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The Relationship of Undergraduate First-Time-in-College Students' Expectations of Interactions with Faculty and Four-Year College Degree Completion

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The Relationship of Undergraduate First-Time-in-College Students’ Expectations of Interactions with Faculty and Four-Year College Degree Completion

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy
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DEDICATION

I dedicate this work to my best friend and wife, Sandy, who loved me enough to allow me to pursue my lifelong dream. Without her love, guidance, understanding, and support, I could not have completed this journey. Thanks to my best friend and wife!

I am indebted to many people who offered me encouragement, help, and support throughout the writing process. I hope I will not miss giving thanks to anyone.

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Faculty are the academic heart of colleges and universities. They guide learning and facilitate student academic and social integration in the campus community. As described by Tinto, student integration is an important component to success in college. Out-of-class and in-class faculty-student interaction supports student integration and may lead to improved college completion. Students enter college with expectations for what they are about to experience, including expectations for faculty interaction. Smart adapted Holland’s vocational choice theory to study college disciplines and found that faculty in six broad categories of disciplines displayed specific environmental and personality traits and interacted differently with students.

The purpose of this quantitative study was to examine relationships between first-time-in-college (FTIC), prior-to-matriculation student expectations of faculty-student interaction and two dependent variables: four-year degree completion and FTIC, prior-to-matriculation student’s major, as categorized in one of Holland’s categories. High school GPA, ethnicity, and gender were controlled in the study.

The sample consisted of 3,144 FTIC, prior-to-matriculation students enrolled at the University of South Florida, a large, metropolitan public university in the South during the summer or fall of 2008. Students completed the College Student Expectations Questionnaire (CSXQ) as part of a mandatory university orientation program. Seven items on the CSXQ’s “Experiences with Faculty” section were summed and used to assess a FTIC, prior-to-matriculation student’s level of expected faculty-student interaction. Students’ prior-to-matriculation majors were assigned to one of seven Holland major categories --investigative, artistic, social, enterprising, realistic, conventional, and not in Holland. However, only five
categories; investigative, artistic, social, enterprising, and not in Holland were used because no FTIC, prior-to-matriculation student majors were assigned to the realistic and conventional Holland categories.

A binary logistic regression was used to investigate the potential relationship between (FTIC), prior-to-matriculation student expectations of faculty-student interaction score and four-year degree completion. A statistically significant relationship (p<.05) was not observed between a FTIC, prior-to-matriculation student’s expectation level for faculty-student interaction score and four-year degree completion. A statistically significant relationship (p<.05) was observed between the independent variables of high school GPA and gender and the dependent variable of four-year college completion. A one-point increase in the student’s high school GPA showed an increase of the odds of four-year graduation by a factor of 2.96. The study also found the odds of a female graduating in four years is increased by about 1.3 times over a male four-year graduation.

A multinomial logistic regressions were used to evaluate the relationship between (FTIC), prior-to-matriculation student expectations of faculty-student interaction score and Holland’s categories. A statistically significant relationship (<.05) was found between a FTIC student’s expectation level for faculty-student interaction and a student’s FTIC Holland classification. As the level of the faculty-student expectation score increased by one point, the odds of being a member of the investigative category over the artistic, social, or enterprising category increased by 1.05 times, 1.03 times, or 1.04 times, respectively. The results must be interpreted with caution, given the small effect sizes, as exhibited by a Cox and Snell’s value of .005 and a Nagelkerke value of .006.
A college degree has replaced the high school diploma as the entrance requirement to a good job and a comfortable life style. Individuals with a college degree tend to earn more, are healthier, are less likely to be unemployed, have added benefits, and enjoy greater job satisfaction than dropouts (Seidman, 2012). Graduates also develop critical thinking skills—attributes necessary in today’s complex society to make complicated decisions. Research related to degree completion is essential to improve completion rates because all students who begin college do not finish their education.

Degree completion appears to be dependent upon a student’s ability to adopt the “attitudes and beliefs” of his or her peers and faculty. (Habley, Bloom, & Robbins, 2012, p. 11). This concept is referred to as student integration. It was first described in 1973 by educational researcher Vincent Tinto in his student integration theory. Tinto’s model of integration includes two components: academic and social integration. Academic integration relates to the “formal education of the student,” and social integration is “made up of those recurring sets of interactions among students, faculty and staff that take place largely outside the formal academic domain of the college” (Tinto, 1993, p. 106). He described the importance of academic and social integration to understand student departure from college. Tinto explained both formal and informal elements of academic and social interaction and their influence on degree completion. Faculty relationships with students are important elements for both academic and social integration—“especially when that contact extends beyond the formal
boundaries of the classroom to the various informal settings which characterize college life” (Tinto, 1993, p. 57)

Since passage of the Student Right to Know Act in 1995, institutions have been required to report their degree completion rates. Four and six-year degree completion rates are readily available and are quantifiable, making it possible to compare institutions on the measure. Some believe the completion rates demonstrate institutional quality and efficiency (Astin, 2005). Parents, students, taxpayers, state agencies, and various accrediting bodies commonly use completion rates as a quality measure. As an example, national college rankings, such as the US News and World Report’s, make use of a complex formula to produce an ordered list that is widely used by consumers of higher education. Degree completion rates are typically part of the formula. The importance of the statistic is also demonstrated by states that tie the measure to higher education funding.

There is general agreement that degree completion rates are perceived to be too low at the majority of higher educational institutions. According to Synder & Dillow (2012), only 31 percent of students who enter four-year institutions will graduate in four years. Poor college degree completion rates lead to too many students at a disadvantage in having the credentials to seek meaningful employment in a global economy, contributing to a decline in our nation’s international competitiveness. Institutional revenues are also negatively impacted by those who leave or fail to complete their degrees, reducing the funds needed by institutions to provide a quality education. And perhaps most problematic today, the low four-year degree completion rates of 31 percent create an ongoing public debate about college inefficiency, which may undermine the credibility of our higher education system. The problems created by low degree completions are legion, and there is continuing need to better understand those factors which may improve completion rates. This research will examine further several factors that have been previously related to degree completion rates.
Statement of the Problem

Faculty members constitute the academic foundation of colleges and universities. In most institutions, they control institutional academics. This includes responsibility for curriculum development, teaching, student advising, as well as establishing and setting the character, objectives and content of the academic program. It is not surprising to find that faculty-student contact plays a key role in student degree completion and other positive attributes (Pascarella & Terenzini, 2005). It is clear that faculty members are pivotal to the educational process. One area of degree completion research has been the nature of the faculty-student relationship. Research regarding faculty contact with students demonstrates improved degree completion rates, improvements in college GPA, and improvements in enrolling in graduate school and graduating with honors (Astin, 1977, 1993; Astin, 1985; Bean, 1985; Bean & Kuh, 1984; Blackburn & Lawrence, 1995; ECS, 1995; Ewell, 1989; Feldman & Newcomb, 1969; Kuh et al., 1991; Lamport, 1993; Pascarella, 1985; Pascarella & Terenzini, 1976, 1979; Pascarella & Terenzini, 2005; Settle, 2011; Terenzini, 1995; Terenzini, Pascarella, & Blimling, 1996; Terenzini & Pascarella, 1991; Tinto, 1993; Wilson, Woods, & Gaff, 1974). Because increased faculty-student interaction has been positively related to student academic outcomes, it is remarkable that little research currently exists on how entry-level college student expectations for faculty-student contact could influence degree completion. Do some students come to campus expecting to have significant interaction with faculty, and could this expectation influence their academic performance? This study explores this relationship between faculty-student interaction and four-year degree completion and adds support to a growing body of research relating to student expectations upon entering college.

Expectations are powerful predictors of future behavior. They result from the interplay between prior experience in a given situation and what one projects the outcome to be in a separate, yet similar situation. Expectations … “refers to all those things that our past
experiences have taught us to realistically anticipate” (Howard, 2005, p. 12). Kuh, Gonyea, and Williams (2005) described two facets of student expectations. First, expectations act as a filter or a lens for how interactions are perceived. Second, they function as either a restraint or a motivation for a student’s action. Even when controlling for other factors, studies indicate that a student’s perception of faculty concern for students, commitment to teaching, and being available to students impacts persistence (Halpin, 1990; Johnson, 1994; Mallette & Cabrera, 1991). Student expectations for academic and social integration appear to be influenced by the student’s ability to select an institution that is congruent with their college expectations, both academic and social. The expectations formed prior to enrollment “become the standard against which individuals evaluate their early experiences within the institution” (Tinto, 1993, p. 54). If the student’s expectations are consistent with what they experience, the student is more likely to continue to degree completion. When expectations are unmet, students can experience disillusionment and regret for the institutional choice.

**Purpose of the Study**

Tinto (1975, 1987, 1993) postulated that student academic and social integration are important contributors to degree completion. Faculty-student interaction is an important supporter to both. This study examines the relationship between FTIC (first-time-in-college), prior-to-matriculation students’ entry-level expectation for faculty-student interaction and its relationship to four-year degree completion. The other independent variables of high school GPA, gender, race and expectations for faculty-student interaction are controlled. The study also examines the relationship between FTIC, students prior-to-matriculation level of student expectations of faculty-student interaction as determined by the sum of student responses to seven items on the College Student Expectations Questionnaire (CSXQ) and the student’s reported major on college entry, as classified into one of Holland’s six environmental categories.
The independent variables in this study for FTIC, students prior-to-matriculation are (a) level of student expectation of faculty-student interaction as determined by the sum of student responses to seven items on the College Student Expectations Questionnaire, (b) final high school GPA, (c) gender (as self-reported on the CSXQ), and (d) race (as self-reported on the CSXQ); American Indian or other native American, Asian or Pacific Islander, Black or African American, Caucasian (other than Hispanic), Mexican-American, Puerto Rican, Other Hispanic, Other.

The dependent variables are degree completion in four year and the student’s reported major on college entry, as classified into one of Holland’s six environmental categories.

**Theoretical Framework**

The theoretical frame for this study is Tinto’s model of student integration. Developed by Vincent Tinto (1975, 1987, 1993), the model has been extensively used in higher education to study student persistence. Tinto’s longitudinal model proposes that a student’s persistence is based upon the student’s ability to academically and socially adjust to the institution. The greater the academic and social integration of the student with faculty and peers, the more likely the student will persist to graduation (Astin, 1984, 1993; Borglum & Kubala, 2000; Braxton & McClendon, 2001; Carini, Kuh, & Klein, 2006; Kuh, Kinzie, Schuh, & Whitt, 2005; Pascarella, 1980; Pascarella & Chapman, 1983; Tinto, 1975, 1987, 1993). Given the strong relationship of faculty-student interaction to academic and social integration (Pascarella & Terenzini, 2005), the theory suggests that the independent variable of level of anticipated faculty–student interaction is correlated with four-year degree completion. As applied to this study, Tinto’s theory holds that the independent variable of faculty-student interaction might be related to the dependent variable of four-year degree completion, as a result of faculty-student interaction on academic and social integration.
Research Questions

1. What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

2. What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ characteristics of gender, race, high school GPA, expectation of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

3. What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and students’ Holland major classification prior-to-matriculation?

Significance of the Study

Research relating to demographics of student expectations is limited (Miller, 2005). A study of undergraduate student expectations of faculty-student interaction and the relationship to four-year graduation contributes to scholarly research on the subject. The current study contributes to the research on how the expectation of faculty-student interaction relates to gender, race, high school GPA, academic majors as categorized by Holland and four-year graduation.

Limitations

There are three limitations to the research. First, the study used secondary data. The data was collected by another group, and the researcher had no control over how it was collected. Second, the problem of using self-reported data is a limitation. The reliability of the
survey data may be compromised because it is difficult to determine the care with which students considered their responses. Study participants might either carefully respond to questions or provide little thought or contemplation regarding their response. Student participants could respond in a manner that provides the most socially appealing response rather than an honest answer to each question. These are realities of using self-reported survey data. Finally, the study encompassed a single institution, and the result of the study might not be generalizable to other populations.

**Delimitations**

Four study delimitations are identified. First, the generalizability of the study is limited to the population under study. Next, the research is confined to students who completed the College Student Expectations Survey (CSXQ) and provided their student identification numbers. The pairing of CSXQ information and the student identification number allowed for the retrieval of prior-to-matriculation degree intention and the student’s graduation status. The third issue is the use of four-year graduation rates. This limits the study findings since only students who graduate in four years are included. Finally, degree completers enrolled in programs that typically take longer than four years to complete are omitted from the study; this includes programs longer than 120 credit hours in length.

**Definition of Terms**

**Attrition:** A term used to describe a student who fails to register for classes in consecutive semesters.

**Calendar or academic year** – For the institution under study, it consists of the fall, spring and summer semesters.

**College Student Expectations Questionnaire (CSXQ):** A survey that assesses entry-level students’ goals, motivations, and expectations for spending their time in college.
**Dismissal:** When an institution terminates a student’s ability to continue their college enrollment for an academic or other reason.

**Dropout:** When an undergraduate degree-seeking student stops attending the institution for over one year and fails to formally withdraw from the institution.

**Expectancy:** Starting college student “anticipations about what is going to happen to them” (Bank, Biddle, & Slavings, 1992, p. 322).

**Expectancy theory:** A theory developed by Vroom (1964) describing decision making based upon different choices. The theory states that an event will be perceived positively if one thinks it will lead to a positive outcome.

**Faculty-student interaction:** Any interaction a faculty member might have with a student, including in-class and out-of-class interactions.

**First-time-in-college student (FTIC):** Undergraduate students who have less than twelve hours of credit earned after high school. Included are students accepted during the summer.

**Full-time status:** Students enrolled for more than twelve credit hours of academic credit.

**Four-year graduation rate:** Calculated from the summer or fall semester of 2008 and ending at the completion of the spring semester of 2012.

**High school GPA:** The grade point average earned by the student upon graduation from high school, based upon a 4.0 scale.

**Holland’s college environment category:** A conversion of a student’s college major into one of six Holland college environmental categories representing groups of academic majors.

**Level of expected faculty-student interaction:** Determined by the sum of FTIC student responses to seven items on the College Student Expectations Questionnaire (CSXQ).
Item responses range from very often (4) to never (1). Total possible scores range from 28 – 7.

**Matriculation:** The point when an enrolled student attends his or her first college or university class.

**Persistence:** The student process of continued enrollment until graduation at one or several educational institutions.

**Retention:** An institution’s ability to continue the enrollment of a student from admission to graduation.

**Stop-out:** A student who temporarily stops attending the institution where enrolled for less than one year.

**Withdrawal:** A student who elects to stop attending an institution and formally withdraws from the institution.

**Overview of Methodology**

This study uses a logistic analysis design of secondary data gathered as part of a university student orientation program during which the College Student Experiences Questionnaire (CSXQ) was administered at the University of South Florida (USF) a large public research university. Newly enrolling FTIC undergraduate students are required to attend a two-day university orientation session. A purposive sample of 3,954 students took the survey during the summer of 2008. Of this group, a total of 3,581 students provided student identification information that allowed for examination of their academic records. Descriptive statistics are used to describe the sample. A binary and multinomial logistic regression analysis was conducted using the Statistical Package for the Social Sciences version 21 (SPSS) software.
Organization of the Study

Chapter One provided an overview of the study, a statement of the problem, a theoretical frame of reference, purpose of the study, research questions, significance of the study, limitations, delimitations, definition of terms, overview of the methods to employed, and the study organization. Chapter Two provides a review of the literature and describes how the literature relates to the study. Chapter Three describes the methodological approach, research design, population and sample, instruments, data collection procedures, and analytical procedures used. Chapter Four reviews the analysis of the data and the study closes with Chapter Five that describes the findings, implications, and recommendations of the research.
CHAPTER TWO:
REVIEW OF THE LITERATURE

It seems only common sense to assume that when college students have more interaction with faculty members, there would be an instructional benefit for the students. After all, isn’t that what teaching is all about? It turns out that there is a considerable body of research which corroborates this common sense assumption. This chapter will review the literature which adds an empirical perspective to the value of faculty-student interaction and its potential impact on degree completion.

Decades of research show the positive benefits of faculty-student interaction. According to a growing body of research, the more a student interacts with a faculty member, the better the probability of increased student satisfaction and greater student gains, both academically and socially (Astin, 1993). Student satisfaction with college, improved persistence rates, career goal development, and improved grades are all factors associated with faculty-student interaction. The vital benefit seems to be the encouragement it provides the student for both social and academic involvement. This involvement leads to student success (Kuh & Hu, 2001) and improved degree completion.

