

STUDENT/FACULTY INTERACTION, RISK STATUS, ACADEMIC IDENTITY  
AND PERSISTENCE OF UNDERGRADUATE STUDENTS

A DISSERTATION

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## DEDICATION

To my late father:

Ron Mann

I know you would have been proud to see this educational goal of mine become a  
reality, but  
I know you are looking down from heaven and smiling. I miss you, Dad.

To my husband, Ben, and children, Lauren and Rylan:

Thank you for being so very patient and understanding as I have worked long hours to  
reach this goal.  
I love and appreciate you all very much!

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## ABSTRACT

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### STUDENT/FACULTY INTERACTION, RISK STATUS, ACADEMIC IDENTITY AND PERSISTENCE OF UNDERGRADUATE STUDENTS

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The purpose of this dissertation was to ascertain whether student/faculty interaction, risk status and academic identity impact persistence of undergraduate students. While much research has been done on student interaction with faculty, little research on student/faculty interaction in conjunction with risk status and academic identity has been explored. There remains a gap in the literature specifically on the impact of student-faculty interactions, risk status and academic identity on persistence. OLS Regression and Binary Logistic Regression were used to investigate the relationships between student/faculty interaction, risk status, academic identity and persistence. Findings indicate that the relationship between student/faculty interaction and persistence is most effective when the aspect of academic identity is included, though students will not persist necessarily based on academic identity alone. This study suggests that an increase in the frequency and perceived quality of student/faculty interaction will increase levels of behavior consistent with a strong academic identity, which in turn will increase the rate of persistence. Research suggests the possibility that

this concept will also influence persistence rates of high risk students, though this finding is not conclusive. Limitations and implications for further research are discussed.

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## CHAPTER I

### INTRODUCTION

A college degree is becoming increasingly important not only for the individual, but for society. Those who attain a college degree have higher income, higher job satisfaction, and better health (Oreopoulos & Petronijevic, 2011, 2013; Hout, 2011). Those who desire to maintain a middle class lifestyle are finding a degree a necessity, and consequently, college enrollment rates have been increasing (National Center for Educational Statistics, 2010; Dinwiddie & Allen, 2003; The College Board, 2005). But although the number of students entering college has increased, persistence onto graduation is disproportionate to the number of students who begin their academic journey (National Center for Educational Statistics, 2005; 2010; Roach, 2001).

Student persistence has been a prominent area of study in higher education for many decades (Braxton, 2000; Reason, 2009). Persistence, which can be defined as continuous student re-enrollment at institutions of higher education, is a concern globally as well as in the United States (Schreiner, Noel, Anderson and Cantwell, 2011). According to an assessment of international education performance conducted by the (OECD) Organisation for Economic Cooperation and Development (Callan, 2006), compared to other nations, the United States ranks 15<sup>th</sup> in the number of students who enter higher education institutions and persist until graduation. The U.S. has previously

been ranked 2<sup>nd</sup> in graduation rates from institutions of higher education, but widening gaps of persistence among students in the U.S. particularly among marginalized (high-risk) groups in terms of age, income, and race and ethnicity have allowed other nations to become more successful in enrolling as well as graduating students from marginalized (high-risk) groups (Palmer, Davis, Moore and Hilton, 2010).

Countries such as China and India are investing in the human capital of their young people through higher education, and as a result, educational opportunities and attainment for these two countries are growing. China currently holds the number one spot for the number of students enrolled in postsecondary education. China is also a global leader in graduation rates for science and engineering (Callan, 2006). India has over nine million students enrolled in institutions of higher education, with over 300,000 of these enrolled in prominent science and technology institutions. These students are graduating and gaining employment at both national and international firms, making India a growing powerful competitor in the global marketplace (Callan, 2006). While the U.S. is still competitive in regard to the college graduation rates of older students, the country is failing to remain globally competitive in the number of young adults who are participating in and completing postsecondary educational aspirations. This is especially true of U.S. students who are underrepresented among minority groups (Palmer et. al., 2010; National Center for Educational Statistics, 2010). Numerous studies have shown that these students seem to face more difficult challenges in being successful in college

life and academics compared to white students from middle-class backgrounds (Ishtani, 2006; Koenig, 2009, Tinto, 1999, Tinto and Pusser, 2006).

People in the United States who report their ethnicity as Hispanic, African-American, Asian, American Indian, Native Hawaiian and Pacific Islander will make the U.S. a minority-majority country by 2042 (Palmer, Davis, Moore and Hilton, 2010). According to projections from the U.S. Census Bureau (2012), some minority groups such as African Americans and Hispanics are going to increase in numbers to the degree that they will double in their population percentages by 2042, while the populations of Whites will decrease. Research shows that this shift in national demographics is influencing college enrollment. As a result, current college student demographics are changing from the majority white middle-class traditional student to increases in racial minorities who have disparities in their skill levels, are comparatively disadvantaged economically and whose parents are not college educated (Kirsh, Braun, Yamamoto and Sum, 2007).

