or rank order areas the literature has pointed to as predictors of satisfaction, such as GPA, how to navigate academic services, financial aid package, quantity and quality of student-faculty interactions, satisfaction of courses, and quality of academic advising. This information could prioritize areas of student satisfaction, which would assist administrators as they make decisions and develop action plans.

Contrary to the literature, this study found that the amount of student-faculty interactions and GPA did not contribute to their overall satisfaction. Although the amount of student-faculty interactions were not predictors, perhaps the quality of their student-faculty relationships or other academic areas found within the NSSE survey, such as students' level of academic challenge or how actively involved they were in their learning affected their satisfaction. Or perhaps the social environment influenced students' overall satisfaction in this current study. As the literature has stated, there are many environmental factors that occur out of the classroom that can either encourage or hinder the personal development of students (Kuh et al., 1991). Perhaps the campus

culture, the level of friendliness of faculty or staff, the amount of student involvement, or students' awareness of how to navigate academic services affected students' overall satisfaction. Or perhaps the amount of financial aid awarded to students affected their satisfaction. For instance, studies have found a direct effect on student satisfaction in regards to the financial support they received (Cabrera et al., 1992).

Therefore, future studies may want to consider analyzing questions found in the NSSE survey that pertain the level of support within the campus environment. These questions gather data about support from both the academic and social environment, including areas to help students cope. In addition, they gather data from students about their relationships with other students, faculty, and administrative personnel. If some or all of these are contributors of students' overall satisfaction, student affairs professionals could have a significant impact to create changes. Given that student satisfaction contributed to students' decision to remain or depart from the institution, administrators at this campus and similar campuses should encourage and support additional quantitative and qualitative research in this area to learn more about what satisfies students, which could assist them in developing strategies to improve student satisfaction and retention.

This study also found that students' freshman GPA was a predictor of their retention, but was a predictor of their overall satisfaction. Therefore, more studies are needed analyzing whether or not students' freshman GPA is a predictor of their satisfaction. Qualitative studies analyzing the needs of academically under-prepared students could also help create strategies and initiatives to improve their retention and overall satisfaction.

## Recommendations for Further Practice

Researchers have found that both frequent and meaningful interactions between students and their instructors leads to substantial positive effects on students' efforts in their learning and personal development, which are important contributors of student satisfaction (Kuh & Hu, 2001). Thus, in a perfect world, both the quantity and the quality of student-faculty interactions are ideal. However, given the multiple responsibilities faculty must perform (e.g., balancing teaching, research, and service), connecting with students as much as they would like to is probably challenging. However, if this is truly an important priority for colleges and universities, then more time, resources, and support should be allocated to faculty from their college deans and administrators for student-faculty interactions. Administrators should also consider the need for quality academic advising since researchers have discovered that effective academic advising is a powerful influence in retaining and satisfying students on college campuses (Beal & Noel, 1980; Belcheir, 1999; Crockett, 1985; Noel, 1985). Therefore, administrators at this campus and similar institutions should more closely examine the advising needs of students and its relationship to attrition.

This institution provides many services to assist students academically. There is a tutoring center on campus where all students can find a tutor for any subject at no cost. There are advising services for students who are not meeting satisfactory academic progress (2.0 GPA or above). There is also a contract program for students who have not met the admission criteria for the institution (did not meet the required ACT score and/or were not in the top 50% of their high school class), where students are required to meet with an academic advisor on an ongoing basis. Federal TRIO programs also exist at this

institution, which are Federal outreach and student services programs designed to identify and provide services for individuals from disadvantaged backgrounds. TRIO includes programs targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress from middle school to postbaccalaureate programs. Programs such as these, have helped all students, including academically under-prepared students feel more confident about their academic abilities. In addition, these programs have provided support for students who are lacking parental guidance or who are unaware of how to navigate the academic system (Lohfink & Paulsen, 2005). Since GPA was a predictor of retention in this current study, academic services should continue to be supported and financially funded at this institution.

Although students must experience academic success to remain in college, it is also vital that they become involved and engaged in other areas of college life. Researchers have found that students that are less involved in campus activities, organizations, and extracurricular activities, are at a higher risk of dropping out than those who are involved (Tinto, 1993). Consequently, it is imperative for administrators at this institution to support services that provide opportunities that facilitate student-student relationships.