Tinto’s (1975, 1987, 1993) student integration model suggests that an essential requirement for student success is the student’s ability to incorporate the norms and values of the college community. The model is fitting, given that two principal concepts of integration, academic and social, are closely aligned with faculty-student interaction. Academic integration is defined as learning the traits of the student’s discipline, earning adequate grades, and adopting
the academic standards and expectations of the college. Social integration is the extent to which a student finds the college social environment to be in balance with the student’s expectations for social interactions. Faculty-student relationships play a pivotal role in integration and student degree completion (Astin, 1993; Braxton, Sullivan, Sullivan, & Johnson, 1997).

An evolving aspect of Tinto’s model is the investigation of the expectations that students have for faculty-student interaction when they arrive on campus. Students begin college with unique academic and social expectations of the forthcoming experience. Expectations are… “all those things that our past experiences have taught us to realistically anticipate” (Howard, 2005). When the expectations of newly enrolled students are unmet, conflict within the emerging academic and social communities occurs because students believe they were misled by the institution prior to enrollment (Tinto, 1987). The discord leads to frustration and results in poor academic and social integration, which impacts degree completion (Braxton, Vesper, & Hossler, 1995).

**Tinto’s Student Integration Model**

Vincent Tinto’s student integration theory is utilized in numerous degree completion studies as a theoretical framework (Pascarella & Terenzini, 2005). The model enjoys “near paradigmatic status” (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007, p. 13) and is considered a classic by researchers in the field, including Braxton et al. (1997) and Pascarella and Terenzini (2005). “Scholarship published in the top three educational journals in the last two decades suggests that the field is relying heavily on Tinto’s conceptual framework” (Bensimon, 2007; Melguizo, 2011, p. 418). Tinto’s work has led to an extensive body of research (Pascarella, Duby, & Iverson, 1983), with over 775 citations (Braxton & Hirschy, 2004). When published in 1975, the theory provided a unique institutional perspective on student attrition.

Tinto’s (1975) theory employs a longitudinal approach that examines the role institutions play in the education, both intellectually and socially, of students. The model is based upon
research that relates a student’s failure to complete college to psychological factors closely associated with suicide. It offers an explanation of student departure and college action or inaction that might impact student degree completion. In Tinto’s view, student degree completion is impacted by three areas: prior-to-matriculation characteristics, the student’s interaction with the institutional environment, and institutional characteristics. Prior-to-matriculation student characteristics include family background, high school GPA, personality and attitude, gender, high school effectiveness, and goal commitment. Academic and social integration are influential features of the student’s engagement with the college. The effects of institutional characteristics on degree completion consist of college resources provided to students, policies and procedures, institutional type, facilities, and the student body composition.

In summary, students begin college with a group of characteristics that contribute to an initial level of goal and institutional commitment. The entry-level characteristics act together with the institutional characteristics to impact the student's academic and social integration. Student integration likely determines whether the student will continue to degree completion or leave. Integration is also influenced by the student's psychological attitude. Three distinct stages that occur during a student’s transition to college help to clarify the role of academic and social integration.

The stages typically occur early in the student’s education, and students experience the stages in different ways. The lines between the stages are not always clear, and each stage has unique characteristics. Tinto (1993) utilized work by Van Gennep to describe the stages as separation, transition, and incorporation. The student must first separate from previous relationships, experience a transitional period of adjustment, and finally integrate into the new college environment. Students leave educational institutions when integration is not achieved.

Tinto’s separation stage (1993) requires students to first separate from past relationships and associations. These represent old values and norms that must be replaced, to permit the
development of interactions consistent with the new college environment. Old relationships include home town acquaintances, family, friends, and previous high school links. The new relations allow for the formation of normative behaviors consistent with the college setting.

The transition segment (Tinto, 1993) represents the time required to adopt the new norms and behaviors of college. This stage represents a period when the student is no longer bound to the old norms and is not yet bound to the new, developing academic and social norms. The period required for transition is dependent upon the difference between the student’s current relationships, behaviors, and norms and those required for college integration. Students whose backgrounds closely match the new environmental norms of behavior will more easily adopt the new behaviors than those from dissimilar backgrounds. For example, students with college-educated parents or a high expected family contribution (EFC) are likely to move quickly through the stage. Minority students, and students with a low EFC and whose parents do not have a college education are likely to struggle to complete the phase. Additionally, some students might experience what Tinto refers to as “anticipatory socialization” (1993, p. 93). This occurs when a student’s choice of an institution is vital to the accomplishment of a job-related objective. The desire to “fit in” promotes completion of the transition stage for these students.

Once the student has accepted that new norms are required for success, the student must become incorporated (Tinto, 1993) into the academic and social structures of the college community. Incorporation, integration, or what is now called engagement (Tinto, 2012) occurs formally or informally. Tinto describes the “formal and informal mechanisms” (Tinto, 1993, p. 99) that lead to student engagement in the new community. Formal engagement references the intentionally planned academic or social actions or activities of the institution. Informal engagement deals with the student’s academic and social needs and is made up of the interactions that take place outside the formal academic or social realms planned by the college. Academic and social integration are indistinct concepts that influence one another. For instance,
academic involvement in class might lead to improved social interactions, or improved social interactions could lead to improved academic engagement (Tinto, 1997). However, some high levels of social involvement can lead to poor academic involvement. Engagement leads to a “sense of belonging” (Harris, 2006), and student actions to drop out or to stay are based upon how strongly students sense they are engaged.

Academic integration, as described by Tinto (1975), consists of two chief components: grade performance and intellectual development. Student grades are a strong predictor of degree completion (Pascarella & Terenzini, 2005) and indicate the student’s degree of attainment of institutional academic expectations. Intellectual development describes the student’s ability to connect with the academic norms of the institution. If the campus climate and the student’s intellectual growth meet his or her expectations, the student will continue enrollment. Dissatisfaction will result in student departure. Given the central role faculty play in grading and the intellectual development of the student, faculty-student interaction is an important contributor to student academic integration (Astin, 1984; Pascarella & Terenzini, 1991) and to students’ social integration.

Successful social integration into college requires a student to perceive that both the level of social integration opportunities available at the college are adequate and that the student has a positive perception of “congruency” encountered between the student’s expectation and the student’s academic environment. (Tinto, 1975, p. 107). Social integration is principally advanced by peer-to-peer, faculty-student interactions and contact with college administrative personnel. Positive relationships and encounters with these individuals lead to perceptions of psychological support and friendships that positively impact degree completion (Gloria & Kurpius, 2001). The perception of poor social integration leads to isolation, loneliness, and institutional departure (Nicpon et al., 2006). Early studies show that social faculty-student interaction improves both academic and social integration and is related to continued college
enrollment (Spady, 1971; Vreeland & Bidwell, 1966). A student’s perception of his or her fit within the institution and his or her level of loneliness additionally impacts integration.

It is suggested that a high number of student departures stem from two sources: “incongruence” and “isolation” (Tinto, 1993, p. 52). Incongruence is the mismatch between the student and the institution. Personal relationships between faculty, staff and students form the basis for student decisions regarding the level of incongruence. When the difference between the student’s norms, likes, academic and social needs and those provided by the college are dissimilar, student dissatisfaction and departure could result. As described above, faculty represent the college academic system and are the chief facilitators of academic integration. Isolation occurs in the absence of sufficient student social or academic relations to prevent departure from the institution. Tinto’s theory states that institutions have little control over incongruence and some amount of student incongruence is unavoidable. He further describes isolation as something that “need not occur” (Tinto, 1993, p. 50).

Tinto’s model it is not without detractors. Braxton et al. (1997), in a study that developed and tested 15 factors associated with academic and social integration, found only “partial support” (Braxton et al., 1997) at residential colleges and weak support in commuter institutions. Residential institutions supported five of Tinto’s concepts, and commuter institutions supported only two. (Braxton et al., 1997). As a result of these findings, Braxton, Hirschy, and McClendon (2004) developed a theory of student departure from commuter institutions and a revised theory for residential institutions. Melguizo (2011) identified restrictions of Tinto’s work that were discovered from a comprehensive review of the literature. These limits are that his theory (a) confines the impact of the “outside” world, such as K-12 impact, governmental policies, or the impact of technology; (b) is not appropriate to study minority persistence; (c) lacks outside accountability measures or systems; (d) has no valid and reliable instruments for measurement of academic and social integration; (e) has no connection between academic/social integration
and learning/persistence; (f) does not account for faculty shifting priorities from teaching to research and the rise of student affairs; and (g) fails to account for the growing nontraditional student population. Tinto's concept of academic socialization is poorly supported, according to Braxton et al. (1997), while support for social integration as a positive factor for persistence is strong. Issues regarding clear operational definitions for academic integration are likely the cause (Braxton & Lien, 2000; Braxton et al., 1997; Hurtado & Carter, 1997). Additionally, Kuh and Love (2000, p. 197) believe trying to split academic integration from social integration creates a separation “of student experiences that may be part of one broad social integration construct.”

Research supports the importance of the relationship between integration and degree completion. Braxton et al. (1997) and Astin (1993) found that the level of integration in a college’s academic or social communities is an important factor for continuing enrollment. Pascarella and Terenzini (2005, p. 426) state this clearly: “The evidence consistently indicates that student involvement - both generally and in an array of specific academic and social areas or activities - is related in some fashion to intended or actual persistence into the next academic year.” Braxton et al. (1997) found that integration impacted continued enrollment, a moderate indirect effect, by influencing students’ goal and institutional commitments. Many studies find positive and significant effects of integration, both academic and social, on continued enrollment. This was observed in national studies (Astin, 1993; Tinto, 1998) and in individual institutional studies (Thomas, 2000; Witherspoon, Long, & Chubick, 1999).

Tinto’s theory (Tinto, 1975, 1993) is useful for the present study of a single institution for several reasons. First, it is an institutional-level model proposed to explain student departure occurring in a specific college or university. Second, it is both longitudinal and interactional by describing interactions occurring over time to individuals. Finally, the model is policy-relevant since it may be used by college personnel to improve institutional retention.
Tinto explains two personal characteristics important to student degree completion: “intention” and “commitment” (Tinto, 1993, p. 37). An intention or expectation is the driving force for educational attainment. Tinto believes the higher the goal commitment, the greater the chances the student will continue to degree completion. For example, a student intending to complete a doctoral degree is more likely to complete an undergraduate degree than a student with an intention to complete an undergraduate degree. Commitment is the student’s amount of motivation that offers the drive to complete the degree. Entry-level student expectations for college are now reviewed.

**Student Expectations**

Many high school students have expectations for attending college, considering that almost half, 41 percent, of 15 and 16-year-old high school students expect to attend college and complete a college degree (Reynolds & Pemberton, 2001). Student expectations to attend college are also reflected in growing college enrollments. The percentage of 18 to 24 year-olds enrolled in college increased 35 percent to 41 percent between 2000 and 2012 (Synder & Dillow, 2012). Supplemental research on FTIC students indicates that about 98 percent of students intend to complete a degree at the institution where they started college. Additionally, less than one percent believe they will drop out (Miller, 2005). It is clear that many students have an intention to complete a college degree.

Student expectations comprise a broad construct based upon “all those things that past experiences have taught us to realistically anticipate” (Howard, 2005, p. 12). Expectations for college result from an interaction between one’s prior experience in a given situation and what one projects the outcome to be in a new yet similar situation. Expectations can influence future student behaviors (Malaney & Shively, 1995) by acting as a filter for future interactions; they can have a positive or negative impact. Könings, Brand-Gruwel, van Merriënboer, and Broers (2008, p. 536), in a study of high school students, found “expectations affect student motivation,
engagement and investment of effort in learning.” They described three ways expectations influence behavior: (a) students make choices biased to be consistent with their expectation, (b) students’ understanding of events will align with expectations rather than contradictions and (c) students engage in a way that is consistent with their expectations. Student expectations are dynamic and constantly changing in response to new experiences and continued interactions (Pike, 2006) and subject to continual change. Howard (2005, p. 23) described expectations as “always in flux and … continuously being revised in the face of new experiences.”

Students’ constantly create new expectations based upon fresh experiences. The revision of expectations can be viewed along a continuum from those that generate little personal dissonance to those creating substantial conflict as the student struggles to create new expectations. The amount of agreement between expectations and experience positively impacts student success and satisfaction (Braxton et al., 1995; Kuh, G. et al., 2005), while high levels of disagreement between expectations and experience negatively impact success and satisfaction. Entering college freshmen’s expectations focus on issues of academic quality, security, and safety (Low, 2000). Five additional expectations were identified by Low (2000, p. 10): (a) cost - the greater the cost, the higher the expectation; (b) reputation - the greater the selectivity, the higher the expectation; (c) value - the higher the value stated by the institution, the greater the expectation; (d) overpromising and under delivering - not meeting promises made during the recruitment process causes elevated expectations and poor satisfaction if expectations are not met; (e) basic personal needs - when individual needs are not met, expectations increase. Two conclusions concerning student expectations seem warranted; unmet expectations may lead to student departure, and FTIC students seem to exhibit optimistic attitudes and beliefs regarding their successful completion of college.

Newly-enrolled students tend to be confident about many college expectations, perhaps excessively confident. Students overestimate the “extensity and the intensity of the
expectations” (Kuh, G. et al., 2005, p. 37) of college. When students’ expect more than is actually experienced, this is labeled the freshman myth (Berdie, 1966; Stern, 1966). FTIC students presume they will study, write, and attend cultural activities more frequently than they actually do (Kuh, G. et al., 2005). Additionally, many realize that college academic work is less intellectually engaging than first anticipated. The discord between student expectations and experiences impacts student performance and continued enrollment (Berdie, 1966). When expectations and experiences match, student satisfaction is improved, and students will continue to degree completion (Braxton et al., 1995). Olsen et al. (1998) confirmed in his research that many students may be overly optimistic about their academic success. Their research examined data from 900 FTIC students enrolled at a large, public research institution. Prior-to-matriculation students took the College Student Expectations Questionnaire (CSXQ) and at the end of the second semester took the College Student Experiences Questionnaire (CSEQ). The CSXQ measures entry student expectations, while the CSEQ measures student experiences. There were five significant findings related to student expectations and experiences that emerged from that study. First, the freshman myth was confirmed. Second, entry-level academic standing, such as GPA and accelerated credit hours, was found to impact student expectations and subsequent college experiences. Third, race and gender had little effect on college experiences. Fourth, students with low expectation levels were more accurate in their subsequent experiences than students with high expectations. Last, students with high expectations for a wide range of social, academic, and intellectual activities were more likely to engage in college activities than those with low expectations.

Insight into entry-level students’ academic and social expectations for college is provided by Kuh, G. et al. (2005). The national study collected information from a sample of over 38,000 students taking the CSXQ and from 970 students taking both the CSXQ and College Student Experiences Questionnaire (CSEQ). The researchers identified factors that explain different
levels of expectations. Furthermore, they describe how expectations might influence first-year experiences. Kuh used two constructs, identified by factor analysis, for the dependent variables: expectations for college activities and expectations for the college environment. The expectation for the college environment items asked about participation levels in “purposeful college activities” (Kuh, G. et al., 2005, p. 43), such as course learning, faculty student interaction, clubs, and writing experiences. The college environment items evaluated the student’s expectation for “how much emphasis the school gives to scholarly and intellectual qualities and the quality of the personal and social climate of the school” (Kuh, G. et al., 2005, p. 40). A regression analysis, Kuh, G. et al. (2005) accounted for 21 percent of the variance for expectations for college activities and 11 percent of the variance for expectations for the college environment. Most of the independent variables in the activities and social constructs were statistically significant; however they were small, “mostly trivial effects and do not explain much of the variance in student expectations for college” (Kuh, G. et al., 2005, p. 50). Nonetheless, the work is instructive in providing general trends regarding entry student expectations.