The National Center for Education Statistics (NCES, 2005), projects that the greatest area of growth in college student populations is occurring among racial and ethnic minorities (Hussar & Bailey, 2008). However, the gap of postsecondary students who persist and graduate among marginalized groups in the U.S. is widening, which poses concerns about the U.S. stability and competitiveness in the global marketplace (Bailey & Dynarski, 2011; Carey, 2004; Swail, Redd, & Perna, 2003). The need to reduce

these disparities and inequalities in postsecondary educational access and graduation is essential for the U.S. growth of knowledge-based skilled laborers in the global economic system and to allow America to remain competitive. Basically, America needs to educate more of its young adult population at the college-level, particularly those who are considered marginalized due to race and income (Bailey & Dynarski, 2011; Wagner, 2006).

Historically, research shows that the U.S. has been less responsive to the educational needs of marginalized groups. Because minority groups are often low-income and are often first generation college students, this makes college access for these students as well as persistence more difficult on a number of levels, putting them at a disadvantage to their peers. (Harvey and Harvey, 2005; Harvey, 2008; Levin, Belfield, Muenning,& Rouse, 2007; Moore and Owens, 2008; Nunez, 2009). Additionally, minority students tend to feel less prepared for college compared to white students (Zarate & Gallimore, 2005), and further, some minority students feel discriminated against because of their differences compared to others in the college setting (Quaye, 2007; Schmidt, 2008).

The persistence of marginalized student groups is a critical issue for institutions of higher education most notably because of its effect on the institution's operational budget and finances as well as the perceived quality of the institution (Derby and Smith, 2004). If a growing marginalized student population is failing to persist, this will be a

real life problem for the financial health of higher education. Not only will tuition and fees be lost, but persistence rates are also used to determine the amount of federal and state funding that is awarded (Derby and Smith, 2004). From the perspective of the individual student, failure to persist in college will impact that student's financial future. A lack of postsecondary education will limit an individual's potential job earnings and career aspirations significantly, which will ultimately impact the quality of life that individual will have through retirement (Habley & Clanahan, 2004). Individuals who do not complete their postsecondary education are more likely to depend financially on government support and charity and will earn less income in their lifetimes than those who earn a bachelor's degree (Habley & Clanahan, 2004).

The dismal report of success by marginalized groups outlines a need for strategies that encourage academic achievement and continued participation (Öztürk, 2007). Ignoring these facts has resulted in far too many marginalized students failing to persist in their college education, keeping them from personal success and upward mobility and causing the academic and economic global power of the U.S. to wane considerably. By improving educational outcomes for growing marginalized groups, however, the U.S. can begin to enhance its level of effectiveness globally (Palmer, Davis, Moore and Hilton, 2010).

Marginalized (high-risk) students have been the subject of much retention research. Most of this research is focused on the obstacles these groups face in attaining

postsecondary degrees. High-risk students can be defined as those students whose personal characteristics may contribute to academic failure or early departure from college (Choy, 2002). For the purpose of this study, students who are considered to have a high risk status will be referred to as high-risk students. Examples of personal characteristics that predict risk for college success are racial minority, or first-generation, which is an indicator of low socioeconomic status (Choy, 2002). Despite many programming efforts to enhance the success of this student population, high-risk students continue to lag behind in their persistence to graduation compared to their peers (Chen, 2005). Over the last few decades there has been a tremendous amount of literature about the impact of student/faculty interactions and how students often do not take advantage of the faculty as a resource of contact outside of the classroom (Hagedorn et al. 2000; Kuh and Hu, 2001; Nadler and Nadler, 2001). One of the most important resources a University has for connecting with students in a meaningful way is the faculty. Faculty contribute to student's college experience in the classroom through various forms of instruction, but faculty can further achieve meaningful interaction with their students outside of the classroom, which can have a significant impact on their academic experience.

According to Braxton, Hirschy and McClendon (2004) this is especially important for students who are considered high-risk. When high-risk students perceive their interactions with faculty to be positive and rewarding, this bolsters their sense of



academic identity and they feel encouraged and will be more likely to thrive in their new college environment. A stronger sense of academic identity will encourage high-risk students to pursue further interactions with faculty, thus enhancing their commitment to their studies which will increase their likelihood of persistence.

While research shows that student-faculty interactions influence student persistence and success, the nature of student-faculty interactions that are most conducive to academic identity and persistence in conjunction with risk status has not been explored. The purpose of this dissertation is to ascertain whether student-faculty interaction, risk status and academic identity impact the persistence of undergraduate students.

#### RATIONALE

Historically, research tells us that students from high-risk groups show lower levels of student persistence compared to traditional upper and middle class white students whose parents are college educated (Carter, 2006; Sorey and Duggan, 2008; Stietha, 2010). However, the traditional reality of 18-22 year old, white students living on campus no longer defines the current reality of the contemporary college student, and studies on persistence that reflect the increasing diversified student population are needed (Reason, 2009; Stietha, 2010).

In order to remain competitive in the global marketplace that demands a college education knowledge base, there is a need for the United States to increase persistence

in higher education among high-risk groups (Palmer, Davis, Moore and Hilton, 2010).