Most importantly, a shared commitment is needed from all members an institution in order to retain and satisfy students (Noel, 1985). Therefore, academic affairs and student affairs professionals at this institution and similar institutions must bridge together to find solutions that will inform theory, policy, and effective professional practice with the goal of transforming higher education in ways to make opportunities more satisfying, achievable, and equitable for all students.

## Conclusion

Although numerous studies have been conducted about the freshman year experience and on retention, attrition rates from colleges and universities continue to be high. Retention rates for public institutions (39.6%) is often found to be much lower compared to private colleges (56.1%; ACT, 2006). Given the current national education agenda and goals, these low completion rates are unacceptable. These stagnant college completion rates along with greater external pressures for institutional accountability for student learning have encouraged higher education institutions to better understand the factors that influence student success in college (Bok, 2006). In addition, studies have found that student satisfaction is strongly connected to retention (Edwards & Waters, 1982; Freeman et al., 2007; Starr, Betz, & Menne, 1972). However, considerably less research exists pertaining to student satisfaction in higher education (Douglass et al., 2008; Elliot & Healy, 2001; Kane et al., 2008; Sanders & Burton, 1996).

This quantitative study sought to explore questions developed to help improve the quality of retention and satisfaction services at a comprehensive public university in the Midwest as well as to contribute to the knowledge base by providing a broader application to similar institutions seeking to improve these services. Logistic regression was conducted on the first research question to determine which independent variables (course-related interactions with faculty, out-of-class interactions with faculty, overall satisfaction, and GPA) were predictors of student retention (fall to fall retention). The findings indicated that students' overall satisfaction and GPA were statistically significant in predicting student retention. However, course-related and out-of-class student-faculty interactions were not significant in predicting retention.

Multiple regression was conducted for the second research question to determine if the independent variables (course-related interactions with faculty, out-of-class interactions with faculty, and GPA) predicted students' overall satisfaction. The findings indicated that none of the three predictors significantly predicted students' overall satisfaction. While there are some important limitations, this study does contribute to the growing body of research about ways to improve the retention and overall satisfaction of freshmen students, particularly students at this institution and similar institutions. In addition, recommendations for further research and practice were discussed.

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Table 1

*2009 Benchmark Comparison Scores*

| Benchmark | Institution under study | Minnesota Peers | Carnegie Class Peers | 4-Year Competitors Peers |
|---|---|---|---|---|
| 1. Level of Academic Challenge (LAC) | 50.4 | 52.5 | 53.1 | 52.9 |
| 2. Active and Collaborative Learning (ACL) | 38.3 | 43.8 | 43.4 | 42.3 |
| 3. Student-Faculty Interaction (SFI) | 29.1 | 32.9 | 35.3 | 32.1 |
| 4. Enriching Educational Experiences (EEE) | 24.1 | 24.2 | 27.1 | 26.3 |
| 5. Supportive Campus Environment (SCE) | 58.2 | 60.9 | 61.7 | 61.2 |

*Note.* All items quoted from NSSE 2009 Selected Comparison Groups, College Website Undisclosed. This table includes the mean scores of each benchmark for the freshman sample of this institution under study in comparison to their peers.

Table 2

*Ethnic Characteristics of NSSE Sample and Whole Freshman Population*

| Ethnic Characteristics | NSSE Sample (n=288) | Entire Freshman Population of Institution (2,215 students) |
|---|---|---|
| White | 86.5% | 85.5% |
| Black or African American | 4.5% | 4.3% |
| Asian, Asian American, or Pacific Islander | 4.2% | 3% |
| Mexican, Mexican American, Hispanic, or Latino | 2.1% | 1.4% |
| Unknown | 2.1% | 4.2% |
| American Indian or other Native American | .3% | .6% |
| Foreign or International | .3% | 1% |

*Note*. All items quoted from *Office of Institutional Research new undergraduate student statistics profile,* (2009).

Table 3

*Other Characteristics of NSSE Sample and Whole Freshman Population*

| Other Characteristics | NSSE Sample (n=288) | Entire Freshman Population of Institution (2,215 students) |
|---|---|---|
| Female | 64% | 52.9% |
| Male | 36% | 47.1% |
| Full-time | 98.6% | 82.7% |
| Part-time | 2% | 17.3% |

*Note*. All items quoted from *Office of Institutional Research new undergraduate student statistics profile,* (2009).