First-year student expectations for college activities with the largest beta values were student ability (0.12), educational aspirations (0.10), motivation (0.18) and a positive orientation to college (0.23). Female students (0.09) and Black students (0.08) had higher college activity expectations than males and Caucasians. Students majoring in math and science (-0.07) exhibited lower college activity expectations than the pre-professional reference group, while the number of hours working either on (0.05) or off (0.04) campus elevated expectations. Three institutional types increased college activity expectations: doctoral/research extensive (0.04), doctoral/research intensive (0.09), and baccalaureate liberal arts (0.03). Students attending private institutions exhibited increased college activity expectations (0.04) over students attending public higher education providers. Entry-level student college environment expectations are similar to the findings for college activity expectations. The same four variables
with the largest beta values in the study are also significant, with a small effect size: student ability (0.09), educational aspirations (0.04), motivation (0.11), and positive orientation to college (0.22). Negative impacts on college environmental expectations included enrollment size (-0.05). Also, students attending doctoral/research extensive (-0.04) or baccalaureate general institutions (-0.02) are less likely than the master’s institutional reference group to expect an engaging campus environment. Similar to the college activity measure, females (0.07) and African-Americans (0.05) have increased expectations for the college environment.

In addition, Kuh, G. et al. (2005) described the impact of student expectations on student experience gains in two areas: general education and intellectual skill development. Six areas demonstrated gains in general education with a direct effect of expectations on experience. These areas are writing experience, course learning experiences, faculty-student interaction, experiences with diversity, topics of conversation, and information in conversations. Five areas of gains in intellectual skill development produced a direct effect of expectation on experience. These five areas are writing experience, course learning experience, faculty-student interactions, topics of conversation, experience with diversity, and information in conversations. Kuh, G. et al. (2005, p. 56) also found “student expectations directly affect the corresponding experiences, showing fairly strong influences, ranging from .34 to .53. Kuh provides a general description of entry student expectations, but provides little explanation regarding the formation of expectations.

Bank et al. (1992) identified four types of student expectations used to study student departure. These are expectancies, self-labels, attributed norms, and own norms. Expectancies, as described previously, are the foundation of the expectancy-value theory. The theory (Feather, 1982; Jones, 1977; Vroom, 1964) holds that an individual will perceive an experience to be beneficial if the individual believes it too will lead to a beneficial result. Unfulfilled expectations can lead to failure to complete the degree. Self-labels refer to concepts related to
the self such as self-worth (Covington, 1998), self-efficacy (Bandura, 1977), and a closely aligned theory of learned helplessness (Dweck & Leggett, 1988; Seligman, 1975). A self-view helps to makes sense of these theories. “A statement about who one is, is also a statement about who one expects to be” (Bank et al., 1992, p. 323). Attributed norms are those that a student forms by interacting with three categories of significant others that mold the student’s expectations (Bank, Slavings, & Biddle, 1990; Tinto, 1987): parents, peers and teachers. The final expectation is called own norms. Own norms are developed by the individual by the socialization process; independent of referent others. Own norms “stress the ways in which a person’s own expectations shape his or her behaviors” (Bank et al., 1992, p. 323). Bank et al. (1992) conducted the study of the expectations of 1,017 entering freshmen in a large state university. However, using various models, he was able to explain less than five percent of the total variance. Consistent with the freshman myth, students were found to be optimistic regarding expectancies and a minor relationship between expectances, and continued student enrollment existed. They found over half of student expectations to be related to social or personal expectancies. A nonacademic environment was just as capable of meeting these expectancies as an academic setting. A second finding of the research discovered a weak relationship between student expectations and persistence to the second year. “Students who expected most of their hopes to be realized were no more likely to remain at the university where they began their college careers than were students who expected disappointments” (Bank et al., 1992, p. 330). Researchers concluded that academic expectations may be satisfied at any college or university. However, they did find a strong connection between what they termed positional hopes, or those involving students’ anticipations for leadership positions on campus, and persistence to the sophomore year.
Faculty-Student Interaction

Faculty, as the academic face of colleges and universities, play an important role in the lives of students and their success in college. Faculty members are often the first individuals students turn to for guidance and support. They function as socializing agents, helping students adapt to the academic and social systems of the institution. Faculty members act as intermediaries between the institution and students who are struggling with institutional policy issues. Faculty members serve as trusted advisors and act as a sounding board as students work through issues of career selection or identity. They also act as disciplinary role models by displaying, to students, the traits and attitudes required by a particular area of study. One of the earliest studies of faculty-student interaction focused on the impact faculty members have on student values. The work, conducted by Jacobs (1957, p. 8), found that “faculty influence appears more pronounced at institutions where associations between faculty and students are normal and frequent and students find teachers receptive to unhurried and relaxed conversations outside the classroom.” Jacobs’ early finding is helpful in setting basic requirements for successful faculty-student interaction and is supported by later research promoting the best practices in education.

In the late 1980’s, Chickering and Gamson (1987) published the Seven Principles of Good Practice, a work that endeavored to improve higher education instructional practices. The first principle focused attention on the importance of faculty contact both inside and outside the classroom. Chickering and Gamson (1987, p. 1)

Good Practice Encourages Faculty-Student Contact: Frequent faculty-student contact in and out of classes is the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students’ intellectual commitment and encourages them to think about their own values and future plans.
Each of the seven principles can be related, in some way, to relationships between faculty and students. Several lines of research have emerged from their efforts (Chickering & Gamson, 1999). The College Student Experiences Questionnaire (CSEQ) and, subsequently, the College Student Expectations Questionnaire (CSXQ) were developed. The CSXQ was influenced by this work (Chickering & Gamson, 1999). These two surveys help researchers explore various aspects of student expectations for college, including faculty-student interactions.

The frequency and the quality of faculty-student interactions are perceived to be important factors in driving student academic and social integration. According to Pascarella and Terenzini (1991), the quantity of the interaction and the quality, either substantive or casual, matters. For the most part, the greater the level of faculty-student interaction, the better (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). Higher amounts of faculty-student interaction, controlled for sex, academic aptitude, and personality attributes, seem to lead to freshman persistence (Pascarella & Terenzini, 1977). The frequency of interactions appears to increase as students move through each succeeding academic year (Kuh & Hu, 2001). Despite the promising findings of the significant influence of faculty-student interactions on positive student outcomes, the literature shows that overall faculty-student interaction occurs infrequently (Anaya & Cole, 2001; Chang, 2005; Cotten & Wilson, 2006; Kim & Sax, 2009; Kuh & Hu, 2001; Mara & Mara, 2011; NSSE, 2012), and this finding appears to be stable over time. Koljatic (1999) found faculty-student interaction levels were constant between 1983 and 1997. The quality of the interaction appears to be of more importance than the frequency of faculty-student interaction (Pascarella & Terenzini, 2005). Interactions are broadly classed as either substantial or casual. Substantial contact has a greater impact on positive educational outcomes, such as knowledge attainment and skill development (Kuh & Hu, 2001), than casual interaction. Research shows that primarily social-oriented interactions or casual contact with faculty fail to demonstrate positive outcomes (Bean, 1980, 1985; Dika, 2012; Voorhees, 1987), and high levels may be
counterproductive (Kuh & Hu, 2001). Interactions that support the academic aims of the institution or ones that concentrate on student development appear to have the most significant impact (Astin, 1993). Non-classroom interactions must go beyond formal encounters. “Friendly contacts which operate at a more personal level and cover a broad range of issues have a greater impact than contacts which are perfunctory and limited to specific academic and vocational topics or requirements” (Endo & Harpel, 1982, p. 133). This idea is supported by Cox (2011), who developed a topology of outside-the-classroom interaction that captures the range of faculty-student outside class interactions. The topology consists of “five types of fluid, contextually influenced interactions, presented in decreasing order of observed frequency: disengagement, incidental contact, functional interaction, personal interaction, and mentoring” (Cox, 2011, p. 50). Given these levels of interactions from disengagement to mentoring, it is easy to understand how the highest levels of faculty-student interaction lead to academic and social integration. Research supports this finding.

Numerous studies report the positive relationships that out-of-class faculty-student interaction seem to contribute to many academic and social integration factors and to student persistence (Astin, 1977, 1993; 1985; Bean, 1985; Bean & Kuh, 1984; Blackburn & Lawrence, 1995; ECS, 1995; Ewell, 1989; Feldman & Newcomb, 1969; Kuh et al., 1991; Lamport, 1993; Pascarella, 1985; Pascarella & Terenzini, 1976, 1979; Pascarella & Terenzini, 2005; Settle, 2011; Terenzini, 1995; Terenzini et al., 1996; Terenzini & Pascarella, 1991; Tinto, 1993; Wilson et al., 1974). Positive faculty-student relationships include improved grade point average (Anaya & Cole, 2001; Dixon, 2003), social integration (Dixon, 2003; Lamport, 1993; Schwitzer, Griffin, Ancis, & Thomas, 1999), persistence (Pascarella & Terenzini, 1976, 1977, 1980), and student intention to enter graduate school (Hathaway, Nagda, & Gregerman, 2002). However, given the strong effect faculty-student interaction has on student degree completion, little research exists
regarding the reasons for different levels of student interaction among faculty (Cox, McIntosh, Terenzini, Reason, & Lutovsky Quaye, 2010).

Einarson and Clarkberg (2004) reviewed the literature and proposed four broad factors that likely influence faculty out-of-class interactions with undergraduates. These factors are time demands, institutional characteristics and norms, faculty attitudes and beliefs, and interpersonal skills.

How faculty elect to spend their time influences faculty-student relationships. Faculty members working at institutions that emphasize research over teaching generally choose to spend less time with students since faculty are rewarded for research rather than teaching. This is supported by a 20-year-review of how faculty time use has evolved (Milem, Berger, & Dey, 2000). Milem et al. (2000) found significant increases in time preparations for teaching at all schools except for research universities. Time spent with students for advising and counseling between 1972 and 1992 was found to be reduced. They believed this was “heavily constrained by institutional factors.”

Our study’s findings suggest that there is a large contradiction between what we say we value in higher education and what we actually reward. Although we state publicly that we want to create educational environments that contribute to better outcomes for students, we do not reward faculty in ways that promote these better outcomes. Specifically, out-of-class contact does not appear to be rewarded in higher education institutions (Milem et al., 2000, p. 472).

Not all researchers agree with this finding. Wilson et al. (1974) found no connection between faculty-student interaction and research activity and a later study by Einarson and Clarkberg (2004) found no relationship between competing time requirements and out-of-class faculty-student interaction. Livingston (2011), in a review of over 500 full-time faculty employed at four-year colleges, found that faculty are engaged psychologically in one or more roles, but are not
equally engaged in service, teaching and research. The perfect faculty member who is able to teach and conduct research is rare (Fairweather, 2002).

Various institutional characteristics, such as size, availability of residential facilities, type and minority serving status each have the potential to impact levels of faculty-student involvement. Smaller institutions seem to be more socially and academically engaging than larger institutions (NSSE, 2012). Pascarella and Terenzini (2005) found institutional size conversely related to persistence, but stated that the effect is small and that institutional size is likely a mediating effect created by student perceptions of factors such as the institution itself, peers, academic and social integration, and faculty interaction. Additionally, work conducted by Bradley, Kish, Krudwig, Williams, and Wooden (2002) found that students enrolled at schools with less than 10,000 students expect higher levels of faculty-student interaction. The National Survey of Student Engagement NSSE (2012) shows the highest level of freshman, faculty-student involvement at smaller undergraduate four-year colleges with a focus on arts and sciences and the lowest levels at very high research activity institutions. The availability of on campus residence facilities also impacts faculty-student involvement. (Pascarella & Terenzini, 1991; Pascarella & Terenzini, 2005). This is likely due to a propinquity principle described by Newcomb (1966); students with similar backgrounds and values living in close proximity to one another are more likely to develop interpersonal relationships. Students that live on campus have more opportunity for faculty interaction due to increased opportunities for contact with faculty. Smaller four-year institutions are frequently residential because they are located in out-of-the-way places and commonly have lower faculty-student ratios. Both factors lead to greater interaction and allow deeper relationships with faculty to flourish (Kuh et al., 2006). Institutional type determines if the institutional emphasis is on research or teaching (Milem et al., 2000). Institutions that serve primarily minorities appear to have higher levels of faculty-student interaction. These include historically black colleges and universities (HBCU), Hispanic-serving
institutions (HSI), and tribal colleges (TC). The minority-serving institutions provide strong support both educationally and socially and exhibit high levels of faculty-student interaction (Flowers, 2003; Hirt, 2006; Hurtado, Carter, & Spuler, 1996). Dayton, Gonzalez-Vasquez, Martinez, and Plum (2004) believed that HSI college personnel and faculty play a key role in Hispanic academic and social integration. In addition to the institutional characteristics described, academic subject area and faculty employment status also appear to impact faculty-student relationships.

Academic disciplines and faculty tenure status are two more institutional characteristics that research shows can also impact faculty-student interaction. Academic disciplines and the unique aspects of academic departments vary in the importance certain faculty roles are embraced, (Kim & Sax, 2011; Vreeland & Bidwell, 1966) including faculty-student interaction. Faculty with student-centered values vary by discipline (Austin, 1996; Clark, 1987). Additionally, faculty teaching in the social sciences are more likely to engage in faculty-student contact than faculty teaching in the natural sciences (Gamson, 1967; Umbach & Wawrzynski, 2005). Early research by Gaff (1973) helps to explain disciplinary difference by finding faculty in social science, humanities, and professional fields favor teaching over research (Biglan, 1973), make greater use of engaged teaching strategies (Fairweather, 1999), and more highly promote student services than biology, physical science, mathematics, and engineering faculty. The value of using non-tenured faculty has been called into question (Benjamin, 2003; Eagan & Jaeger, 2009; Eagan & Jaeger, 2008; Ehrenberg & Zhang, 2005; Umbach & Wawrzynski, 2005) and may result in lower student persistence due to the professors’ lack of time to interact with students outside the classroom (Eagan & Jaeger, 2008). For the most part, tenure decisions about tenure and faculty promotion do not consider the extent of faculty-student contact. (Bowen & Schuster, 1986; Clark, 1987). Ehrenberg and Zhang (2005, p. 8) used College Board findings and found that “with other factors held constant, increases in either the percentage of
faculty that are part-time or the percentage of full-time faculty that are not on tenure-track, is associated with a reduction in graduation rates.” They found that a 10 percent increase in a public institution’s, full-time, non-tenure track faculty resulted in a 2.65 percent decrease in the school’s graduation rate. Eagan and Jaeger (2008), in a study of students enrolled in undergraduate, general education “gatekeeper courses” taught by part-time faculty, found higher drop rates than those taught by tenured, non-tenured full-time faculty and by teaching assistants. They surmised this was due to part-time faculty’s lack of time to spend with students. This finding was consistent with work by Harrington and Schibik (2004) that used information from a single institution that reviewed persistence of first-term freshmen taught by part-time faculty. Students taught by part-time faculty had a 1.47 percent higher rate of not returning. These findings are contrasted with positive findings related to the use of non-tenured faculty. Cox et al. (2010) found that non-tenured faculty spend more substantive time with students than tenured faculty and focus more on teaching (Levin & Shaker, 2011). Faculty opinions and thoughts also seem to influence faculty-student interactions.

The last of the four areas of potential factors that seem to impact faculty-student interaction are the general beliefs and the interpersonal skills of faculty. Wilson et al. (1974) conducted a multi-institutional study that examined the impact that faculty make on students. The study asked senior students to identify the professor “who taught the most stimulating course” and professors to identify “outstanding teachers” among their colleagues. By cross-referencing responses, Wilson et al. (1974) was able to identify effective teachers. These teachers had an intense dedication to undergraduate teaching. Effective teachers would rather teach undergraduates than graduate students and would prefer to teach than to conduct research. He discovered the single most important difference between influential faculty and colleagues is the time spent interacting with students outside class.
Influential teachers are heavily interested in undergraduate teaching and this interest probably motivates them to make their courses interesting, to talk with students about issues which are important to them and to extend their conversations and interactions with students beyond the classroom (Gaff, 1973, p. 610).

Faculty with high levels of faculty-student interaction seem to enjoy the experience and obtain significant personal satisfaction. Snow (1973) categorized faculty members as high, medium and low faculty-student interactors. Those with high levels were found to have an “interactionalist” perception of their relationship with the student. This is contrasted to those with low levels that had a professional or perfunctory relationship. The interactionalist technique is described as follows.

Approaching the student with openness and flexibility, he takes an active role in making a meaningful relationship; he takes seriously the student’s emotional as well as his cognitive growth. If a particular meeting seems promising – if the teacher and student are able to talk about issues which contribute to the student’s growth – then the teacher will put a great deal of time into the interaction (Snow, 1973, p. 498).