This needed increase in student enrollment and graduation rates have university administrations searching for answers as to why students leave their institutions and what can be done to encourage these students to persist in their educational pursuits until graduation (Braxon, 2000; Handel, 2007). Accordingly, it is incumbent upon educators to find more productive ways to engage a growing population of high-risk students in their academic pursuits in order to affect persistence.

This is a topic in which stakeholders in every aspect of higher education have a vested interest in (Kuh, 2007). Conversely, this emphasizes a practical use for university administrators and officials concerned with persistence of undergraduate students. Not only does the persistence of students impact the reputation of the institution in society, from a financial standpoint the ability of the university to retain students from one semester to another translates into funding the university depends on to thrive (Longden, 2002; Yorke and Longden, 2004). Hence, a second contribution is the practical application of the findings of the data on persistence levels of undergraduate students.

Further, an additional contribution to the study is its focus on the impact faculty/student interaction, risk status and academic identity will have on the persistence of undergraduate students at a predominantly female institution in the South. Research on risk status has primarily been done using the deficit model that explores factors that keep these students from succeeding (Schreiner, et. al., 2011).

Additionally, while much research has been done on student interaction with faculty, little research on student-faculty interaction in conjunction with risk status and academic identity has been explored. There remains a gap in the literature specifically on the impact of student-faculty interactions, risk status (as it is defined as first-generation, African American and Hispanic undergraduate students) and academic identity on persistence.

Furthermore, there exists no research at the institution at which this study is situated that examines the impact of student-faculty interaction, risk status and academic identity on the persistence of undergraduate students. The study takes place at a public university with a pre-dominantly female population, so this study will add to the literature in this regard. Particularly, it may provide the institution with useful data that may be used to benefit its specific student population.

#### STRUCTURE OF THE DISSERTATION

This dissertation is divided into five chapters with references and appendices. Chapter I describes the purpose of this research and the rationale and significance for the study. Chapter II reviews research on student/faculty interactions and its effect on persistence, first-generation college students and persistence, African American and Hispanic students and persistence, other factors that affect persistence, academic identity and persistence and outlines the theoretical framework of the study. The final section details the research question and hypotheses for the study. Chapter III discusses

the data and methodology. Chapter IV presents the research findings, and Chapter V summarizes the findings, and discusses implications of the study and recommendations for additional research.

## CHAPTER II

### LITERATURE REVIEW

The literature review is organized into seven sections. The first section reviews literature on student-faculty interaction and its relationship to persistence in higher education. The next three sections present literature pertaining to persistence among first-generation to college students, African American and Hispanic high-risk students, and finally, other factors that affect persistence. In the fifth section, literature pertaining to academic identity and its relationship to persistence is presented. The sixth section reviews literature pertaining to identity theory, the theoretical framework that guides the study. The final section contains the research question and hypotheses.

#### STUDENT/FACULTY INTERACTION AND PERSISTENCE

The effect of student/faculty interactions on student persistence has been a topic of research for many decades. Tinto (1987) argued that student/faculty interaction both inside and outside of the classroom strongly influences student development. Regarding persistence Astin (1984) wrote, “a large body of research suggests that the best way to involve students in learning and in college life is to maximize the amount of personal contact between faculty members and students” (p.162) Conversely, if students do not have a significant amount of interaction with faculty, this can negatively affect persistence and student outcomes (Tinto, 1987; Astin, 1993; Pascarella and

Terenzini, 2005; Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J. & Associates, 2005).

Faculty are one of the foremost agents of socialization students in college have (Pascarella and Terenzini, 1991), and there is a wide range of research that indicates the benefits to students academically, socially, and in regard to self-confidence, satisfaction and retention. (Astin, 1993; Lamport, 1993; Sax, Bryant and Harper, 2005; Pascarella and Terenzini, 2005; Lillis, 2011; Cole and Griffin, 2013).

Pascarella and Terenzini (2005) concluded through decades of their own research on student/faculty interaction that student persistence, degree completion, career choice and educational aspirations are all positively affected. A study by Marie Good and Gerald Adams (2008) found that students who had supportive relationships with faculty had higher average grades and perceived academic ability.

An earlier study by Pascarella and Terenzini (1976) also points to the impact of student-faculty interactions on persistence in their study which found a positive relationship between student/faculty interactions and GPA. Further, students who interacted with faculty performed better academically than their predicted academic performance based on their SAT score when entering college. Conversely, students who did not meet with their faculty or interact with them regularly did not perform as well academically.

Though it is standard for faculty to make themselves available during office hours, many students will not take advantage of this resource. Faculty can further

encourage student/faculty interaction by tying a portion of the students' classroom grade to a student's out-of-class discussion with the instructor during office hours. Romanski (1987) found that "interaction with faculty during the last two years in college serves as the best predictor of persistence...Faculty serve as the most crucial variable in influencing students to persist and complete their educational goals" (p.131) When students interacted with faculty more often, Romanski (1987) noted that their overall satisfaction with college also increases which is related to increased persistence.