Table 4

*NSSE Benchmarks*

| Benchmark | Description | Number of Items | Cronbach's alpha |
|---|---|---|---|
| Level of Academic Challenge | Measures time spent preparing for class, reading and writing, and expectations for performance. | 11 | FY .73<br>SY .76 |
| Active and Collaborative Learning | Measures extent of class participation, collaborative work with others, tutoring, and involvement in community projects | 7 | FY .66<br>SY .66 |
| Student-Faculty Interaction | Measures the quality and quantity of interaction with faculty including getting feedback, working with faculty outside of class, and research. | 6 | FY .71<br>SY .74 |
| Enriching Educational Experiences | Measures extent of interaction with students from diverse social, ethnic, racial, and political backgrounds; utilization of technology; involvement in internships, community service, and study abroad; and co-curricular activities | 12 | FY .59<br>SY .66 |
| Supportive Campus Environment | Measures the extent to which students perceive that the campus environment helps them succeed academically and socially. | 6 | FY .79<br>SY .80 |

*Note.* FY: First Year Students; SY: Senior Year Students

All items quoted from *National Survey of Student Engagement measurement scales, component items, and intercorrelation tables,* 2009.

Table 5

*NSSE Benchmark Items*

| Benchmark | Item | Question |
|---|---|---|
| Level of Academic Challenge | 4a | Number of assigned textbooks, books, or book-length packs of course materials |
| | 4c | Number of written papers or reports of 20 pages or more |
| | 4d | Number of written papers or reports of between 5 and 19 pages |
| | 4e | Number of written papers or reports of fewer than 5 pages |
| | 2b | Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components |
| | 2c | Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships |
| | 2d | Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions |
| | 2e | Applying theories or concepts to practical problems or in new situations |
| | 1r | Worked harder than you thought you could to meet an instructor's standards or expectations |
| | 9a | Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities) |
| | 10a | Spending significant amounts of time studying and on academic work |

| | | |
|---|---|---|
| Active and Collaborative Learning | 1a | Asked questions in class or contributed to class discussions |
| | 1b | Made a class presentation |
| | 1g | Worked with other students on projects during class |
| | 1h | Worked with classmates outside of class to prepare class assignments |
| | 1j | Tutored or taught other students (paid or voluntary) |
| | 1k | Participated in a community-based project (e.g., service learning) as part of a regular course |
| | 1t | Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.) |
| **Student-Faculty Interaction** | **1n** | **Discussed grades or assignments with an instructor** |
| | **1o** | **Talked about career plans with a faculty member or advisor** |
| | **1p** | **Discussed ideas from your readings or classes with faculty members outside of class** |
| | **1q** | **Received prompt written or oral feedback from faculty on your academic performance** |
| | **1s** | **Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)** |
| | **7d** | **Worked on a research project with a faculty member outside of course or program requirements** |
| Enriching Educational Experiences | 1v | Had serious conversations with students who are very different from you in terms of religious beliefs, political opinions, or personal values |
| | 1u | Had serious conversations with students of a different race or ethnicity |

| | | |
|---|---|---|
| | 10a | Encouraging contact among students from different economic, social, and ethnic backgrounds |
| | 9d | Participating in co-curricular activities |
| | 11 | Used an electronic medium for an assignment |
| | 7a | Practicum, internship, field experience, or co-op experience |
| | 7b | Community service or volunteer work |
| | 7c | Learning community |
| | 7e | Foreign language |
| | 7f | Study abroad |
| | 7g | Independent study |
| | 7h | Culminating senior project |
| Supportive Campus Environment | 8a | Relationships with other students |
| | 8b | Relationships with faculty members |
| | 8c | Relationships with administrative personnel |
| | 10e | Providing social support to succeed |
| | 10b | Providing academic support to succeed |
| | 10d | Helping you cope with your non-academic responsibilities |

*Note.* All items quoted from *National Survey of Student Engagement measurement scales, component items, and intercorrelation tables,* 2009. Only the bolded items found under the Student Faculty Benchmark were used in the current study.