Some faculty may view out-of-class interactions as the sole responsibility of student affairs personnel (Kuh et al., 1991), and faculty can differ in their opinions regarding the importance of faculty-student interaction (Golde & Pribbenow, 2000). Faculty with a strong commitment to teaching or those that embrace a student-centered approach appear to have higher levels of out-of-class faculty-student interactions (Cotten & Wilson, 2006; Einarson & Clarkberg, 2004; Golde & Pribbenow, 2000). In addition, Lillis (2011) found a positive relationship between faculty that exhibited high levels of emotional intelligence and faculty-student interaction and a student’s intent to remain in college. Teachers with strong interpersonal skills seem to also have higher levels of interaction (Cox et al., 2010; Einarson & Clarkberg, 2004; Wilson et al., 1974).
In-class faculty actions or behaviors may signal subtle intentions of the faculty members’ psychological availability (Wilson et al., 1974) and provide reinforcement for students to seek contact with faculty. However, Cox et al. (2010) found little support for a relationship between pedagogical practices and faculty-student interactions. In his study, he could not rule out the impact of subtle non-verbal indicators such as tone of voice, facial expressions, or the instructor’s level of class preparation as potential indicators. He also proposed that students predisposition to faculty-student contact might influence contact.

Faculty behaviors may not be the biggest predictors of their likelihood to engage students outside of class. Rather, it may be that the student side of the faculty-student interaction equation is actually the driving force. Perhaps students enter a class with a predisposition to either engage with instructors outside a class or to avoid such out-of-class contact (Einarson & Clarkberg, 2004, p. 786).

Other institutional issues might impact faculty-student involvement. These were identified by Kuh et al. (2006) in a review of the 2005 NSSE survey. He found that students involved in first-year seminars, those that ranked advising as good or excellent, students that participated in a freshman interest group, and those involved with faculty-student research were associated with higher levels of out-of-class interaction. Faculty members’ time demands, the specific institutional characteristics, faculty attitudes, and faculty interpersonal skill seem to be related to faculty-student interaction. These factors appear to impact the faculty-student relationship and student degree completion.

**Degree Completion**

Four and six-year college degree completion figures are utilized by state and federal governmental agencies, regional accrediting bodies, and private organizations for various purposes. Following passage of the 1995 Student Right-to-Know Act, institutions were required to publicly report graduation rates. The Act encouraged students, parents, institutions, and
others to compare institutional degree completion rates, with the assumption that colleges with higher graduation rates indicate greater quality than institutions with lower graduation rates (Astin, 2005). “At a minimum, prospective students are implicitly being encouraged to believe that their chances of completing college successfully are proportional to an institution’s degree completion rate: the higher the rate, the better their individual chances at that college or University” (Astin, 2005, p. 6). Some state agencies employ degree completion values as an accountability measure, and a few tie rates to higher educational funding. Regional college accrediting bodies and national college ranking systems use degree completion information as well. For example, *U.S. News and World Report* (2013) uses graduation performance and other information in a complex formula to rank institutions in various categories. Given the importance of four and six-year graduation information to these varied groups, higher education institutions monitor institutional rates. However, the true value of these statistics is questionable. Astin (2005) found that institutional graduation rates are simply a reflection of entry-level student characteristics like academic preparation and institutional factors such as selectivity. In a large multi-institutional study, he found over two thirds of the variation in four-year graduation reflected by freshman student and institutional characteristics (Astin, 2005). Additional broad areas impacting college degree completion include academic, demographic, and environmental predictors, and elements associated with the institution attended.

The first-year college student’s high school performance and faculty contact during college seem to be academic predictors of college graduation. The “academic intensity” (Adelman, 2006, p. xviii) of the high school curriculum and the final high school GPA (Astin, 2005; Astin & Oseguera, 2012; DeBrock, 2000) attained were positively related to degree completion. Astin (2005) found a small, independent relationship between students’ final high school GPA and four-year graduation (0.16) and a study conducted by Astin and Oseguera (2012) confirmed that high school grades are a predictor of college degree completion. The
same researchers found that entry-level students with a high school average of an A are four times more likely to complete the degree in four years than students with a C average (Astin & Oseguera, 2012). DeBrock (2000) “as cited in Nora and Crisp (2012)” also found that high school GPA exerted an impact on persistence beyond the first year of college. The positive nature of informal relationships between faculty and students and improved academic performance is demonstrated in several studies (Bean & Kuh, 1984; Lundberg & Schreiner, 2004; Pascarella, Terenzini, & Hibb, 1978; Ullah & Wilson, 2007). Faculty-student interaction seems to impact academic performance and subsequent degree completion. However, student pre-entry characteristics, especially academic ability, appear to play a role in determining student academic performance in college (Dika, 2012). This likely impacts the student’s level of faculty-student interaction as Kuh and Hu (2001, p. 327) describe:

Students who were better prepared academically and who devoted more effort to their studies interacted more frequently with faculty members. It is not clear whether this is because such students were more assertive in seeking out faculty members or whether faculty members invited students who performed well academically to make contact (e.g., writing laudatory comments in the margins of a student’s paper suggesting they talk further about the topic).

A study by Cole (2010) reported gains in college GPA associated with faculty-student contact. While controlling for pre-entry characteristics and academic achievement, findings suggest that non-classroom contact may have an influence on students’ academic achievement (Pascarella et al., 1978).

Demographic characteristics associated with college degree completion include those of gender and race. A shift from predominately male to female graduates occurred in 2001. Women now earn a majority of college bachelor’s degrees (Mortenson, 2003) and are more likely than men to complete the degree (Astin & Oseguera, 2012). For all institutions, of the
FTIC cohort starting school in 2004 and graduating from the same institution four years later, 42.1 percent of the women and 32.9 percent of the men graduated in four years. (Synder & Dillow, 2012). For all institutions, of the FTIC cohort starting school in 2004, 37.0 percent of all students’ graduated in four-years from the same institution at which they started. Of this group 41 percent of the Caucasian students, 20.4 percent of the African-American students, 27.9 percent of the Hispanic students, 45.0 percent of the Asian/Pacific Islander students and 21.8 percent of the American Indian or Alaska Natives students graduated in four years. The percentage of minority full-time college students has been increasing. Between 1976 and 2010, the percentage of Hispanics rose from 3 percent to 13 percent, Asian/Pacific Islander enrollments increased from 2 percent to 6 percent, and African-American student enrollment increased from 9 to 14 percent (Synder & Dillow, 2012).

A college environmental factor that appears to affect four-year degree completion is the student’s choice of major and the total number of credit hours required to complete the degree. Smart, Feldman, and Ethington (2000) in their book on academic disciplines argues that understanding academic disciplines is important to understanding college persistence. Thompson (2003, p. 409) explains the importance by stating that “the potential influence of academic departments on patterns of change and stability of college students is assumed to be carried out in large part through student interactions with departmental faculty.” Holland (1973) developed the vocational choice theory that helped to explain how individuals make decisions regarding work environments. It describes how an individual’s personality traits fit within a specific environment. Holland (1973) describes six personality and six environment types. Congruence between the two categories results in satisfaction and achievement. The personality and environment types are identically named. These types are realistic, investigative, artistic, social, enterprising, and conventional. Smart et al. (2000) adapted Holland’s vocational choice theory to study higher education persistence and academic
disciplines. He stated three suppositions regarding this adaptation. First, students select educational environments well matched with their specific personality type. Second, academic environments act as detractors or promoters of student interests or abilities. Third, students thrive in academic environs that match their personality type. Academic disciplines seem to impact persistence and student change. The influence of academic disciplines on student persistence is likely due to the increasing size of higher educational institutions. Large institutions make it difficult for students to connect or find a “home” (Smart et al., 2000). The smaller academic departments provide students with a structure and faculty to which they can easily connect. Disciplines change students in large part through interactions with discipline faculty (Smart et al., 2000).

Department faculty are a potentially important influence on students because they possess powerful normative and utilitarian sanctions for the differential socialization of students; these sanctions are manifested through the expressed goals of faculty for undergraduate education and through the ability of faculty to reward students differently for performance by the assignment of grades and the encouragement of interaction.

From Vreeland and Bidwell (1966) as cited in Smart et al. (2000, p. 13).

Weidman (1989) developed an undergraduate socialization model that incorporated academic disciplines in studying college student satisfaction and change. He found the academic department “a particularly important locus of both faculty and peer influences on students… and a potentially powerful source of normative influence on student majors” (Weidman, 1989, p. 315). The connection between Holland’s theory and academic disciplines was demonstrated by a number of studies conducted by John C. Smart. Holland (1997) maintained his theory is appropriate to an academic environment, and Smart and McLaughlin (1974) found the goals of academic departments consistent with Holland’s six categories of environments. Thompson and Smart (1999) found that faculty in the investigative, artistic,
social, and enterprising environments punished and rewarded students differently for demonstrating various student competencies. Smart et al. (2000) “in a study designed to test aspects of Holland’s vocational choice theory in higher education” provided a basis for categorizing college majors into Holland’s six environmental categories. Table 1 shows the majors and associated Holland categories. The classification system is based upon The College Major Finder (Rosen, Holmberg, & Holland, 1989) that cross lists academic majors with Holland’s six environments. Kim and Sax (2011) “in a large single institutional study involving 43,014 students that studied the relationship between faculty-student interaction and college majors” found that academic skill improvement varied significantly by the student’s academic major. Astin (2005) found that majors displaying a negative impact on degree completion include allied health professions (-0.04), fine arts (-0.03) and engineering (-0.10). Four-year degree completion is also shaped by the total number of credit hours required for the degree. In Florida, because of legislation passed in 1995 that regulated undergraduate degree program length, most programs were set at 120 total credit hours. In the Florida University system, only about 14 percent (121 of 862) of the total degrees offered are over this established limit (Florida, 2013). The programs range from a high of 159 hours in architecture to a low of 124 hours in education and some health programs (Florida, 2013). Most programs over 120 hours are clustered within engineering majors. Even though some programs are unable to be completed in four years, institutions are nonetheless required to submit four and six-year graduation rates to various organizations and governmental bodies.

Institutional characteristics, such as institutional size, type of institution, and the institutional quality influence college undergraduate degree completion. (Astin, 1993) found a negative relationship between institutional size and educational attainment. However, additional research found no such relationship (Pascarella & Terenzini, 2005). Institutional size seems to be negatively related to social involvement. Institutional size is indirectly related to student
degree completion (Pascarella & Terenzini, 2005). The type of institution attended likely plays a minor role in degree completion. Pascarella and Terenzini (2005, p. 386) found that “the type of institutional control probably has little net effect on students’ chances of completing a bachelor’s degree within four years.” The effect of institutional quality or selectivity on graduation is likely minimal and is impacted by other institutional characteristics, such as faculty-student ratios, faculty quality, and academic spending (Pascarella & Terenzini, 2005).
<table>
<thead>
<tr>
<th>REALISTIC</th>
<th>ARTISTIC</th>
<th>ENTERPRISING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering</td>
<td>Arts</td>
<td>Journalism</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>English</td>
<td>Business Adm.</td>
</tr>
<tr>
<td>Marine Science</td>
<td>Language/Literature</td>
<td>Marketing</td>
</tr>
<tr>
<td>Drafting/Design</td>
<td>Music</td>
<td>Management</td>
</tr>
<tr>
<td>Military Science</td>
<td>Speech</td>
<td>Business Education</td>
</tr>
<tr>
<td>Theater/Drama</td>
<td>Industrial Engineering</td>
<td>Communications, General</td>
</tr>
<tr>
<td><strong>INVESTIGATIVE</strong></td>
<td>Music/Art Education</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Biology</td>
<td>Architecture</td>
<td></td>
</tr>
<tr>
<td>Biochemistry/Biophysics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine (life) Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Biological Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aeronautical/Astronautical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td></td>
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<tr>
<td>Astronomy</td>
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<tr>
<td>Atmospheric Science</td>
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<td>Chemistry</td>
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<tr>
<td>Earth Science</td>
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<td></td>
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<tr>
<td>Other Physical Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premedical/Predental/Preveterinary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthropology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td></td>
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<td>Ethnic Studies</td>
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<tr>
<td>Geography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Smart et al. (2000, pp. 59-60)
CHAPTER THREE:

METHODS

The purpose of the study was to investigate the extent to which FTIC, prior-to-matriculation student expectations of faculty-student interaction are related to four-year degree completion. Additionally, the study examined the relationship between the student characteristics of gender, race and high school GPA with expected faculty-student interaction and degree completion. This chapter includes a description of the study design, instrumentation used, validity and reliability of the instrument, and a description of the participants and methods of statistical analyses.

The data used in the study are secondary data obtained during the summer of 2008 administration of the CSXQ to incoming FTIC, prior-to-matriculation freshmen. Students’ survey responses were paired with their university identification numbers, making it possible to identify demographic information needed for the study.

The data and methods are selected to answer the following research questions.

Research Questions

1. What is the relationship between first-time-in college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

2. What is the relationship between first-time-in college (FTIC), prior-to-matriculation students’ characteristics of gender, race, high school GPA,
expectation of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

3. What is the relationship between first-time-in college (FTIC), prior-to-matriculation students' expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and students' Holland major classification prior-to-matriculation?

**Research Design**

The study is a quantitative study using secondary data to examine the relationships between a number of student characteristics and degree completion in four years. Creswell (2003) maintained the match between research and method should be dependent upon the problem, the researcher preference, and the audience which the research will inform. The questions presented are appropriate for a quantitative approach. “If the problem is identifying factors that influence an outcome, the utility of an intervention, or understanding the best predictors of outcomes, then a quantitative approach is best” (Creswell, 2003, p. 23).

Since graduation is a dichotomous dependent variable, the research questions will be analyzed using a logistic regression.

**Population and Sample**

The study used information collected from a large public research university located in the Tampa Bay area. The University of South Florida is a system of three accredited institutions with a total fall 2008 campus enrollment of 46,334 (USF, 2008b) and is classified as a “research university, very high research activity” Carnegie classification. The Tampa campus was the campus with the largest enrollment in the system - at 39,263 and is where that sample was collected. Of this enrollment, 29,492 were undergraduates, 8,101 were graduate students, and
1,670 were non-degree seeking students (USF, 2008b). The study focused on the first-time-in-college (FTIC) population of 4,110 (USF, 2008b) students.

USF is located in a large metropolitan area of west central Florida in Hillsborough County and serves a three-county regional population of over two million people. The campus encompasses a 1,748-acre tract located just northeast of Tampa, with over 236 buildings housing academic facilities, residence halls, and recreational facilities. The University employs more than 1,800 faculty - with a student to faculty ratio of 19:1 (USF, 2008a). Over 219 degree programs are offered. Included in the offerings are 89 bachelor’s degrees, 21 master’s degrees, 2 educational specialist’s degrees, 36 doctoral degrees and a first professional degree (MD).

The CSXQ was administered to FTIC, USF college freshmen enrolled in new student orientation sessions held during the summer of 2008. The population for this study is limited to students who were 17 or 18 years old. The CSXQ was administered the first day of the mandatory university orientation program. A total of 4,100 students completed the survey in about a half-hour. Survey administrators requested students to provide their university identification number so survey data could be matched with university academic information. Table 2 provides demographic information for the FTIC population admitted in the summer and fall of 2008.