At Missouri Western State College, Wang and Grimes (2000) conducted a study that showed a correlation between student/faculty interaction and persistence. The results of their survey showed that of the students who participated in a program created to increase persistence, over 50% of the students had discussed personal concerns with faculty either frequently or occasionally, and over 92% had interacted with a faculty member outside of class. Part of the goals of this program was to increase faculty involvement with students to foster academic success. The program resulted in a 10% increase in the persistence of freshman and 21% increase in the persistence of students who were at-risk academically.

When engaging with students, instructors need to be mindful that students regard faculty advice on education, career aspirations and life with very high regard, and these directives from those they see as educational mentors can greatly impact their future educational and life choices. Endo and Harpel (1983) found that students who

perceived faculty to be the most concerned about them and developed professional relationships with their faculty member because of this experienced the greatest academic results. In a related study, Kim and Sax (2011) found that interaction with faculty also impacts students differently dependent on their major and sub-environment at the university they attend. Their research suggests that student-faculty interaction plays a critical role in the major a student will pursue.

While past studies have looked at the general academic outcomes that student/faculty interaction have in terms of persistence, more recent studies have focused on the conditional aspects of student/faculty interaction and how it influences specific sub-populations of students as characterized by factors such as gender, race or social class. (Kim, 2006; Kim and Sax, 2009; Mack, 2012). Sociological theory would agree that learning is achieved through socialization, thus strengthening the impact that interaction can potentially have on a students' behavior academically.

Because not all student needs are the same, student/faculty interaction will vary dependent on the student, their background and their demographic. Research by Pascarella and Terenzini (1976) found that the frequency of interactions that freshman students had with faculty positively impacted their academic outcome. Sax et. al (2005) found that female students responded to student-faculty interactions with greater academic success compared to male students. However, according to Kim (2006), student-faculty interactions benefited white students' educational experience but did



not benefit African American, Asian or Latino students. This illustrates how student-faculty interactions may affect student populations differently.

Sax and Kim (2009) also found that course-related student-faculty interactions benefited all students positively, but had a more significant effect on students from an upper middle class background compared to students from middle class families.

Schreiner et. al. (2011) suggest that this may be due to high-risk students' perception of the institution's commitment to their welfare. Students who are considered high-risk upon entering college perceive the institution's commitment to their welfare as being evidenced by the actions of the staff and faculty. Many forms of student-faculty interaction appear to have general effects for all students, but there are conditional effects of student-faculty interaction that vary by gender, race, social class as well as parent's education. This suggests that the type of student-faculty interaction will vary in its effectiveness for different student sub-populations as well as by the type of university and major a student chooses (Sax and Kim, 2009; Carter, 2006). According to McKinney, Saxe and Cobb (1998, p.2) "Out of class professional socialization may be particularly important for students who are members of marginalized groups (e.g. minority, working class, first-generation college students)." Because students in these groups are less familiar with what is expected of them in college, increasing the frequency and quality of interaction between faculty members with these students will result in their being more likely to persist in their education (McKinney, et. al, 1998).

According to Braxton et al., (2004), every interaction a student has with a faculty member shapes their perception of the university's concern for their welfare—whether positively or negatively. The problem is, compared to other students who are deemed better academically prepared, high-risk students are less likely to interact with faculty despite their need more than any other student to do so. The key to facilitating this interaction—especially for the high-risk student is facilitating the meaningful connection the student perceives with their faculty member. If the student perceives a connection with their faculty member, they will be more likely to interact with them (Shreiner, et. al, 2011).

While the frequency and type of interaction between students and faculty are important for persistence, meaningful interaction between students and faculty is not the norm. Students do not take advantage of resources available to them—most notably, interaction with faculty as a resource (Pascarella and Terenzini, 1991). If students can connect with faculty to express academic or life concerns and interests, they will be more likely to be successful in their academic pursuits. Anaya and Cole (2001) found that the frequency of student/faculty interactions about non-academic – related topics positively impacted student outcomes. The more accessible students perceived their professors to be, the higher their reported level of academic achievement was.

Student may face innumerable life stressors such as marital problems, legal issues or financial challenges. Dallimore-Nordquist's qualitative study (1994) revealed that students felt less isolated and more motivated to succeed when faculty interacted with them and asked about their lives and how they were doing. Resources on campus that are equipped to help students handle life stressors are in place, but many times, students are unaware that they exist, how to access them or who to talk to. If faculty members are aware through interaction with their students of these life stressors that might be interfering with academic success, they can point students to resources on campus that can help the student deal more effectively with their situation (McKinney, et. al, 1998). When faculty members are knowledgeable concerning resources on their campus as well as the specific individuals in the various student service departments, this can unlock the opportunity for students to get the support they need from the campus in order to remain successful in their studies despite the life stressor they are experiencing (McKinney, et. al, 1998; Kaslbeek, 1989).