Table 6

*NSSE Scale*

| Scale | Description | Number of Items | Cronbach's Alpha |
|---|---|---|---|
| Overall Satisfaction | Measures the quality of students' entire educational experience at that institution as well as the probability of them going to the same institution if they could start over again. | 2 | FY .73<br>SY .71 |

*Note.* FY: First Year Students; SY: Senior Year Students

Overall Satisfaction is one of several NSSE scales, but it is the only one included in this table since the other scales were not used in the current study. All items quoted from *National Survey of Student Engagement measurement scales, component items, and intercorrelation tables,* 2009.

Table 7

*NSSE Scale Items*

| Scale | Item | Question<br>*both items are included in this study |
|---|---|---|
| Overall Satisfaction | 13<br>14 | How would you evaluate your entire education experience at this institution?<br>If you could start over again, would you go to the same institution you are now attending? |

*Note.* All items quoted from *National Survey of Student Engagement measurement scales, component items, and intercorrelation tables,* 2009. Overall Satisfaction is one of several other scales used by NSSE. The others were not included in this table since they were not used in the current study.

Table 8

*NSSE Test-Retest Correlations*

| NSSE Benchmarks | 2002 | 2005 |
|---|---|---|
| Level of Academic Challenge | 0.74 | 0.69 |
| Active and Collaborative Learning | 0.74 | 0.72 |
| Student-Faculty Interaction | 0.75 | 0.70 |
| Enriching Educational Experiences | 0.74 | 0.74 |
| Supportive Campus Environment | 0.78 | 0.70 |
| Sample Size | *n* = 1,226 | *n* = 1,536 |

*Note.* All items quoted from *NSSE 2009 Psychometric Properties*, 2009. This table shows the test-retest analysis results from the 2002 and 2005 NSSE survey administration. In 2002, NSSE administrators conducted a test-retest analysis using 1,226 respondents who completed the same form of the paper survey twice over a period of several months. In 2005, they conducted the study again using 1,536 respondents who completed the paper or Web survey twice within a period of several months. These findings suggest little variation in student responses from one testing period to the next.

Table 9

*Means, Standard Deviations, and Intercorrelations*

| Variable | *M* | SD | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1. Course-Related Interactions | 6.44 | 1.82 | 1 | .610** | .176** | -.058 |
| 2. Out-of-Class Interactions | 5.48 | 1.66 | .610** | 1 | .155* | -.081 |
| 3. Overall Satisfaction | 6.23 | 1.30 | .176** | .155* | 1 | .034 |
| 4. GPA (Fall and Spring Cumulative) | 3.03 | .713 | -.058 | -.081 | .034 | 1 |

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

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

Table 10

Logistic Regression Model Summary

| | *B* | *Wald* | *df* | *p* | *Exp*(β) |
|---|---|---|---|---|---|
| Course-Related Interactions | .096 | .386 | 1 | .534 | 1.101 |
| Out-of-Class Interactions | -.008 | .002 | 1 | .961 | .992 |
| Overall Satisfaction | .735 | 18.128 | 1 | .000*** | 2.086 |
| GPA (Fall and Spring Cumulative) | 1.124 | 13.723 | 1 | .000*** | 3.077 |

*Note*. This table indicates how well each independent variable predicted student retention, the dependent variable.

***Indicates significance at p <.001

-2 Log Likelihood = 145.368, Cox & Snell $R^2$ = .147, Nagelkerke $R^2$ = .270,

$\chi^2$ =36.795

Table 11

*Multiple Regression Coefficients*

| | *B* | B | *p* | Bivariate *r* | Partial *r* | Part *r* | Tolerance | VIF |
|---|---|---|---|---|---|---|---|---|
| Course-Related Interactions | .093 | .130 | .115 | .176 | .104 | .103 | .627 | 1.594 |
| Out-of-Class Interactions | .063 | .080 | .331 | .155 | .064 | .063 | .625 | 1.599 |
| GPA (Cum Fall & Spring) | .088 | .048 | .459 | .034 | .049 | .048 | .993 | 1.007 |

*Note*. This table indicates how well each independent variable predicted overall satisfaction, the dependent variable. None of the variables were significant.

Table 12

*Multiple Regression Model Summary*

| Model | $R$ | $R^2$ | $R^2_{adj}$ | $F_{chg}$ | $p$ | $df_1$ | $df_2$ |
|---|---|---|---|---|---|---|---|
| 1 | .192 | .037 | .024 | 2.916 | .035* | 3 | 228 |

*Note*. * Indicates significance at $p$ is < .05.