Permission to conduct research with human subjects was requested from the University’s Institutional Review Board. The research proposal was approved as an exempt status. The data set was requested from the university’s Office of Student Affairs according to their policy on data sharing. Confidentiality of student information was maintained by the University’s removal of student identification numbers from the data set prior to the researcher’s receipt of the information. The researcher maintained the data set in a secure manner throughout the research.
Table 2: Demographic Totals First Time in College (FTIC)

<table>
<thead>
<tr>
<th></th>
<th>Summer 2008</th>
<th>Fall 2008</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>279</td>
<td>1,537</td>
<td>1,816</td>
<td>44%</td>
</tr>
<tr>
<td>Females</td>
<td>375</td>
<td>1,918</td>
<td>2,193</td>
<td>56%</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>655</td>
<td>3,455</td>
<td>4,110</td>
<td>100%</td>
</tr>
<tr>
<td>Ethnic Class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>36</td>
<td>247</td>
<td>283</td>
<td>6.9%</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>201</td>
<td>236</td>
<td>437</td>
<td>10.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>111</td>
<td>547</td>
<td>658</td>
<td>16.1%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>4</td>
<td>11</td>
<td>15</td>
<td>0.4%</td>
</tr>
<tr>
<td>Race/ethnicity unknown</td>
<td>9</td>
<td>70</td>
<td>79</td>
<td>1.9%</td>
</tr>
<tr>
<td>Non Resident Alien</td>
<td>8</td>
<td>34</td>
<td>42</td>
<td>1.0%</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>286</td>
<td>2,310</td>
<td>2,596</td>
<td>63.1%</td>
</tr>
<tr>
<td>Total</td>
<td>655</td>
<td>3,455</td>
<td>4,110</td>
<td>100%</td>
</tr>
</tbody>
</table>

Variables

Independent Variables

Gender – Dummy -2; F.M reference female; nominal
Race – Dummy -4; A,B, H,W; reference Caucasian; nominal
HS GPA at high school graduation – 2.0-4.95; Scale
Faculty Student Interaction – measured by the total score on seven “Experiences with Faculty” items on the CSXQ

Dependent Variables

4-year USF graduation status – Dummy-2; N,Y reference yes; nominal
Discipline – measured by the student’s declared major prior-to-matriculation. The item is categorized into one of six Holland environmental categories: investigative, artistic, social, enterprising, conventional, and realistic. Dummy-6; I, A, S, E, C, R. reference Investigative; nominal.
Instruments and Measures

College Student Expectations Questionnaire (CSXQ). USF, like all higher education institutions, is under constant pressure to assess, evaluate, and improve services and programs. Survey research is an economical and effective tool for institutions to conduct internal research and provide information for reflection and improvement. Well thought-out surveys can provide information related to “the student experience that other sources of information cannot, such as estimates of one’s ability to interact effectively with others on an individual basis or in small groups, and the degree to which one’s values and ethics have developed since starting college” (Carini et al., 2006, p. 2).

Student self-reporting of information is valid and reliable under the following circumstances: “(1) the information requested is known to the respondents, (2) the questions are phrased clearly and unambiguously, (3) the questions refer to recent activities, (4) the respondents think the questions merit a thoughtful response, (5) the information requested is potentially verifiable, and (6) the question asks for information that is known to those answering the questions and does not threaten, embarrass, or violate their privacy or encourage the respondent to respond in socially undesirable ways” (Carini et al., 2006, p. 2).

The CSXQ is a nationally administered instrument designed to assess newly enrolled undergraduate student expectations for college and was first published in 1977 (Appendix A). It has been used at over 60 institutions and administered to over 61,000 students (Butler, 2011). The College Student Expectation Questionnaire (CSXQ) used for this research is a second-edition instrument published in 1999 and was developed from the College Level Experiences Questionnaire (CSEQ). The questionnaire was developed by Dr. C. Robert Pace and Dr. George C. Kuh at the Center for Postsecondary Research of Indiana University, Bloomington, Indiana, and is available as a computer-administered or a paper-and-pencil instrument. The
The instrument used in this research is a paper-and-pencil booklet consisting of four double-sided pages.

The CSXQ consists of 110 items that generally utilize a Likert-type scale to assess student expectations in the following 11 areas: library and information technology, experiences with faculty, course learning, writing, campus facilities, clubs and organizations and service projects, student acquaintances, scientific and quantitative experiences, topics of conversations, information in conversations, and amount of reading and writing. The final section of the CSXQ collects demographic data, including age, gender, transfer status, living arrangements, expectation of grades, educational attainment of parents, graduate school attendance, number of credit hours enrolled, academic major, participation in out-of-class activities, hours of employment, college expenses, and race/ethnic identification. Students were asked to provide their student ID numbers so the survey could be tied to a university database of individual academic records.

The study uses self-reported information collected from the “Experiences with Faculty” section and the survey items collecting background and demographic data. The “Experiences with Faculty” section includes items assessing students’ anticipated levels of contact with faculty. Responses use a Likert ranking scale scored as (4) very often (3) often (2) occasionally and (1) never. The sum of a student’s score on the measures determines the student’s expectation of faculty-student interaction score (F-S_INTER). Scores range from 7-28 on the seven items. The items for this section of the CSXQ are listed here:

“During the coming year in college, how often do you expect to do the following?”

XQ_1 Ask your instructor for information related to a course you are taking (grades, make-up work, assignments, etc.).

XQ_2 Discuss your academic program or course selection with a faculty member.

XQ_3 Discuss ideas for a term paper or other class project with a faculty member.
XQ_4 Discuss your career plans and ambitions with a faculty member.

XQ_5 Socialize with a faculty member outside the classroom (have a snack or soft drink, etc.)

XQ_6 Ask your instructor for comments and criticisms about your academic performance.

XQ_7 Work with a faculty member on a research project.

Reliability and Validity

The psychometric properties of the “Experiences with Faculty” scale are sound. This is shown by the tabled Cronbach’s Alpha scores in Table 3. Cronbach’s Alpha is a measure of the reliability, or the internal consistency, of items constituting an index or a factor (Vogt, 1999). Cronbach’s Alpha scores range from zero to one, and a score greater than .70 suggests that items are measuring the same factor or are interrelated (Nunnaly, 1978). The Center for the Study of Postsecondary Research nationally normed data in the table are based upon data analysis of over 50,000 administrations of the survey. The scores range from $r=.23$ to $r=.58$ and a Cronbach’s Alpha level of .84.

Table 3: Cronbach’s Alpha for Experiences with Faculty Scale (National)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>XQ_1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_2</td>
<td>.58</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>XQ_3</td>
<td>.46</td>
<td>.56</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_4</td>
<td>.39</td>
<td>.56</td>
<td>.57</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_5</td>
<td>.24</td>
<td>.34</td>
<td>.36</td>
<td>.43</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_6</td>
<td>.40</td>
<td>.46</td>
<td>.49</td>
<td>.48</td>
<td>.41</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>XQ_7</td>
<td>.30</td>
<td>.38</td>
<td>.44</td>
<td>.41</td>
<td>.43</td>
<td>.48</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Cronbach’s $\alpha = .84$

(Center for the Study of Postsecondary Research, Bloomington, 2010)

The reliability of the study for the 2008 administration was established. The scores from the “Experiences with Faculty” section from the current study, as administered in 2008, are listed in
Table 4. The Cronbach's α was .82 and the factor loadings ranged from $r = .20$ to $r = .55$.

Cronbach's α scores greater than .70 indicate the factors are measuring the same factor or are interrelated. For the 2008 administration the QSXQ appears to be a reliable instrument.

**Table 4: Cronbach's Alpha for 2008 CSXQ Administration**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>XQ_1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_2</td>
<td>.54</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_3</td>
<td>.40</td>
<td>.53</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_4</td>
<td>.36</td>
<td>.52</td>
<td>.55</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_5</td>
<td>.20</td>
<td>.27</td>
<td>.34</td>
<td>.38</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XQ_6</td>
<td>.40</td>
<td>.42</td>
<td>.44</td>
<td>.43</td>
<td>.36</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>XQ_7</td>
<td>.26</td>
<td>.34</td>
<td>.40</td>
<td>.37</td>
<td>.42</td>
<td>.42</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Cronbach's α = .82

**Data Collection**

The administration procedures for the CSXQ vary slightly from institution to institution. Some institutions administer the instrument during orientation sessions prior to the students' attending class, while some schools administer it during the early stages of freshman general education courses or during a freshmen experience course. The study uses secondary data collected by the university during 24 FTIC orientation sessions held during the summer of 2008. The survey was administered during the first day of the mandatory orientation programs. The administration occurred before students' exposure to sessions describing the academic expectations of the university.

**Data Analysis**

Descriptive statistical data, including mean, median, variability, standard deviation, range, skewness, and kurtosis are reported for the continuous variables in the study. Statistical Program for the Social Sciences 21 (SPSS 21) was used for data analysis. Table 5, Table 6 and...
Table 7 provide a description of the variables related to the research questions and the specific statistical procedures used for analysis.

**Table 5: Data Analysis for Research Question One**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Variables</th>
<th>Statistical Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 1</td>
<td>GRADUATION (DV)</td>
<td>Binary Logistic Regression</td>
</tr>
<tr>
<td></td>
<td>FS_INTER (IV)</td>
<td></td>
</tr>
</tbody>
</table>

RQ – Research Question 1, GRADUATION- college completion in four years, FS-INTER – level of expected faculty-student interaction, DV- dependent variable, IV- independent variable.

**Table 6: Data Analysis for Research Question Two**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Variables</th>
<th>Statistical Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 2</td>
<td>GRADUATION (DV)</td>
<td>Binary Logistic Regression</td>
</tr>
<tr>
<td></td>
<td>FS_INTER (IV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GENDER (IV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RACE (IV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HS GPA (IV)</td>
<td></td>
</tr>
</tbody>
</table>

RQ 2- Research Question 2, GRADUATION- college completion in four years, FS_INTER – level of expected faculty-student interaction, GENDER – gender, RACE – Ethnicity, HS GPA- high school GPA on admission to the university, DV- dependent variable, IV- independent variable.

**Table 7: Data Analysis for Research Question Three**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Variables</th>
<th>Statistical Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ3</td>
<td>DISCIPLINE (DV)</td>
<td>Multinomial Logistic Regression</td>
</tr>
<tr>
<td></td>
<td>FS_INTER (IV)</td>
<td></td>
</tr>
</tbody>
</table>

RQ 3 –Research Question 3, DISCIPLINE – Holland’s college discipline environmental category, FS_INTER – level of expected faculty-student interaction, DV- dependent variable, IV- independent variable.
CHAPTER FOUR:

RESULTS

This research examined the relationship between FTIC, prior-to-matriculation college student expectations for faculty-student interaction and four-year degree completion. This chapter first presents an overview of the data set that includes descriptive statistics for each variable and is followed by the findings for the three research questions. Question one examines the relationship between FTIC, prior-to-matriculation level of expected faculty-student interaction score and college completion in four years. Question two examines the relationship between FTIC, prior-to-matriculation student variables of gender, race, high school GPA, and level of expected faculty-student interaction score as these variables relate to four-year degree completion. Question three reviews the relationship between FTIC, prior-to-matriculation level of expected faculty-student interaction score and the FTIC, prior-to-matriculation student’s major as assigned to one of Holland’s categories.

The quantitative study used binary and multinomial logistic regression to explore the research questions. Four basic steps were used to conduct the analysis.

1. Data was reviewed for errors and prepared for statistical analysis.
2. Descriptive statistics were prepared and preliminary tests performed.
3. Cross tabulations of cell frequencies were conducted to ensure adequate numbers of data in cells.
4. Binary or multinomial regressions were conducted.
The descriptive statistics for the categorical and continuous variables and results of the logistic regressions for each research question are described in the following discussion.

The initial data set consisted of 4,110 FTIC, prior-to-matriculation students who attended a freshman orientation session and took the CSXQ in the summer of 2008. Of these students, 3,581 provided their institutional identification number so the CSXQ findings could be matched with the university data base. All students in the data set were 19 or 20 years of age. (Herreid). It is unknown how many college credit hours FTIC students entered with due to tracking problems in the institutional data base. Personal correspondence from the university data base administrator states that “not many FTIC students were coming in with massive numbers of credits” (Herreid). A total of 437 students majoring in engineering were omitted from the study because the degree programs are five-year programs (USF, C. o. E., 2013) and this research focused on four-year completion. Removing these students reduced the data set to 3,144 FTIC, prior-to-matriculation students.

Of the 3,144 students in the final data set, 1,938, (61.6%) were female and 1,206 (38.4%) were male. These percentages were similar to university-wide figures for all undergraduates enrolled in 2008. Of the 29,492 students enrolled, 16,746 were female (56.8%) and 12,739 (43.2%) were male (USF, 2008b). Table 8 provides the distribution by gender for the sample.

<table>
<thead>
<tr>
<th>Table 8: Frequency Distribution for Females and Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(N=3144)
Ethnic representation in the data set included 222 Asian (7.1%), 312 African-American (9.9%) 513 Hispanic (16.3%), 2,034 Caucasian (64.7%) and 63 (2.0%) students that did not report a racial distinction. These are listed in Table 9.

Table 9: Frequency Distribution for Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>222</td>
<td>7.1</td>
</tr>
<tr>
<td>African-American</td>
<td>312</td>
<td>9.9</td>
</tr>
<tr>
<td>Hispanic</td>
<td>513</td>
<td>16.3</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2034</td>
<td>64.7</td>
</tr>
<tr>
<td>Missing</td>
<td>63</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(Student placement in one of Holland’s categories was conducted by assigning a FTIC student’s prior-to-matriculation major into one of the six Holland categories. Table 1: Academic Majors and Holland’s Environments provided the framework for categorization. The special categories are as follows: realistic, investigative, artistic, social, enterprising, conventional and “not in Holland.” Not all majors were placed in a category. The categories of conventional and realistic were unused because only a few student majors fit these categories. There were 567 students (18.0%) who did not declare majors, and an additional 221 (7%) students were enrolled in majors that were not clearly defined in the table and were therefore unclassified. For example, athletic training is not specified in the table; therefore, this major was not assigned a category. Programs in secondary education were also omitted from classification. These distributions are reported in Table 10.

Student distributions for degree completion are reflected in Table 11. Forty-one percent of the students completed their degrees in four years, and fifty-nine percent did not complete their degrees in that time period. This four-year graduation rate for the sample is very close to the 38.6 percent rate published for the 2008 cohort of total university undergraduates (USF, 2013). The continuous variables of high school GPA and level of expected faculty-student)
Table 10: Frequency Distribution of Holland’s College Environmental Categories

<table>
<thead>
<tr>
<th>Holland’s Class</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artistic</td>
<td>243</td>
<td>7.7</td>
</tr>
<tr>
<td>Enterprising</td>
<td>526</td>
<td>16.7</td>
</tr>
<tr>
<td>Investigative</td>
<td>932</td>
<td>29.6</td>
</tr>
<tr>
<td>Social</td>
<td>655</td>
<td>20.0</td>
</tr>
<tr>
<td>Unclassified</td>
<td>221</td>
<td>7.0</td>
</tr>
<tr>
<td>Undeclared Major</td>
<td>567</td>
<td>18.0</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(N=3144)

Table 11: Frequency Distribution of Four-Year Degree Completion Rates

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated</td>
<td>1293</td>
</tr>
<tr>
<td>Did not graduate</td>
<td>1851</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
</tr>
</tbody>
</table>

(N=3144)

interaction scores are described next.

The mean high school GPA for the sample was 3.70, with a standard deviation of .408 and a range of 2.4 to 4.8. The mean female high school GPA was 3.75, with a standard deviation of .396. High school GPA is reasonably normally distributed with a kurtosis of -.325 and a skewness of .001. Males had a lower mean GPA of 3.60 and a standard deviation of .409. The highest mean high school GPA by ethnic group was for Asians at 3.84, with a standard deviation of .421, and the lowest was for African-Americans with a mean of 3.45, with a standard deviation of .428. Students assigned to a Holland category had an average high school GPA of 3.69, with a standard deviation of .408. The highest mean high school GPA was for students classified in the Holland investigative category, who had an average high school GPA of 3.80 and a standard deviation of .413. The Holland category with the lowest high school GPA was the enterprising category with a mean of 3.60, with a standard deviation of 0.412.
Students completing college in four years had a mean high school GPA of 3.80, with a standard deviation of .415, and students who did not complete in four years had a GPA of 3.62 and a standard deviation of .386. Table 12 summarizes these findings.

For gender and college completion in four years, 45 percent of females and 35 percent of males completed college in four years. By ethnic group, 46 percent of Asians, 35 percent of African-Americans, 43 percent of Hispanics, 41 percent of Caucasians and 41 percent of those who did not report an ethnic representation graduated in four years. Table 13 provides this information.