#### FIRST-GENERATION COLLEGE STUDENTS AND PERSISTENCE

While whites and Asians have higher persistence rates than do other students of color, research has repeatedly shown that socioeconomic status is the second most powerful indicator of college success after high school grade performance. Parental education, which is an indicator of socioeconomic status, is also highly related to

persistence, which is why students who are first-generation college students have become the subject of much attention related to retention efforts. (Reason, 2009)

First generation college students have been described as students whose parents did not attend an institution of higher education (Billson and Terry, 1982). According to Lohfink and Paulsen (2005) “first-generation college students are disproportionately overrepresented in the most disadvantaged racial, income, and gender groups, and thereby inhabit intersecting sites of oppression that uniquely position them within [the] broader context of educational stratification” (p. 409) Although enrolling in college to begin with is a very significant step for first-generation college students, persistence of this population remains more difficult than for those whose parents attended college. Choy (2001) argued that “among those who overcome the barriers to access and enroll in postsecondary education, students whose parents did not attend college remain at a disadvantage with respect to staying enrolled and attaining a degree” (p. 4) In their research, Lohfink and Paulsen (2005) and Ishitani (2006) found this disadvantage of first-generation college students to persist until graduation most notably due to lack of family guidance or financial support. Most first-generation college students disproportionately are either Black or Hispanic and are from low-income households, all of which are factors that further place these students at-risk for completing their postsecondary degree (Chen, 2005; Engle & Tinto, 2008). According to Engle & Tinto,

2008, first-generation students were more likely not to persist in their education after their first year of college compared to students whose parents had attended college.

In their study, Lohfink and Paulsen (2005) found that family income was a factor influencing the persistence rate of first-generation college students. The higher the family's income, the more likely the student was to persist. The study also found that first generation students who were also Hispanic were 35.4% less likely to persist than first-generation college students who were white. A longitudinal study by Ishitani (2006) confirms Lohfink and Paulsen's research with findings that show "relative risk of departure in the first year was 71% higher for first-generation students" (p.444). Additionally, in a national study conducted by Chen (2005), first-generation students were more likely to struggle choosing a major, more likely to experience difficulty in their course work and grade point averages and more likely to withdraw from their classes, all of which affect college success. This review of the academic performance and long-term educational commitment of the Black, Hispanic and White students in the study revealed that parental education and support as well as socioeconomic status influenced educational attainment—especially in regard to postsecondary education. Educational success or failure seemed to be contingent in this study upon cultural background.

Wells (2008) sought to measure whether or not social and cultural capital differs by racial/ethnic group among undergraduate college students. The variables used to

measure social and cultural capital were parental education, students and parents' expectation of degree attainment, educational aspirations, educational materials accessible in the student's home, standardized test preparation and parental involvement. As a form of social and cultural capital, Wells' research showed that parental education was found to significantly impact persistence in college. Additionally, the study found that Hispanic and African American families have less education and social and cultural capital than do white families. In their study of black and white men, Chiu and Khoo (2005) found that half of the variance in postsecondary education attainment between the two groups was due to parents' education. A similar study by Teachman & Paasch (1998) found that when parents have advanced degrees, they model that they value education to their children and this becomes a benchmark for children to follow as they pursue their own education.

A similar study by Bowen, Chingos & McPherson (2009) found that students whose parents had not attended college were less likely to attain a bachelor's degree than students where at least one parent had a bachelor's degree. According to Nelson (2009), students whose parents were college-educated were able to inform their children about the benefits of having a college education, and they were able to better support their children while they navigated their own academic goals. Parents who did not attend college have less direct knowledge about the benefits a college education can bring. Additionally, some students may feel torn between family obligations and

expectations or pursuing a degree. This study validates earlier research confirming the disadvantage first-generation college students have compared to students whose parents attended college—especially those who are also Hispanic or African American. Not only will the culture of college be foreign to these students due to their lack of family background to prepare them (Cushman, 2007) but many even experience a form of survivor’s guilt for succeeding in college, according to Piorkowski (1983). “Frustration, isolation, and criticism from family members” may make succeeding seem like something that causes a loss of connection to their family.

#### AFRICAN AMERICAN AND HISPANIC COLLEGE STUDENTS AND PERSISTENCE

Marginalized groups such as African Americans and Hispanic groups experience forms of inequality in many social spheres including higher education (Young, 2000). Compared to whites, African Americans do not persist as well as their peers in similar majors. Additionally, compared to whites, African Americans lag behind in college participation and retention (Levin, et. al., 2007; Noguera, 2003). This suggests that there is a lack of engagement between these students and their college environment. One reason given for this is that even the brightest minority students may feel inadvertently discriminated against (Carter, 2006). This is not a new feeling for African Americans—especially males who are more likely than other racial populations to be labeled with behavioral problems. Labeling of this sort can foster a form of learned helplessness that

perpetuates the lack of success African American males experience in educational settings both prior to and while in college (Jackson & Moore, 2006; Noguera, 2003).

Other research links a lack of positive role models and lack of support from the school and larger society to the inferior performance African Americans display in their educational aspirations (Bailey and Paisley, 2004). Though not without opposition (Tyson, Darity, & Castellino, 2005), one view that seeks to explain African American educational disengagement is the common perspective among the African American adolescent community that those who excel in school are abandoning their Black identity and cultural norms in favor of “acting White”(Lundy, 2003). Lundy (2003) posits that this may be truer for African American males than females. In popular media rarely are African American men portrayed as successful academically, but instead, the identity that is proliferated is that of negative stereotypical African American men who do not finish their high school education, are unemployed or are regularly in the criminal justice system. This is how these young African American men view themselves and their prospective futures (hooks, 2004). They lack an academic identity.