Variables of Current Study: Research Question One

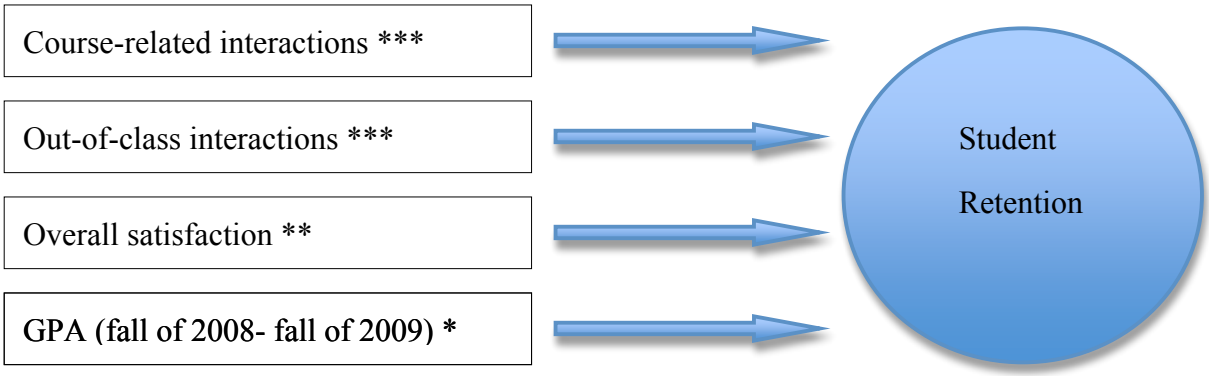


*Figure 1.* Research question one asks, "Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their overall satisfaction and Grade Point Average (GPA) during their freshman year of college significantly predict their decision to stay or depart from the institution?" The independent (predictor) variables are course-related interactions, out-of-class interactions with faculty, overall satisfaction, and GPA. The asterisk indicates the number of items or questions that make up each of these variables or scales. The arrows indicate that each of these independent variables are hypothesized to be predictors of student retention, the dependent (outcome) variable.

Variable of Current Study: Research Question 2

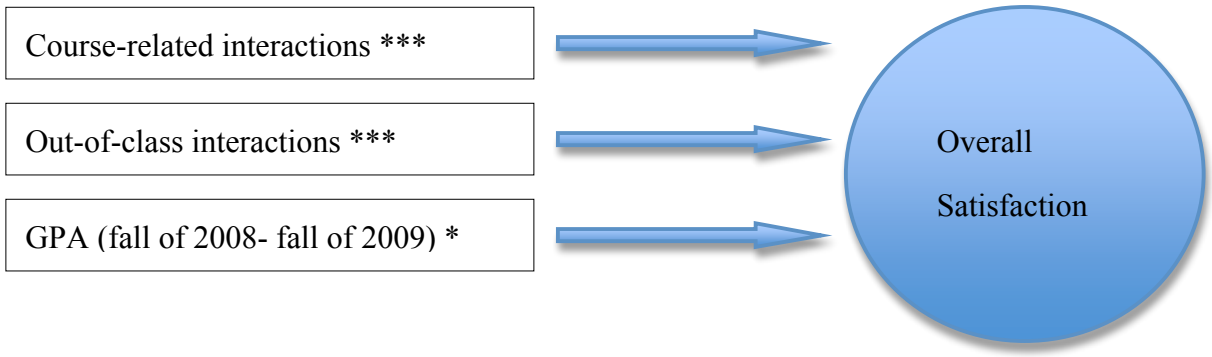


*Figure 2.* Research question two asks, "Did the amount of students' course-related interactions and out-of-class interactions with faculty as well as their Grade Point Average (GPA) during their freshman year of college significantly predict their overall satisfaction of the institution?" The independent (predictor) variables are course-related interactions, out-of-class interactions with faculty, and GPA. The asterisk indicates the number of items or questions that make up each of these variables (or scales). The arrows indicate that each of these independent variables are hypothesized to be predictors of overall satisfaction, the dependent (outcome) variable.