Table 12: Descriptive Statistics for High School GPA by Gender, Ethnicity, Holland's Class and Completion

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
<th>Mean</th>
<th>S. D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1938</td>
<td>61.6</td>
<td>3.75</td>
<td>.396</td>
<td>2.6 - 4.8</td>
</tr>
<tr>
<td>Male</td>
<td>1206</td>
<td>38.4</td>
<td>3.60</td>
<td>.409</td>
<td>2.4 - 4.7</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
<td>3.70</td>
<td>.408</td>
<td>2.5 - 4.8</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>222</td>
<td>7.1</td>
<td>3.84</td>
<td>.421</td>
<td>2.7 - 4.8</td>
</tr>
<tr>
<td>Afr.-Am.</td>
<td>312</td>
<td>9.9</td>
<td>3.45</td>
<td>.428</td>
<td>2.5 - 4.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>513</td>
<td>16.3</td>
<td>3.70</td>
<td>.388</td>
<td>2.6 - 4.8</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2034</td>
<td>64.7</td>
<td>3.72</td>
<td>.394</td>
<td>2.5 - 4.8</td>
</tr>
<tr>
<td>Not reported</td>
<td>63</td>
<td>2.0</td>
<td>3.72</td>
<td>.421</td>
<td>2.7 - 4.8</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
<td>3.70</td>
<td>.408</td>
<td>2.4 - 4.8</td>
</tr>
<tr>
<td><strong>Holland's Class</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artistic</td>
<td>243</td>
<td>7.7</td>
<td>3.69</td>
<td>.389</td>
<td>2.7 - 4.7</td>
</tr>
<tr>
<td>Enterprising</td>
<td>526</td>
<td>16.7</td>
<td>3.60</td>
<td>.412</td>
<td>2.4 - 4.8</td>
</tr>
<tr>
<td>Investigative</td>
<td>932</td>
<td>29.6</td>
<td>3.80</td>
<td>.413</td>
<td>2.6 - 4.8</td>
</tr>
<tr>
<td>Social</td>
<td>655</td>
<td>20.0</td>
<td>3.65</td>
<td>.383</td>
<td>2.5 - 4.6</td>
</tr>
<tr>
<td>Not classified</td>
<td>788</td>
<td>25.2</td>
<td>3.70</td>
<td>.404</td>
<td>2.6 - 4.8</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
<td>3.69</td>
<td>.408</td>
<td>2.5 - 4.8</td>
</tr>
<tr>
<td><strong>Completion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1851</td>
<td>58.9</td>
<td>3.62</td>
<td>.386</td>
<td>2.4 - 4.8</td>
</tr>
<tr>
<td>Yes</td>
<td>1293</td>
<td>41.1</td>
<td>3.80</td>
<td>.416</td>
<td>2.5 - 4.8</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100.0</td>
<td>3.70</td>
<td>.408</td>
<td>2.4 - 4.8</td>
</tr>
</tbody>
</table>

(N=3144), Afr.-Am. – African-American
Table 13: Student Four-Year Completion Status by Gender and Ethnic Grouping

<table>
<thead>
<tr>
<th></th>
<th>Four Year Completion</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>Y</td>
<td>Total</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>Count</td>
<td>1066</td>
<td>872</td>
<td>1938</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>55%</td>
<td>45%</td>
<td>100%</td>
</tr>
<tr>
<td>Males</td>
<td>Count</td>
<td>785</td>
<td>421</td>
<td>1206</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>65%</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>1851</td>
<td>1293</td>
<td>3144</td>
</tr>
<tr>
<td></td>
<td>% of total</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
</tr>
<tr>
<td>Ethnic Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>Count</td>
<td>119</td>
<td>103</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>54%</td>
<td>46%</td>
<td>100%</td>
</tr>
<tr>
<td>Afr. Am.</td>
<td>Count</td>
<td>202</td>
<td>110</td>
<td>312</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>65%</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Count</td>
<td>291</td>
<td>222</td>
<td>513</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>57%</td>
<td>43%</td>
<td>100%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Count</td>
<td>1202</td>
<td>832</td>
<td>2034</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
</tr>
<tr>
<td>No grouping</td>
<td>Count</td>
<td>37</td>
<td>26</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>% within completion</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>1851</td>
<td>1293</td>
<td>3144</td>
</tr>
<tr>
<td></td>
<td>% of total</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
</tr>
</tbody>
</table>


The level of expected faculty-student interaction scores is determined by the sum of FTIC, prior-to-matriculation student responses to seven items on the CSXQ. The item responses range from very often (4) to never (1), and the total scores range from 28-7. The mean level of expected faculty-student interaction score averaged 18.48, with a standard deviation of 3.794 and a range of 7 to 28. The faculty-student interaction score was reasonably normally distributed with skewness of .216 kurtosis of -.383. The female mean faculty-student expectations score was 18.42, with a standard deviation of 3.81, and male mean scores were 18.59, with a standard deviation of 3.71. African-American students had the highest mean faculty-student expectation score at 19.23, with a standard deviation of 4.01, and Caucasian students had the lowest mean value of 18.25 and a standard deviation of 3.67. The Holland
category with the highest faculty-student expectation mean score was the investigative category at 18.95, with a standard deviation of 3.91. The Holland category with the lowest faculty-student expectation mean was the artistic category at 18.20, with a standard deviation of 3.90. Students who graduated in four years had a mean level of expected faculty-student interaction score of 18.56 with a standard deviation of 3.78. Students who did not graduate in four years had a mean score of 18.43, with a standard deviation of 3.78. See Table 14 for the tabled values.

**Table 14: Descriptive Statistics for Level of Expected Faculty-Student Interaction by Gender, Ethnicity, Holland Class and College Completion.**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
<th>Mean</th>
<th>S. D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1938</td>
<td>61.6</td>
<td>18.42</td>
<td>3.81</td>
<td>10-28</td>
</tr>
<tr>
<td>Male</td>
<td>1206</td>
<td>38.4</td>
<td>18.59</td>
<td>3.71</td>
<td>10-28</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100</td>
<td>18.48</td>
<td>3.78</td>
<td>10-28</td>
</tr>
<tr>
<td><strong>Ethnic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>222</td>
<td>7.1</td>
<td>18.68</td>
<td>3.95</td>
<td>10-28</td>
</tr>
<tr>
<td>Afr.-Am.</td>
<td>312</td>
<td>9.9</td>
<td>19.23</td>
<td>4.01</td>
<td>10-28</td>
</tr>
<tr>
<td>Hispanic</td>
<td>513</td>
<td>16.3</td>
<td>18.85</td>
<td>3.92</td>
<td>10-28</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2034</td>
<td>64.7</td>
<td>18.25</td>
<td>3.67</td>
<td>10-28</td>
</tr>
<tr>
<td>Not reported</td>
<td>63</td>
<td>2.0</td>
<td>18.75</td>
<td>3.90</td>
<td>11-28</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100</td>
<td>18.48</td>
<td>3.78</td>
<td>10-28</td>
</tr>
<tr>
<td><strong>Holland Class</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artistic</td>
<td>243</td>
<td>7.7</td>
<td>18.20</td>
<td>3.90</td>
<td>10-28</td>
</tr>
<tr>
<td>Enterprising</td>
<td>526</td>
<td>16.7</td>
<td>18.42</td>
<td>3.52</td>
<td>10-28</td>
</tr>
<tr>
<td>Investigative</td>
<td>932</td>
<td>29.6</td>
<td>18.95</td>
<td>3.91</td>
<td>10-28</td>
</tr>
<tr>
<td>Social</td>
<td>655</td>
<td>20.0</td>
<td>18.44</td>
<td>3.84</td>
<td>10-28</td>
</tr>
<tr>
<td>Unclassified</td>
<td>788</td>
<td>25.1</td>
<td>18.10</td>
<td>3.65</td>
<td>10-28</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100</td>
<td>18.48</td>
<td>3.78</td>
<td>10-28</td>
</tr>
<tr>
<td><strong>Completion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1851</td>
<td>58.8</td>
<td>18.43</td>
<td>3.78</td>
<td>10-28</td>
</tr>
<tr>
<td>Yes</td>
<td>1293</td>
<td>41.2</td>
<td>18.56</td>
<td>3.78</td>
<td>10-28</td>
</tr>
<tr>
<td>Total</td>
<td>3144</td>
<td>100</td>
<td>18.48</td>
<td>3.78</td>
<td>10-28</td>
</tr>
</tbody>
</table>

(N=3144), Afr.-Am. – African-American
Research Question One

The first research question examined was: What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

A binary logistic regression was calculated to determine the relationship between the continuous variable of FTIC, prior-to-matriculation expected level of faculty-student interaction score and the dependent categorical variable of college completion in four years. Logistic regression assumes linearity between continuous predictor variables and the logit of the dependent categorical variable. This assumption was tested by reviewing the interaction between the predictor and the log transformation of the same variable (Hosmer & Lemeshow, 1989) The assumption of the linearity of the logit was met for the predictor. The second assumption met was the independence of error. This requires that data cases not be related. For example, each value of the dependent variable must be unique. This property holds true for the data set as a whole. Multicollinearity, or predictors that are highly correlated to one another, is an additional assumption that is met, since in this model, there is only one predictor. A final assumption of logistic regression is that “each cell should contain expected frequencies of greater than one, and no more than 20 percent are less than five” (Field, 2009, p. 274). Incomplete information from the predictors can result if this is not followed. A crosstab table showed that no more than 20 percent are less than five.

A binary logistic regression was calculated to determine the relationship between students’ scores on expectations for faculty-student interaction and college completion in four years. The tabled findings in Table 15 indicated there is no statistically significant (p.>05) relationship between student expectations for faculty-student interaction and four-year college completion.
Table 15: Logistic Regression of Levels of Expected Faculty-Student Interaction and Four-Year College Completion

<table>
<thead>
<tr>
<th></th>
<th>B (SE)</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95.0% C.I. for Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEF-SIS</td>
<td>0.01 (0.01)</td>
<td>0.85</td>
<td>1</td>
<td>.357</td>
<td>1.01</td>
<td>0.99 - 1.03</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.52 (0.18)</td>
<td>8.29</td>
<td>1</td>
<td>.004</td>
<td>0.59</td>
<td></td>
</tr>
</tbody>
</table>

(N=3144), LEF-SIS – Level of Expected Faculty-Student Interaction Score

To confirm the findings, an independent samples t-test was conducted to compare the levels of expected faculty-student interaction scores for graduates and non-graduates. The mean difference in scores is not different from zero in scores for graduates (M=18.56, SD=3.78) and non-graduates (M=18.43, SD=3.78); t (3163) = -0.92, p = .36, two-tailed). The magnitude of the difference in the two means (mean difference = 0.13, 95% CI: -0.37 – 0.14) was very small (Cohen’s d = .034).

Research Question Two

The second research question was: What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ characteristics of gender, race, high school GPA, expectation of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

A binary logistic regression was used to evaluate the relationship between the independent variables of gender, ethnicity, level of expected faculty-student interaction score, high school GPA and the dependent variable of college completion in four years. The independent variables were entered as one block. Logistic regression assumes linearity between continuous predictor variables and the logit of the dependent categorical variable. This assumption was tested by reviewing the interaction between the two continuous, predictor
variables (high school GPA and level of expected faculty-student interaction) and the log transformation of each variable (Hosmer & Lemeshow, 1989). The assumption of linearity of the logit was met for both continuous predictors. The second assumption met was the independence of error. This requires that data cases not be related - that each value of the dependent variable be unique. This holds true for the data set as a whole. Multicollinearity, or predictors that are highly correlated to one another, was evaluated by linear regression, and it was found that tolerance values for both predictors were greater than 0.1 (1.0 each). VIF values were less than 10 (1.0 each). The condition index for each was 10.04 and 21.10. A large condition index may indicate multicollinearity. Multicollinearity is not present between the two continuous variables of level of expected faculty-student interaction scores and high school GPA. Logistic regression is preferred when each cell contains at least a value of one. Incomplete information from the predictors can result from cell frequencies of less than one. A crosstab shows that, given the large number of combinations of possible cells in this regression model, many cells contain no values and frequently cells contain no information. Tabachnick and Fidell (2012) suggest that given those conditions, one could 1.) accept lessened power in the analysis, 2.) collapse categories for variables with more than two levels or 3) delete discrete variables to reduce the number of cells. However, many cells contained blank values and values of one. Given this, it is expected that this model will have reduced power.

A binary logistic regression was conducted to assess the impact of certain factors on college completion in four years, the dependent variable. The model contained the independent variables of level of expected faculty-student interaction score, high school GPA, gender, and ethnic class. The full model that included all the predictors was statistically significant, $X^2 (6, N=3073) =166.05$ $p < .001$, meaning the model could distinguished between four-year graduates and four-year non-graduates. As a whole, the model explained only 5.3 percent of the variance in four-year graduation if one uses Cox and Snell’s R square (.053) or 7.1 percent if
Nagelkerke’s R square (.071) is used. Table 16 shows the two variables (high school GPA and gender) that made a statistically significant contribution to the model. The strongest independent variable was high school GPA, with an odds ratio of 2.956. This indicated that a one-point increase in a student’s high school GPA will improve the odds of four-year graduation by almost three times over someone who fails to graduate in four years while controlling for other factors in the model. The odds ratio of 0.76 indicates that females are 1.3 (1.0/.76) times more likely than males to graduate in four years.

Table 16: Logistic Regression for Levels of Expected Faculty-Student Interaction, HS GPA, Gender, Ethnicity, and College Completion in Four Years

<table>
<thead>
<tr>
<th></th>
<th>B (SE)</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95.0% C.I. for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEF-SIS</td>
<td>0.01 (0.01)</td>
<td>0.63</td>
<td>1</td>
<td>.428</td>
<td>1.01</td>
<td>0.90 - 1.03</td>
</tr>
<tr>
<td>HS GPA</td>
<td>1.08 (0.99)</td>
<td>119.10</td>
<td>1</td>
<td>.000*</td>
<td>2.96</td>
<td>2.43 - 3.59</td>
</tr>
<tr>
<td>Gender</td>
<td>-2.79 (0.08)</td>
<td>12.32</td>
<td>1</td>
<td>.000*</td>
<td>0.76</td>
<td>0.65 - 0.88</td>
</tr>
<tr>
<td>Asian</td>
<td>0.11 (0.15)</td>
<td>0.55</td>
<td>1</td>
<td>.460</td>
<td>1.11</td>
<td>0.84 - 1.49</td>
</tr>
<tr>
<td>Afr.-Am.</td>
<td>0.00 (0.13)</td>
<td>0.00</td>
<td>1</td>
<td>.976</td>
<td>1.00</td>
<td>0.77 - 1.30</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.10 (0.10)</td>
<td>0.88</td>
<td>1</td>
<td>.348</td>
<td>1.10</td>
<td>0.90 - 1.35</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.46 (0.42)</td>
<td>112.64</td>
<td></td>
<td>.000</td>
<td>.012</td>
<td></td>
</tr>
</tbody>
</table>

(N=3144), Note R2 = .04 (Hosmer & Lemeshow), .05 (Cox and Snell), .07 (Nagelkerke). Model \(\chi^2 (6) = 166.08\), LEF-SIS – Level of Expected Faculty-Student Interaction Score, Afr. –Am. – African-American, Gender - reference category is female, Ethnic - reference category is Caucasian, p < .05.

**Research Question Three**

The third research question was: What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and students’ Holland major classification prior-to-matriculation?

The assumption of linearity of the logit was tested by reviewing the interaction between the predictor and the log transformation of the same variable (Hosmer & Lemeshow, 1989), and it was met. The second assumption of independence of error and no multicollinearity between
predictor variables was also met. The final assumption regarding cell value contents was also met. Incomplete information from the predictors can result from cell frequencies of less than one if greater than 20 percent of the total cells contain values less than five (Field, 2009). A crosstab showed that eight cells contained values less than five, resulting in only three percent of cells with values less than five.

A multinomial logistic regression was conducted to determine if a relationship existed between the continuous variable of level of expected faculty-student interaction score and Holland’s category. Only four of the six Holland classifications were used in the analysis because no students were placed in the realistic or conventional categories. This resulted in a total of 2,350 cases: artistic 240 (10.2%), social 655 (27.9%), enterprising 525 (22.3%) and investigative 930 (39.6%).

The logistic regression analysis was conducted to determine the relationship between the level of expected faculty-student interaction and the prior-to-matriculation majors of the students, as classified in one of Holland’s categories. The model contained one independent variable, level of expected faculty-student interaction score. The model was statistically significant, $X^2 (3), N=2350 = 12.445, p< .01$, demonstrating the model was able to distinguish between students relative to their Holland environmental classification and level of faculty-student interaction score. However, the model as a whole explained only about one percent of the variance in the Holland environment category: .5% (Cox and Snell R square) and .6% (Nagelkerke R squared). The model correctly identified 40 percent of all cases. Overdispersion does not appear to be a problem; the dispersion parameter was 1.02. As seen in Table 17, for each one-point increase in the level of expected faculty-student interaction score, the odds of being a member of the artistic, social, or enterprising category is expected to decrease by about 0.95 units. In other words, as the faculty-student interaction score increases by one unit, a
student is about 1 time more likely to be a member of the investigative category rather than the artistic, social, or enterprising category.