Consequently, the human capital that America is losing with the African American population, particularly males, is contributing to the loss of skill-based knowledge needed to increase Americans’ competitiveness in the global marketplace. Human capital is the investment one makes in education, health or mobility, and cultural capital refers to the norms and values that are passed down from one



generation to the next. This is both directly and indirectly influenced by socioeconomic status and is a factor that will serve to determine the choices a person makes regarding their educational path. Social capital reflects the relationships or networks an individual has that make success more of a possibility because of the knowledge gained from these relationships and the access or resources a person will have because of these relationships (Rowan-Kenyon, 2007). In a study which draws from data from the National Education Longitudinal Study, students were followed from eighth grade through eight years out of high school to measure the transitions students experienced in their lives and what factors influenced their choices regarding their educational pursuits. Students with higher measures of human and social capital were more likely to enroll in college immediately after high school than were those who were from lower socioeconomic statuses (Rowan-Kenyon, 2007). One recommendation for improving the educational attainment for African Americans at the postsecondary level is to increase interaction between faculty and their African American students (Palmer et. al, 2010).

Although Hispanics are the fastest growing racial group in the United States, they are “currently the most educationally disadvantaged group in America “(Roderick, 2002, p.123). Research has shown that college retention and graduation rates for Hispanics, particularly new immigrants, are lower than those of whites. Morales (2009) found that one reason for this was that Hispanic students were intentionally resisting instruction as well as resisting academic normative behaviors due to not feeling a sense of belonging

and relatedness at their college. When given the opportunity to have frequent interaction with a faculty member one-on-one, immigrant students saw their faculty members as people who validated them, helped build their self-esteem and as people who gave valuable information (Morales, 2009). This issue is of great importance to the greater society based on the sheer amount of rapid population growth of Hispanics in the United States (U.S. Census Bureau, 2012).

Behnke, Piercy and Diversi (2004) found that Hispanic youth whose parents had a college education were more likely to aspire to finish their own college education. However, although Hispanic families' aspirations for their children were high, Hispanic families where the parents were not college educated saw many barriers to their children achieving their educational goals. Many Hispanic students in the study saw work schedules and difficulties with English as being daunting hurdles to achieving a college education. This feeling was mirrored by the students' parents who struggled to help their children navigate the college application process which impacted their own confidence about their children going to college. English as a barrier hindered parents' ability to encourage their students in their academic pursuits, which decreased the academic success of those students who did enroll in college.

A study by Tamara Olive (2008) examined the desire for higher education among Hispanic college students who were enrolled in an academic support program. In Olive's study, a qualitative approach was used to gather data on first-generation college

students. Of the participants studied, the results indicated that the desire for higher education was motivated by external factors of the participants' reality, specifically, financial stability. However, when the challenges of college became daunting, the participants began to view education as a less than ideal goal.

Sanchez, Reyes, and Singh (2006) examined possible explanations for low retention rates of Hispanics in college. They identified some of the most salient reasons for as being low family involvement and support for education, low family educational level and low socioeconomic status. In their research, they found, however, that Mexican American students who had a non-parental adult such as a faculty member who supported the students' educational goals, benefited academically. This support varied from emotional support to informational guidance to modeling successful scholastic behavior.

#### OTHER FACTORS THAT AFFECT PERSISTENCE IN HIGHER EDUCATION

While there are many factors that influence student persistence, literature points to several other factors that are salient. Non-traditional students are often identified in the literature as being students who are over the age of 24 (Bean and Metzner, 1985, Rovani, 2003). These students often have family and work responsibilities that can often interfere with successfully pursuing educational goals. Older students, especially those who are female, have a greater number of family and financial concerns than their younger male counterparts, making them at higher risk for

completing their post-secondary education (Wawrzynski and Sedlacek, 2003). They are returning to school or continuing in their education, many times due to a career change or to advance in their career. They may have a lot of work experience, but lack the education needed to advance. Traditional students have a lot to learn from their non-traditional classmates, and many appreciate the depth of understanding their wealth of experience brings to the classroom. Non-traditional students are self-directed, have life experience, take responsibility, are task motivated and ready to learn. They often have a higher level of maturity than more traditional students, and they enjoy a sense of cooperation in their educational experience (Byman, 2007).

The high attrition rate of non-traditional students in higher education overall suggests that there is a disconnect between what non-traditional students need to be successful and what the academic environment is providing them. Non-traditional students by virtue of the fact that they are non-traditional will have a gap in their educational development journey, which will influence their knowledge base and skills necessary to be successful in higher education (Kenner and Weinerman, 2011).