Appendix A

National Survey of Student Engagement 2009—The College Student Report

# National Survey of Student Engagement 2009

**The College Student Report**

**1 In your experience at your institution during the current school year, about how often have you done each of the following? Mark your answers in the boxes. Examples: ☒ or ☒**

| | Very often | Often | Some-times | Never |
|---|---|---|---|---|
| a. Asked questions in class or contributed to class discussions | ☐ | ☐ | ☐ | ☐ |
| b. Made a class presentation | ☐ | ☐ | ☐ | ☐ |
| c. Prepared two or more drafts of a paper or assignment before turning it in | ☐ | ☐ | ☐ | ☐ |
| d. Worked on a paper or project that required integrating ideas or information from various sources | ☐ | ☐ | ☐ | ☐ |
| e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments | ☐ | ☐ | ☐ | ☐ |
| f. Come to class without completing readings or assignments | ☐ | ☐ | ☐ | ☐ |
| g. Worked with other students on projects **during class** | ☐ | ☐ | ☐ | ☐ |
| h. Worked with classmates **outside of class** to prepare class assignments | ☐ | ☐ | ☐ | ☐ |
| i. Put together ideas or concepts from different courses when completing assignments or during class discussions | ☐ | ☐ | ☐ | ☐ |
| j. Tutored or taught other students (paid or voluntary) | ☐ | ☐ | ☐ | ☐ |
| k. Participated in a community-based project (e.g., service learning) as part of a regular course | ☐ | ☐ | ☐ | ☐ |
| l. Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment | ☐ | ☐ | ☐ | ☐ |
| m. Used e-mail to communicate with an instructor | ☐ | ☐ | ☐ | ☐ |
| n. Discussed grades or assignments with an instructor | ☐ | ☐ | ☐ | ☐ |
| o. Talked about career plans with a faculty member or advisor | ☐ | ☐ | ☐ | ☐ |
| p. Discussed ideas from your readings or classes with faculty members outside of class | ☐ | ☐ | ☐ | ☐ |
| q. Received prompt written or oral feedback from faculty on your academic performance | ☐ | ☐ | ☐ | ☐ |
| r. Worked harder than you thought you could to meet an instructor's standards or expectations | ☐ | ☐ | ☐ | ☐ |
| s. Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.) | ☐ | ☐ | ☐ | ☐ |
| t. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.) | ☐ | ☐ | ☐ | ☐ |
| u. Had serious conversations with students of a different race or ethnicity than your own | ☐ | ☐ | ☐ | ☐ |
| v. Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values | ☐ | ☐ | ☐ | ☐ |

**2 During the current school year, how much has your coursework emphasized the following mental activities?**

| | Very much | Quite a bit | Some | Very little |
|---|---|---|---|---|
| a. **Memorizing** facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form | ☐ | ☐ | ☐ | ☐ |
| b. **Analyzing** the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components | ☐ | ☐ | ☐ | ☐ |
| c. **Synthesizing** and organizing ideas, information, or experiences into new, more complex interpretations and relationships | ☐ | ☐ | ☐ | ☐ |
| d. **Making judgments** about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions | ☐ | ☐ | ☐ | ☐ |
| e. **Applying** theories or concepts to practical problems or in new situations | ☐ | ☐ | ☐ | ☐ |

**3** **During the current *school year*, about how much reading and writing have you done?**

a. Number of assigned textbooks, books, or book-length packs of course readings

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

c. Number of written papers or reports of **20 pages or more**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

d. Number of written papers or reports **between 5 and 19 pages**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

e. Number of written papers or reports of **fewer than 5 pages**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

**4** **In a *typical week*, how many homework problem sets do you complete?**

| | None | 1-2 | 3-4 | 5-6 | More than 6 |
|---|---|---|---|---|---|
| a. Number of problem sets that take you **more** than an hour to complete | ☐ | ☐ | ☐ | ☐ | ☐ |
| b. Number of problem sets that take you **less** than an hour to complete | ☐ | ☐ | ☐ | ☐ | ☐ |

**5** **Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work.**

Very little ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very much

**6** **During the current school year, about how often have you done each of the following?**

| | Very often | Often | Some-times | Never |
|---|---|---|---|---|
| a. Attended an art exhibit, play, dance, music, theater, or other performance | ☐ | ☐ | ☐ | ☐ |
| b. Exercised or participated in physical fitness activities | ☐ | ☐ | ☐ | ☐ |
| c. Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.) | ☐ | ☐ | ☐ | ☐ |
| d. Examined the strengths and weaknesses of your own views on a topic or issue | ☐ | ☐ | ☐ | ☐ |
| e. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective | ☐ | ☐ | ☐ | ☐ |
| f. Learned something that changed the way you understand an issue or concept | ☐ | ☐ | ☐ | ☐ |