**Table 17: Multinomial Logistic Regression of Level of Expected Faculty-Student Interaction on Holland’s College Environment Category**

<table>
<thead>
<tr>
<th></th>
<th>B(SE)</th>
<th>Wald df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95.0% C.I. for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigative vs. Artistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.40 (0.36)</td>
<td>1.25</td>
<td>1</td>
<td>.263</td>
<td></td>
</tr>
<tr>
<td>LEF-SIS</td>
<td>-0.05 (0.02)</td>
<td>7.11</td>
<td>1</td>
<td>.008*</td>
<td>0.95</td>
</tr>
<tr>
<td>Investigative vs. Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.30 (0.26)</td>
<td>1.35</td>
<td>1</td>
<td>.246</td>
<td></td>
</tr>
<tr>
<td>LEF-SIS</td>
<td>-0.04 (0.01)</td>
<td>6.66</td>
<td>1</td>
<td>.010*</td>
<td>0.97</td>
</tr>
<tr>
<td>Investigative vs. Enterprising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.10 (0.27)</td>
<td>0.13</td>
<td>1</td>
<td>.717</td>
<td></td>
</tr>
<tr>
<td>LEF-SIS</td>
<td>-0.04 (0.01)</td>
<td>6.24</td>
<td>1</td>
<td>.013*</td>
<td>0.97</td>
</tr>
</tbody>
</table>

(N= 2350), Note: \(R^2=.005\) (Cox and Snell), \(.006\) (Nagelkerke). Model \(X^2(3)=12.45, p<.001, p<.05\).

**Summary**

The research did not find a statistically significant relationship between FTIC, prior-to-matriculation student expectations scores for faculty-student interactions and four-year college completion. The study did find a statistically significant relationship between the independent variables of high school GPA and gender and the dependent variable of four-year degree completion. As the high school GPA increased by one-point, the odds of a student completing college in four years increased by a factor of 2.95. By a factor of 0.76, the odds of a male completing college in four years was less than a female graduating in four years. In other words, a female is 1.32 \((1.0/0.76)\) times more likely than a male to graduate in four years. The final positive finding was the relationship between FTIC, prior-to-matriculation faculty-student interaction scores and Holland’s major category. The study found that when a student’s expectation for faculty-student interaction increased by one, the odds of being a member of the
investigative category increased by a factor of about .95 over membership in the artistic, social or enterprising categories. Stated another way, as the level of faculty-interaction score increased by one, the odds of being a member of the investigative category is about 1.1 (1.0/.95) times that of being a member of the artistic, social or enterprising categories.
CHAPTER FIVE: FINDINGS, DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

There were two specific objectives to this study. The first objective was to determine if a relationship existed between FTIC, prior-to-matriculation students’ expectation levels for faculty-student interaction and college degree completion in four years. Research finds that student expectations for college can shape student behaviors in college (Howard, 2005; Tinto, 1993). If expectations can impact future behavior, then expectations may influence academic and social integration and subsequent degree completion. Tinto’s popular theory of academic integration holds that academic and social integration are critical for student success in college. This research study investigated the relationship between FTIC, prior-to-matriculation student expectations of faculty-student interaction and four-year degree completion.

The second objective of the study was to better examine the relationship between FTIC, prior-to-matriculation student expectations for faculty-student interaction and FTIC, prior-to-matriculation student declared-majors. Smart et al. (2000) stated that understanding academic disciplines is important to understanding college persistence. The current study expanded the work related to academic disciplines by showing a potential relationship between FTIC, prior-to-matriculation student expectations for faculty-student interaction and specific majors, as categorized into one of four broad groups of majors identified by Smart et al. (2000). Smart used Holland’s vocational choice theory to develop a system that categorizes each academic major into one of Holland’s environment categories.
This chapter will review the methods used, examine the result of each research question, discuss the findings and implications, and make recommendations for future research.

**Methods**

The study used a university database of student responses to the College Student Expectation Questionnaire (CSXQ). The CSXQ was administered by USF during the summer of 2008 as part of a mandatory orientation session for first-time-in-college (FTIC) students. Seven CSXQ items from the “Experiences with Faculty” section were summed, and the result was used to construct the independent variable, level of expected faculty-student interaction score, as obtained from FTIC, prior-to-matriculation students taking the CSXQ. Logistic regression analysis examined the relationship between students’ expectations for faculty-student interaction scores and four-year degree completion, while controlling for high school GPA, gender, and ethnic background. A final logistic regression examined the relationship between the FTIC, prior-to-matriculation students’ expectations for faculty-student interaction scores and conversion of a FTIC, prior-to-matriculation student’s college major to a Holland category that represented the student’s academic major.

**Research Question One Findings**

What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

For this data set, the relationship between expectations for faculty-student interaction and four-year degree completion was not statistically significant at the p < .05 level. Additional analysis of an independent samples t-test demonstrated the mean difference in scores between graduates and non-graduates was not significantly different.
Research Question Two Findings

What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ characteristics of gender, race, high school GPA, expectation of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and college completion after four years?

This question examined the relationship between FTIC, prior-to-matriculation students’ expectations for faculty-student interaction scores and four-year degree completion while, controlling for high school GPA, gender, and ethnicity. The seven CSXQ items on the “Experiences with Faculty” subscale were summed to form one score for level of faculty-student interaction.

There was a statistically significant relationship (p<.05) between the independent variables of high school GPA and gender and the dependent variable four-year degree completion. A one-point increase in a student’s GPA resulted in an increase in the odds in four-year graduation by a factor of 2.96. The odds of a female student completing college in four years is increased by about 1.3 times, as compared to a male student completion in the same time. The binary logistic regression model accounted for only about five percent of the total variance in college completion in four years.

Research Question Three Findings

What is the relationship between first-time-in-college (FTIC), prior-to-matriculation students’ expectations of faculty-student contact, as measured by specific items on the College Student Expectations Questionnaire (CSXQ), and students’ Holland major classification prior-to-matriculation?

A statistically significant relationship (p < .05) was observed between a FTIC, prior-to-matriculation students’ expectation for faculty-student interaction score and a FTIC student’s
prior-to-matriculation Holland category. A multinomial logistic regression was conducted using the students’ expectation for faculty-student interaction score as the independent variable and the students’ prior-to-matriculation Holland category as the dependent variable. Regression using categorical variables of more than two categories requires using dummy variables. For this research question, three dummy variables were formed, using investigative as the reference category; compared were the investigative vs. artistic, investigative vs. social, and investigative vs. enterprising. The findings showed that as the level of faculty-student expectation score increased by one point, the odds of being a member of the investigative category increased by a factor of .95 over membership in the artistic category, increased by a factor of .96 over membership in the social category, and increased by a factor of .97 over membership in the enterprising category. However, the results should be interpreted with caution, given the small effect size, given the pseudo $R^2$ values of .005 for Cox and Snells and .006 for Nagelkerke. As described in the limitations section of this chapter, undeclared majors and students not placed in a Holland category accounted for twenty-five percent of the total sample. However, the effect sizes produced here are close to a large, national study ($N=14,550$) by Bradley et al. (2002) using CSXQ findings. He found the relationship between major and FTIC student expectations for faculty-student interactions had a similar effect size of .008.

**Discussion**

Previous research (Astin, 1977; Bean & Kuh, 1984; Pascarella & Terenzini, 2005) indicated that faculty-student contact may provide many positive benefits to students. These include improvement in college academic and social integration, degree completion, grade point average, and student intention to enter graduate school. The current study was undertaken to examine the expectations of FTIC, prior-to-matriculation student expectations for faculty-student contact and college completion in four years. No statistical significance was found for the
relationship between student expectations for faculty-student interaction and four-year college completion.

In a previous study of one-year retention, conducted at the same institution, Miller and Herreid (2008) also found no significant relationship between FTIC student expectations for faculty student interaction and one-year retention. The 2006 study also used findings using the CSXQ. This finding is counterintuitive to what one would expect and may result from the unique institutional and student characteristics of USF. USF is classified as a research university, very high research activity Carnegie classification. The USF student body includes a large commuter population, many first generation status students and a considerable number of students with low expected family contribution (EFC). These factors, when combined, may result in FTIC students having less expectation for faculty-student interaction.

The current study confirmed earlier findings of the relationship between high school GPA and gender on degree completion. High school GPA positively impacts college degree completion (Astin, 2005; Astin & Oseguera, 2012; DeBrock, 2000; Seidman, 2012). Astin and Oseguera (2012) found that FTIC students with a high school average of an A are four times more likely to graduate in four years than a student with a C average. The current study found that for each one-point increase in high school GPA, the odds of four-year college completion are increased by a factor of 2.96, a somewhat similar result. The current study additionally confirmed the impact of gender on degree completion found in previous research. Astin (1993); (Astin, Tsui, & Avalos, 1996) found that regardless of the time period, four or six years, women are more likely than men to complete the college degree. The current study found the odds of a female student completing college in four years are increased by about 1.3 times over those of a male student in the same time.

Another aspect of the current study was to investigate the relationship between FTIC, prior-to-matriculation student expectations for faculty-student interaction scores and student
major, as categorized by Holland. There was a statistically significant relationship between FTIC, prior-to-matriculation expectation for faculty-student interaction scores and FTIC, prior-to-matriculation student major, as categorized by Holland. As the FTIC, prior-to-matriculation expectation for faculty-student interaction score increased by one point, the odds of having a major associated with the investigative category increased by about 1.03 over association with having a major in the artistic, social, or enterprising categories. The artistic environment includes art, drama, and music majors. The social environment includes the majors of history, psychology, and social work. The enterprising category includes business administration, journalism, and business management; and the investigative environment includes the pre-professional medical science majors, biology, physical sciences, mathematics, sociology, and economics. Work reported by Bradley et al. (2002) had similar findings in a large national study (N=14,500). The study used CSXQ findings to examine relationships between majors, as assigned by the CSXQ and FTIC student expectations for faculty-student contact and determined by a summed score on the “Experiences with Faculty” section. The study found (Bradley et al., 2002) that first-time-in-college student expectations for faculty-student interaction among pre-professional majors was higher than for business, math, social sciences, and other majors. As stated on the CSXQ, the pre-professional majors are defined as pre-dental, pre-veterinary, or pre-medical majors. However, as related by the authors, the large sample size and small effect size observed in the study could result in a Type II error.

Most of the majors assigned to the investigative category in the sample are from one major—pre-medical science. Appendix B is a chart that shows how entry majors were categorized in Holland’s categories and shows that 579 students in the investigative category are represented by majors assigned to pre-medical science or what could be called in the Bradley study pre-professional majors. This represents 61 percent of the 931 students assigned to this category. Given the findings of higher levels of expected faculty-student interaction within
the pre-professional majors, as described by Bradley et al. (2002), and coupled with the fact that, in this data set, over 60 percent of the students in the investigative category are pre-professionals, this helps to somewhat confirm the current finding in previous research.

Students enrolled in majors associated with the investigative category exhibited a higher level of expectations for faculty-student interaction than majors associated with the artistic, social, or enterprising categories. The large number of pre-professional students in the investigative category may have impacted this relationship, as described by Bradley et al. (2002). It is important to state that students in the investigative category displayed the highest average high school GPA (3.80), had the highest expected level of faculty-student interaction score (18.95), and were mostly enrolled in a highly competitive university major – pre-medical science.

Limitations

The research described three limitations before the study was conducted. Two additional limitations, listed as number four and five, were added following analysis of the information.

1. Since the data used were secondary data, the researcher was not in control of how the data were collected.

2. The study used self-reported information, and one difficulty inherent in the use of secondary data is that it can be difficult to determine how conscientiously students responded to each item on the questionnaire.

3. The generalizability of the study is limited since the study was conducted at a single institution.

4. Twenty-five percent of study participants were not assigned a Holland major category.

5. It is unknown how many college credit hours FTIC students entered with due to tracking problems in the institutional data base.
One-quarter of students were not assigned to a Holland category. The third research question examined the relationship between each student’s expectation for faculty-student interaction score and Holland’s major category. Students were assigned to a Holland major category based upon each student’s prior-to-matriculation college major selection. A total of 788 students or “25 percent of the sample” were unable to be classified because they were either undeclared majors or they belonged to a major that was unable to be placed in a Holland category. This limited the findings for this research question. The problem is described by (Tabachnick & Fidell, 2012, p. 63):

If only a few data points - say, 5% or less - are missing in a random pattern from a large data set, the problems are less serious and almost any procedure for handling missing values yields similar results. If, however, a lot of data are missing from a small or moderately sized data set, the problems can be very serious. Unfortunately, there are as yet no firm guidelines for how much missing data can be tolerated for a sample of a given size.

For this reason, the findings for research question three should be interpreted with caution. The final limitation is that the total number of credit hours that students accrued prior to formal college entry was unknown. Problems in the database did not allow for collection of this information and may result in artificially high, four-year graduation rates for student’s entering with a large number of credit hours.

**Implications**

In this study three statistically significant findings were observed. High school GPA was related to four-year degree completion, females graduated at a higher rate in four years than males, and students in the Holland investigative category had higher expectation levels for faculty-student interaction. How each of these findings might inform institutional practice is briefly explored.
High school GPA and its relationship to college degree completion is well established in previous degree completion studies. When the institutional goal is improvement in four-year degree completion, university admission personnel should continue efforts focused on admitting students with the best high school GPA’s, since as demonstrated in this study, for each one point improvement in high school GPA, the odds of a student graduating are improved by a factor of 2.96.

National studies show that females have been graduating at higher rates than males since about 2000. This trend was confirmed in the current study when a statistically significant relationship was observed between gender and graduation in four years. Females are about 1.3 times more likely than males to graduate in four years. This raises the question. What efforts might the university undertake to improve the male graduation rate? The University should conduct research regarding this issue and develop specific programs to improve male graduation rates.

Students’ expectation level for faculty-student contact seems to be greater in Holland’s investigative environment. That is, there were higher levels of expected faculty-student interaction in Holland’s investigative category, than in the artistic, social and enterprising environmental categories. Additional research is needed to determine why students expect more faculty-students interaction when going into majors in the investigative category. Perhaps FTIC students in the investigative category, which includes the sciences, spend more time at the high school in contact with high school teachers during required laboratory courses and this leads to higher expectations for faculty-student interaction.

In this study, no statistically significant relationship was observed between the FTIC, prior-to-matriculation student expectations of faculty-student interaction scores, as assessed by the CSXQ “Experiences with Faculty” scale, and college completion in four years. In discussing the results with a student affairs administrator, a number of interesting questions were raised.
USF is an institution that has moved in just over a decade from being a regional university to a research intensive university. Although there is no institutional data on the subject, the student affairs administrator stated that on the basis of his experience at the University there was likely a very high percentage of first generation students enrolled. Would variables like first generation student status, size of the institution, level of expected family contribution (EFC) and selectivity influence the expectations of students’ attending the university? The administrator also posited that FTIC students at the University may have less expectation for interaction with faculty. USF’s classification as a “research university, very high research activity” Carnegie classification may promotes this notion. A study of the expectation levels of student’s entering different types of institutions (private, baccalaureate only, HBCU) may provide further insight into the relationship between expectations and institutional classification.

**Recommendations**

This study raised a number of questions that suggest additional research is needed. Based upon this study, the following recommendations for future research are made:

1. A statistically significant relationship was not found between FTIC, prior-to-matriculation expectations for faculty-student interaction score and four-year degree completion. Future research should be conducted to determine if a six-year graduation rate would yield a different finding. Many students and programs require additional time to graduate. The extension of the graduation time period would allow the inclusion of programs that take longer than four years to complete, such as the engineering programs, that were omitted from the current study.

2. A statistically significant relationship between student ethnicity and four-year completion was not found in this study. Previous research shows ethnic differences are related to college completion. A future study should evaluate and describe this finding.
3. The study used the seven items from the “Experiences with Faculty” on the College Student Expectations (CSXQ) survey to determine a student’s level of expected faculty-student interaction score. The CSXQ does not include any items that make use of electronic methods of attaining faculty-student contact. Students entering college today are heavy users of technology, and an instrument that captures and quantifies this aspect of faculty-student interaction may be needed.

4. The study found a statistically significant relationship between student expectations for faculty-student interaction score and Holland’s major categories. The result described in the study had a small effect size and did not include twenty-five percent of the sample-- engineering students. The study should be repeated and results evaluated to include engineering students that were omitted from the current study.

5. Additional research regarding FTIC, prior-to-matriculation student expectations for faculty-student interaction should be conducted. A qualitative study should help to determine if FTIC, prior-to-matriculation students are aware of the potential impact of faculty-student interaction on student success.