Many students live off campus and commute long distances to attend classes. In order to avoid a long commute, these students are choosing to take courses online. Among students who take courses entirely online, 70% of these students are characterized as non-traditional students, and fewer than 50% of students who take

courses online finish their courses (Graham and Gisi, 2000, Rovani, 2003; Betts, Hartman, and Oxholm, 2009).

Financial need in various forms can also influence student persistence. While many students with financial need receive financial aid, some find it necessary to work while in college to pay for expenses. Astin (1975) found that students who work less than 25 hours a week increased their chances of completing college, and students who worked on-campus showed a stronger connection to their college campus, thus positively influencing persistence. However, more time spent working creates less time and energy for college course work, so the amount of time spent working will either positively or negatively affect persistence in undergraduate students. While taking care of dependents may have a positive motivational effect on college persistence, juggling home and job responsibilities with school work contributes to a higher level of stress (Leppel, 2002).

Transfer students can be defined as students who move from one post-secondary institution to another in their pursuit of a bachelor's degree. For these students, the prospects of completion are more tentative than those of students who remain enrolled at the original institution they began their studies as their attrition is 10-15% higher than that of non-transfer students (Coston, Lord and Monell, 2013). Transfer students often have difficulties connecting to other students and faculty or have difficulty navigating the University campus and its various resources, causing many

of them to fail before the end of their first transfer year, thus putting them more at-risk for academic success compared to non-transfer students (Coston et. al, 2013).

It is easy to agree that a single intervention cannot be assumed to be effective for all students; however, men have an advantage in college persistence over women especially when situational factors such as marriage or care of children are present. Studies show that factors such as marriage and having children will increase the probability that men will complete, but will decrease persistence for women (Reason, 2009; Leppel, 2002). Society supports men furthering their education in order to attain a career that can support the family. However, the dominant stereotypical gender role mentality held by much of society puts a mother in jeopardy of completing her education due to her responsibility to care for her children. The probability of living on campus can also influence persistence rates. While overall persistence rates are higher for women than for men, research shows that on-campus residency report more mixed findings between the genders (Reason, 2009).

#### *Women's Colleges and Persistence*

The type of institution that students attend influences persistence and student success. Women's institutions positively influence persistence for female students just as historically black colleges improve persistence for African American students. Literature suggests this is due to college environment characteristics that positively influence a sense of inclusion that contributes to academic achievement (Reason, 2009;

Pascarella and Terenzini, 2005). Students who may feel marginalized at a predominantly white or co-educational institution will have an advantage at these institutions which is largely due to the educational environment itself. Research is inconclusive regarding Hispanic students who attend Hispanic-serving institutions, though campus climate is a predictor of persistence for Hispanics at predominantly white institutions (Reason, 2009, Pascarella & Terenzini, 2005).

Despite impressive advances for women educationally, politically, at home and in the workforce, women are still very much disadvantaged compared to men due, in many ways, to unyielding gender norms and societal expectations (Kinzie, Thomas, Palmer, Umbach & Kuh, 2007). At coeducational institutions, lower numbers of female administrators and faculty reduces the number of leaders on campus who might serve as mentors for female students (Nidiffer & Bashaw, 2001). Additionally, what Whitt, Edison, Pascarella, Nora & Terenzini (1999) and others refer to as the “chilly” campus climate at coeducational institutions, influences undergraduate women to report underperformance academically due to their perception of a campus that is less supportive of academic and social needs (Pascarella et. al, 1997) This may be in part because of an environment that in some cases, dampens self-esteem and self-confidence and participation especially in fields such as math and science where women are underrepresented compared to men (Nelson & Rogers, 2004). However, qualitative studies on women’s colleges show that the institutional environment fosters a higher

quality learning environment for women that motivate them to be more likely to choose male-dominated majors in the physical sciences or math (Sebrechts, 1992; Sharpe & Fuller, 1995). When compared to female students who attend coeducational institutions, undergraduate women at women's colleges reported a higher level of involvement on campus (National Survey of Student Engagement [NSSE], 2003), and a higher level of self-confidence and perceived academic ability (Kim, 2002; Kim and Alvarez, 1995). Kinzie, Thomas, Palmer, Umbach and Kuh (2007), the data revealed that female students at women's colleges reported more understanding of themselves and others as well as a self-reported greater understanding of diversity compared to the women in the study who attended coeducational institutions. The benefit of a peer environment at a predominately women's university is positively correlated with feeling academically challenged, critical thinking, gains in leadership experience and job skills compared to women who attend co-educational institutions. These are all factors that are related to persistence (Reason, Terenzini, and Domingo, 2007; Kinzie, Thomas, Palmer, Umbach & Kuh, 2007; Kim and Alvarez, 1995).

#### ACADEMIC IDENTITY AND PERSISTENCE

"Learning involves the whole person; it implies not only a relation to specific activities, but a relation to social communities -- it implies becoming a full participant, a member, a kind of person...To ignore this aspect of learning is to overlook the fact that learning involves the construction of identities (Lave and Wenger, 1991)."