**7** **Which of the following have you done or do you plan to do before you graduate from your institution?**

| | Done | Plan to do | Do not plan to do | Have not decided |
|---|---|---|---|---|
| a. Practicum, internship, field experience, co-op experience, or clinical assignment | ☐ | ☐ | ☐ | ☐ |
| b. Community service or volunteer work | ☐ | ☐ | ☐ | ☐ |
| c. Participate in a learning community or some other formal program where groups of students take two or more classes together | ☐ | ☐ | ☐ | ☐ |
| d. Work on a research project with a faculty member outside of course or program requirements | ☐ | ☐ | ☐ | ☐ |
| e. Foreign language coursework | ☐ | ☐ | ☐ | ☐ |
| f. Study abroad | ☐ | ☐ | ☐ | ☐ |
| g. Independent study or self-designed major | ☐ | ☐ | ☐ | ☐ |
| h. Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.) | ☐ | ☐ | ☐ | ☐ |

**8** **Mark the box that best represents the quality of your relationships with people at your institution.**

a. Relationships with **other students**

Unfriendly, Unsupportive, Sense of alienation ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Friendly, Supportive, Sense of belonging

b. Relationships with **faculty members**

Unavailable, Unhelpful, Unsympathetic ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Available, Helpful, Sympathetic

c. Relationships with **administrative personnel and offices**

Unhelpful, Inconsiderate, Rigid ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Helpful, Considerate, Flexible

**9 About how many hours do you spend in a typical 7-day week doing each of the following?**

a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

b. Working for pay **on campus**

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

c. Working for pay **off campus**

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

d. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

e. Relaxing and socializing (watching TV, partying, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

f. Providing care for dependents living with you (parents, children, spouse, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

g. Commuting to class (driving, walking, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

**10 To what extent does your institution emphasize each of the following?**

| | Very much | Quite a bit | Some | Very little |
|---|---|---|---|---|
| a. Spending significant amounts of time studying and on academic work | ☐ | ☐ | ☐ | ☐ |
| b. Providing the support you need to help you succeed academically | ☐ | ☐ | ☐ | ☐ |
| c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds | ☐ | ☐ | ☐ | ☐ |
| d. Helping you cope with your non-academic responsibilities (work, family, etc.) | ☐ | ☐ | ☐ | ☐ |
| e. Providing the support you need to thrive socially | ☐ | ☐ | ☐ | ☐ |
| f. Attending campus events and activities (special speakers, cultural performances, athletic events, etc.) | ☐ | ☐ | ☐ | ☐ |
| g. Using computers in academic work | ☐ | ☐ | ☐ | ☐ |

**11 To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?**

| | Very much | Quite a bit | Some | Very little |
|---|---|---|---|---|
| a. Acquiring a broad general education | ☐ | ☐ | ☐ | ☐ |
| b. Acquiring job or work-related knowledge and skills | ☐ | ☐ | ☐ | ☐ |
| c. Writing clearly and effectively | ☐ | ☐ | ☐ | ☐ |
| d. Speaking clearly and effectively | ☐ | ☐ | ☐ | ☐ |
| e. Thinking critically and analytically | ☐ | ☐ | ☐ | ☐ |
| f. Analyzing quantitative problems | ☐ | ☐ | ☐ | ☐ |
| g. Using computing and information technology | ☐ | ☐ | ☐ | ☐ |
| h. Working effectively with others | ☐ | ☐ | ☐ | ☐ |
| i. Voting in local, state, or national elections | ☐ | ☐ | ☐ | ☐ |
| j. Learning effectively on your own | ☐ | ☐ | ☐ | ☐ |
| k. Understanding yourself | ☐ | ☐ | ☐ | ☐ |
| l. Understanding people of other racial and ethnic backgrounds | ☐ | ☐ | ☐ | ☐ |
| m. Solving complex real-world problems | ☐ | ☐ | ☐ | ☐ |
| n. Developing a personal code of values and ethics | ☐ | ☐ | ☐ | ☐ |
| o. Contributing to the welfare of your community | ☐ | ☐ | ☐ | ☐ |
| p. Developing a deepened sense of spirituality | ☐ | ☐ | ☐ | ☐ |