6. A longitudinal study of expectations for faculty-student interaction using the CSXQ should be compared to levels students actually experienced using the College Student Experiences Questionnaire (CSEQ) across a four or six-year degree completion period. In this way the relationships between faculty-student interaction and experiences can be examined across academic years and the relation to completion could be explored.

7. Examine the relationship between all FTIC, prior-to-matriculation student expectations on the CSXQ and the relationship to FTIC, prior-to-matriculation expectations for faculty-student interaction score. This would provide information
regarding potential relationships that may not have been recognized between various expectations.

8. Explore the impact of online course work on various aspects of faculty-student interaction.

This quantitative study was produced to improve the understanding of FTIC, prior-to-matriculation students’ expectations for faculty-student interaction and the relationship to four-year degree completion. The study also examined the relationship between FTIC, prior-to-matriculation students’ expectations of faculty-student interaction scores and FTIC, prior-to-matriculation student major selection, as categorized in one of Holland’s categories. By looking at differences in expectations of students who graduated and did not graduate, the researcher believed that institutions would be better able to serve students with lower expectations for interaction with faculty. This study revealed differences between expectation levels for faculty-student interaction and for student majors, as categorized in Holland’s category. No significant statistical relationship was found regarding FTIC, prior-to-matriculation student expectations for faculty-student interaction and four-year degree completion. The study supported previous research that showed a relationship between the variables of high school GPA and gender and the variable of four-year degree completion.

Tinto’s theory of student integration was used as the theoretical frame for the study. Tito’s theory holds that the more a student is integrated to both the college’s academic and social spheres, the more likely the student will persist and continue to degree completion. Faculty are key facilitators of both forms of integration. In this study, no statistically significant relationship existed between a FTIC student expectation for faculty-student interaction score and college degree completion in four years.


Herreid, Charlene). [Fall and Summer 2008 Credit Hours].


Lillis, Michael. (2011). Faculty Emotional Intelligence and Student-Faculty Interactions: Implications for Student Retention. Journal of College Student Retention: Research, Theory & Practice, 13(2), 155-178.


Miller, TE, & Herreid, CH. (2008). Analysys of Variables to Predict First-Year Persistence Using Logistic Regression Analysis at the University of South Florida. *College and University, 83*(3).


Seidman, Alan. (2012). *College Student Retention.* Lanham, Maryland: Rowman and Littlefield Inc.


USF. (2008a). Pocket Facts. Tampa, FL: USF.

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USF. (2013). IPEDS Retention Summary, USF Campus. Retrieved 10/10/2013, from University of South Florida
http://devpilot.fastmail.usf.edu/infocenter/?silverheader=14&report_category=ADM&report_type=SRETS&reportid=7005


Welcome!
You have not yet experienced life as a student here. But you have some ideas about how you will spend your time, what you will be doing and so forth. We are interested in these ideas. More specifically, what do you expect to do this year as a student? Please complete the items on the following few pages in a way that answers this question. It takes less than 15 minutes to complete this survey.

Your responses are confidential. Keep in mind that the questionnaire will be read by an electronic scanning device, so be careful in marking your responses. Please use a 2B black lead pencil. Marks made by ink pens cannot be scanned. Do not write or make any marks on the questionnaire outside the spaces for your answers. Erase cleanly any responses you want to change.
The benefits from this and any other survey depend on the thoughtful responses of those who are asked to help. Your willingness to participate is very important and very much appreciated. Thank you!

## COLLEGE ACTIVITIES

**DIRECTIONS:** During the coming year in college, how often do you expect to do the following? Indicate your response by filling in one of the circles to the right of each statement.

<table>
<thead>
<tr>
<th>Library and Information Technology</th>
<th>Occasionally</th>
<th>Often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the library as a quiet place to read or study. Use an index or database (computer, card catalog, etc.) to find material on some topic. Read assigned materials other than textbooks in the library (reserve readings, etc.). Develop a bibliography or set of references for a term paper or other report. Use a computer or word processor to prepare reports or papers. Use e-mail to communicate with an instructor or classmates. Participate in class discussions using an electronic medium (e-mail, listserve, chat group, etc.). Search the World Wide Web or Internet for information related to a course. Use a computer to retrieve materials from a library not at this institution.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiences with Faculty (cont’d.)</th>
<th>Occasionally</th>
<th>Often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss ideas for a term paper or other class project with a faculty member. Discuss your career plans and ambitions with a faculty member. Socialize with a faculty member outside the classroom (have a snack or soft drink, etc.) Ask your instructor for comments and criticisms about your academic performance. Work with a faculty member on a research project.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete the assigned readings before class. Take detailed notes during class. Try to see how different facts and ideas fit together. Apply material learned in a class to other areas (a job or internship, other courses, relationships with friends, family, co-workers, etc.). Summarize major points and information from your readings or class notes. Use information or experience from other areas of your life (job, internship, interactions with others) in class discussions or assignments. Explain material from a course to someone else (another student, friend, co-worker, family member). Prepare a paper or project where you had to integrate ideas from various sources.</td>
</tr>
</tbody>
</table>
APPENDIX A: (Continued)

DIRECTIONS: During the coming year in college, how often do you expect to do the following? Indicate your response by filling in one of the circles to the right of each statement.

**Writing**
- Ask other people to read something you wrote to see if it is clear to them.
- Refer to a book or manual about writing style, grammar, etc.
- Revise a paper or composition two or more times before you are satisfied with it.
- Ask an instructor or staff member for advice and help to improve your writing.
- Write a major report for a class (20 pages or more).

**Campus Facilities**
- Go to an art exhibition or a play, dance, or other theater performance, on or off campus.
- Attend a concert or other music event.
- Use a campus lounge to relax or study by yourself.
- Meet other students at some campus location (campus center, etc.) for a discussion.
- Attend a lecture or panel discussion.
- Use a learning lab or center to improve study or academic skills (reading, writing, etc.).
- Use recreational facilities (pool, fitness equipment, courts, etc.).
- Play a team sport (intramural, club, intercollegiate).
- Follow a regular schedule of exercise or practice for some recreational or sporting activity.

**Clubs, Organizations, Service Projects**
- Attend a meeting of a campus club, organization, or student government group.
- Work on a campus committee, student organization, or service project (publications, student government, special event, etc.).
- Work on an off-campus committee, organization, or service project (civic group, church group, community event, etc.).
- Meet with a faculty member or staff advisor to discuss the activities of a group or organization.
- Manage or provide leadership for an organization or service project, on or off the campus.

**Student Acquaintances**
- Make friends with students whose interests are different from yours.
- Make friends with students whose family background (economic, social) is different from yours.
- Make friends with students whose race or ethnic background is different from yours.
- Have serious discussions with students whose philosophy of life or personal values are very different from yours.
- Have serious discussions with students whose religious beliefs are very different from yours.

**Scientific and Quantitative Experiences**
- Memorize formulas, definitions, technical terms and concepts.
- Express a set of relationships using mathematical terms.
- Explain your understanding of some scientific or mathematical theory, principles, or concept to someone else (classmate, co-worker, etc.).
- Read articles about scientific or mathematical theories or concepts in addition to those assigned for a class.
- Complete an experiment or project using scientific methods.

**CONVERSATIONS**

DIRECTIONS: In conversations with others at college during the coming school year, how often do you expect to talk about each of the following?

**Never** | **Occasionally** | **Often** | **Very Often**
---|---|---|---

**Student Acquaintances (cont'd)**
- Have serious discussions with students whose political opinions are very different from yours.
- Have serious discussions with students whose race or ethnic identification is very different from yours.

**Current events in the news.**

**Social issues such as peace, justice, human rights, equality, race relations.**

**Different lifestyles, customs, and religion.**

**The ideas and views of writers, philosophers, historians.**

**The arts (painting, poetry, theatrical productions, dance, symphony, movies, etc.).**

**Science (theories, experiments, methods, etc.).**

**Computers and other technologies.**

**Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.**

**The economy (employment, wealth, poverty, debt, trade, etc.).**

**International relations (human rights, free trade, military activities, political differences, etc.).**

DIRECTIONS: In these conversations, how often do you expect to do each of the following?

**Refer to knowledge you acquired in your reading or classes.**

**Explore different ways of thinking about a topic or issue.**

**Refer to something one of your instructors said about a topic or issue.**
APPENDIX A: (Continued)

Where will you live during this school year?
- dormitory or off-campus housing (not fraternity/sorority house)
- fraternity or sorority house
- residence (house, apartment, etc.) within walking distance of the institution
- residence (house, apartment, etc.) within driving distance

What do you expect your college grade point average to be at the end of your first year?
- A
- A-, B+
- B, B- or lower
- B

Did either of your parents graduate from college?
- no, both parents
- yes, mother only
- yes, father only
- yes, both parents

Do you expect to enroll for an advanced degree when, or if, you complete your undergraduate degree?
- yes
- no

How many credit hours will you take this first term?
- 0 or fewer
- 15 - 19
- 14 - 17
- 13 - 14

Which of the following comes closest to describing the field you expect to major in?
- Agriculture
- Biological/life sciences (biology, biochemistry, botany, zoology, etc.)
- Business (accounting, business administration, marketing, management, etc.)
- Communication (speech, journalism, television/radio, etc.)
- Computer and information sciences
- Education
- Engineering
- Ethnic, cultural studies, and area studies
- Foreign languages and literature (French, Spanish, etc.)
- Health-related fields (nursing, physical therapy, health technology, etc.)
- History
- Humanities (English, literature, philosophy, religion, etc.)
- Liberal arts studies
- Mathematics
- Multidisciplinary studies (international relations, ecology, environmental studies, etc.)
- Parks, recreation, leisure studies, sports management
- Physical sciences (physics, chemistry, astronomy, earth science, etc.)
- Pre-professional (pre-dental, pre-medical, pre-veterinary)
- Public administration (city management, law enforcement, etc.)
- Social sciences (anthropology, economics, political science, psychology, sociology, etc.)
- Visual and performing arts (art, music, theater, etc.)
- Undecided
- Other: What?

During the time school is in session this coming year, about how many hours a week do you plan to work on a job? Fill in one oval in each column.

- none; I won't have a job
- 1-10 hours a week
- 11-20 hours a week
- 21-30 hours a week
- 31-40 hours a week
- more than 40 hours

About how much of your college expenses this year will be provided by your parents or family (including your own contribution)?
- all or nearly all
- less than half
- more than half
- none or very little

What is your racial or ethnic identification?
(Fill in all that apply)
- American Indian or Alaskan native
- Caucasian (other than Hispanic)
- Asian or Pacific Islander
- Mexican-American
- Puerto Rican
- Black or African American
- Other Hispanic
- Other: What?

**ADDITIONAL QUESTIONS**

1. __ 2. __ 3. __ 4. __ 5. __ 6. __
6. __ 7. __ 8. __ 9. __ 10. __

- Student ID Number

Please fill in your student ID number below.

This questionnaire is available from the Indiana University Center for Postsecondary Research
1003 East Tenth Street
Bennett Hall, Suite 416
Bloomington, IN 47408-7512
E-mail: cseq@indiana.edu

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Authors: George D. Kuh and C. Robert Paice

THANK YOU

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## APPENDIX B:
ENTRY MAJORS AND HOLLAND’S COLLEGE ENVIRONMENT

<table>
<thead>
<tr>
<th>MAJOR</th>
<th>NUMBER OF STUDENTS DECLARING</th>
<th>HOLLAND’S ASSIGNED CATEGORY</th>
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<tr>
<td>Art History</td>
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<tr>
<td>Liberal Studies</td>
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<tr>
<td>Anthropology</td>
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<tr>
<td>Architecture</td>
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<td>Athletic Training</td>
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<td>Early Childhood Education</td>
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<td>Exceptional Student Education</td>
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<td>Biology</td>
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<td>Mathematics Education</td>
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<td>Biomedical Sciences</td>
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<tr>
<td>Pre-Business Administration</td>
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<tr>
<td>Chemistry</td>
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<td>Classics - Latin/Greek</td>
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<td>Mass Communications</td>
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<td>Communication Sciences &amp; Disorders</td>
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<tr>
<td>Dance</td>
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<td>Environmental Science &amp; Policy</td>
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<td>Finance</td>
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<td>Foreign Language Education</td>
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<tr>
<td>French</td>
<td>7</td>
<td>A</td>
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<td>General Business Admin</td>
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<td>E</td>
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<tr>
<td>Geology</td>
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<td>I</td>
</tr>
<tr>
<td>Geography</td>
<td>2</td>
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</table>
## APPENDIX B: (Continued)

<table>
<thead>
<tr>
<th>Program</th>
<th>Students</th>
<th>Type</th>
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<tbody>
<tr>
<td>Hospitality Management</td>
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<tr>
<td>Humanities</td>
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<td>History</td>
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<td>International Studies</td>
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<td>Management Information Systems</td>
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<td>Italian</td>
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<td>Information Technology</td>
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<td>E</td>
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<tr>
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<td>Marketing</td>
<td>1</td>
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<tr>
<td>Music Studies</td>
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<td>Music</td>
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<td>Pre-Engineering</td>
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<td>Philosophy</td>
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<td>Science Education</td>
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<td>Sociology</td>
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<td>Communication</td>
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<td>E</td>
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<td>Theater &amp; Dance</td>
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<td></td>
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<tr>
<td>Engineering</td>
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<td></td>
</tr>
</tbody>
</table>
APPENDIX C:

INSTITUTIONAL REVIEW BOARD EXEMPT CERTIFICATE

August 21, 2013

Craig Story
Secondary Education
Lakeland, FL 33803

RE: Exempt Certification
IRB#: Pro00013603
Title: The Relationship of Undergraduate First-Time-in-College Students' Expectations of Interactions with Faculty and Four-Year College Degree Completion

Study Approval Period: 8/21/2013 to 8/21/2018

Dear Mr. Story:

On 8/21/2013, the Institutional Review Board (IRB) determined that your research meets USF requirements and Federal Exemption criteria as outlined in the federal regulations at 45CFR46.101(b):

(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Approved Document:

Student Expectations for Faculty Interaction and Four-Year Undergraduate Degree Completion

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF IRB policies and procedures. Please note that changes to this protocol may disqualify it from exempt status. Please note that you are responsible for notifying the IRB prior to implementing any changes to the currently approved protocol.

The Institutional Review Board will maintain your exemption application for a period of five years from the date of this letter or for three years after a Final Progress Report is received, whichever is longer. If you wish to continue this protocol beyond five years, you will need to submit a new application at least 60 days prior to the end of your exemption approval period. Should you complete this study prior to the end of the five-year period, you must submit a
request to close the study.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board
Dear Craig,

Permission is granted for use only in your dissertation.

Regards,

Bethany Graham
Business Manager
Vanderbilt University Press

---

From: Craig Story (mailto:cstory@tampabay.rr.com)
Sent: Sunday, November 10, 2013 1:49 AM
To: Graham, Bethany
Subject: Copyright permission

Good morning to you, Bethany!

I trying to obtain copyright permission to reproduce the following in my dissertation:


Any information regarding how to request this would be appreciated.

Thanks!

Craig Story
Hi Craig,

You have permission to reproduce the CSXQ as an appendix in your dissertation. I have attached the survey to this email. In all publications or presentations of data obtained through this licensed item, please include the following citation: "CSXQ used with permission from the CSEQ Assessment Program, Indiana University, Copyright 1998, The Trustees of Indiana University." Please let me know if I can be of further assistance.

John

Center for Postsecondary Research
Indiana University Bloomington
1900 East Tenth Street
Eigenmann Hall Suite 419
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Phone: 812.856.5824
Fax: 812.856.3150
Email: cpr@indiana.edu

From: Craig Story [mailto:cstory@tampabay.rr.com]
Sent: Thursday, November 21, 2013 9:03 AM
To: Zilviniskis, John D
Subject: Re: Copyright Permission for CSXQ

John

Thanks for your rapid reply, it is appreciated. I’m happy to provide the information you have requested.

The title of my study is "The Relationship of Undergraduate First-Time-in-College Students’ Expectations for Faculty Student Interactions with Faculty and Four-Year College Degree Completion"

In response to your questions:
   a) I utilized secondary data collected by the University of South Florida during the 2008 administration of the CSXQ,
   b) I will not request CSXQ data from your data set
   c) I am not asking for permission to adopt any items into my study

I am specifically asking for permission to reproduce the CSXQ as an Appendix in my dissertation.

Thanks for assisting with this request!

Craig Story