**12 Overall, how would you evaluate the quality of academic advising you have received at your institution?**

☐ Excellent
☐ Good
☐ Fair
☐ Poor

**13 How would you evaluate your entire educational experience at this institution?**

☐ Excellent
☐ Good
☐ Fair
☐ Poor

**14 If you could start over again, would you go to the *same institution* you are now attending?**

☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

**15** **Write in your year of birth:** 1 9 _ _

**16** **Your sex:**

☐ Male ☐ Female

**17** **Are you an international student or foreign national?**

☐ Yes ☐ No

**18** **What is your racial or ethnic identification? (Mark only one.)**

☐ American Indian or other Native American
☐ Asian, Asian American, or Pacific Islander
☐ Black or African American
☐ White (non-Hispanic)
☐ Mexican or Mexican American
☐ Puerto Rican
☐ Other Hispanic or Latino
☐ Multiracial
☐ Other
☐ I prefer not to respond

**19** **What is your current classification in college?**

☐ Freshman/first-year ☐ Senior
☐ Sophomore ☐ Unclassified
☐ Junior

**20** **Did you begin college at your current institution or elsewhere?**

☐ Started here ☐ Started elsewhere

**21** **Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Mark all that apply.)**

☐ Vocational or technical school
☐ Community or junior college
☐ 4-year college other than this one
☐ None
☐ Other

**22** **Thinking about this current academic term, how would you characterize your enrollment?**

☐ Full-time ☐ Less than full-time

**23** **Are you a member of a social fraternity or sorority?**

☐ Yes ☐ No

**24** **Are you a student-athlete on a team sponsored by your institution's athletics department?**

☐ Yes ☐ No (Go to question 25.)

**On what team(s) are you an athlete (e.g., football, swimming)? Please answer below:**

**25** **What have most of your grades been up to now at this institution?**

☐ A ☐ B+ ☐ C+
☐ A- ☐ B ☐ C
☐ B- ☐ C- or lower

**26** **Which of the following best describes where you are living now while attending college?**

☐ Dormitory or other campus housing (not fraternity/sorority house)
☐ Residence (house, apartment, etc.) within **walking distance** of the institution
☐ Residence (house, apartment, etc.) within **driving distance** of the institution
☐ Fraternity or sorority house
☐ None of the above

**27** **What is the highest level of education that your parent(s) completed? (Mark one box per column.)**

| Father | Mother | |
|---|---|---|
| ☐ | ☐ | Did not finish high school |
| ☐ | ☐ | Graduated from high school |
| ☐ | ☐ | Attended college but did not complete degree |
| ☐ | ☐ | Completed an associate's degree (A.A., A.S., etc.) |
| ☐ | ☐ | Completed a bachelor's degree (B.A., B.S., etc.) |
| ☐ | ☐ | Completed a master's degree (M.A., M.S., etc.) |
| ☐ | ☐ | Completed a doctoral degree (Ph.D., J.D., M.D., etc.) |

**28** **Please print your major(s) or your expected major(s).**

a. Primary major (Print only one.):

b. If applicable, second major (not minor, concentration, etc.):

**THANKS FOR SHARING YOUR RESPONSES!**

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Tenth Street, Suite 419, Bloomington IN 47406-7512 or nsse@indiana.edu or www.nsse.iub.edu. 

Appendix B

Human Subjects Approval

From: patricia.hargrove@mnsu.edu [patricia.hargrove@mnsu.edu]

Sent: Thursday, March 24, 2011 10:26 PM

To: Romsa, Katelyn R; Lindstrom Bremer, Karin M

Cc: Hargrove, Patricia M

Subject: IRB Proposal 5762

Your IRB Proposal has been approved as of 3/24/2011. On behalf of the Institutional Review Board I wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the IRB as soon as possible.

The approval of your study is for one calendar year from the approval date. When you complete your data collection, or should you discontinue your study, you must notify the IRB. Please include your log number in any correspondence with the IRB.

This approval is considered final when the full IRB approves the monthly decisions and active log. The IRB reserves the right to review each study as part of its continuing review process. Continuing reviews are usually scheduled. However, under some conditions the IRB may choose not to announce a continuing review. If you need an official letter of approval on IRB letterhead, please contact Dr. Patricia Hargrove, IRB Coordinator, by replying to this email message.