In their research, Burke and Reitzes (1991) found a strong relationship between student identity and role performance. They found that stable self-meanings or



academic identity connected students to consistent lines of activity. Those who adopted a strong academic identity as seen in their level of commitment to their studies were more likely to perform well academically. Student/faculty interaction can lead to greater academic identity formation, thus impacting academic behavior. According to White and Lowenthal (2011), students who have a strong sense of academic identity will make an effort to be more involved in their campuses and will seek out opportunities to learn and grow by interacting with faculty in productive ways. Through a more developed understanding of the sociocultural factors that influence identity, faculty may be able to help students in the creation of new identities. In other words, if faculty are able to assist students in their various transitions to the campus culture through quality instruction and interaction, students are more likely to adjust to the sociocultural literacy of college success (White and Lowenthal, 2011).

If students see themselves in the role of a successful student, they will behave in accordance with their perception of that role and what it entails. In their early research, Reitzes and Burke (1980) collected data from undergraduates at a large state university to investigate whether or not their college student identity impacted their behavior in college. Specifically the behavioral variables of educational expectations, participation in social activities and academic performance were presented in their relation to the students' perceived college identity. Their findings showed that although different identities within the concept of what it means to be a college student were present

between participants, those who had a college identity were more likely to perform in what was seen as “normative characteristics” of that role compared with participants who did not have a college identity. What was especially interesting was that those whose identity was on a higher hierarchical level of a college student identity, such as an identity of a college student in graduate school, were more likely to place greater importance on academic behavior in order to remain identity relevant. Such students might see non-academically-related social activities as identity irrelevant or even damaging to their identities.

Arthur, Shepherd and Sumo (2006) found a striking resemblance between students’ attitude toward academics and academically-related behaviors. Diligence as an academic behavior is important for student success and can be described as the act of doing things effectively and relentlessly to the best of one’s ability (Covington, Spratt, and Omelich, 1980). Regardless of the starting place or the struggles an individual or group may have compared to another, diligence can allow students to achieve educational success. If student’s levels of diligence, study habits, and classroom participation, all modifiable behaviors, have implications for academic performance, this suggests diligence has a direct relationship to academic success, which, in turn, is a predictor of persistence (Reitzes and Burke, 1980; Arthur, Shepherd and Sumo, 2006; Hoffman, Vargas and Santos, 2008).

Many would argue that diligence is the key element to success in one's educational pursuits, but education is not an equal opportunity venture due to factors related to race, socioeconomic status, age or parent's education that put some groups at a disadvantage over others. According to Hoffman, Vargas and Santos (2008), students who have been taught these skills and have implemented them routinely prior to coming to college have a much easier transition to success in college than students who did not grow up rehearsing these skills. White students are more likely to come from a culture around which the culture of college is built, whereas minority students are less likely to come from a culture that taught them how to practice the norms required for college success (Anderson, 2005). Conversely, minorities are often taught "a number of culturally-imbued discursive habits that developed over time as resistance to the oppression represented by white culture. So, not only are minority students often not taught the forms of discourse expected in the University, they sometimes develop a counter discourse to it (White and Lowenthal, 2011)."

White and Lowenthal (2011) argue that "examining the issues of language, culture and identity at the university setting seems all the more important and relevant to understanding student performance and happiness in this unique setting." According to Côté & Levine (2002) identity should be viewed as a dynamic rather than a static entity. Identities are influenced by culture and may shift dependent upon the context one finds themselves in at different points in their lives. These shifting identities can even be in

opposition to one another. This is important for faculty to be aware of so that they can help minority students, in particular, to develop an academic identity without abandoning their other identities (Nasir & Hand, 2006; Park, 2008).

A positive academic identity is strongly correlated with successful academic performance (Berzonsky & Kuk, 2000). As students increase their participation in the academic community, “they further develop their academic literacy as well as academic identity (Lave & Wagner, 1991).” Conversely, however, Berzonsky & Kuk (2002) found that students who lacked a strong academic identity also performed poorly on other areas important for college success such as conscientiousness and persistence with academic tasks that they found challenging. These students were also shown to be more likely to avoid work and life problems. For some students, a strong academic identity was unappealing as it was, in their view, “becoming the sort of conscientious person that the academy rewards seems to mean turning oneself into a snob or a nerd, quite possibly alienating oneself from friends, relatives and romantic partners (Berzonsky & Kuk, 2002).”

Research on African American students at historically black colleges supports the idea that academic identity is shaped either positively or negatively by a student’s academic experience whether or not this experience is real or perceived (Dinwiddie and Allen, 2003). A strong and positive academic identity, therefore, can be shaped by a positive academic experience. Wertsch (1991) suggests that people may be taught to

transition to new cultures and new environments through the instruction of the sociocultural factors that influence the development of new identities. In their research, Arthur, et. al (2006) concur with this mindset when they suggest that in order to encourage academic performance in accordance with a strong academic identity, it is not enough for faculty to simply advise students to be more diligent. Rather, their findings show that when students are provided with measures of how to better apply themselves academically in order to become more diligent in their studies, this will impact persistence. Many minority students may resist assimilation to a new identity if they perceive it as an opposition between “us” and “them” (Delpit, 1992); however, if students can foster their cultural identities while still being successful participants in the university, this will allow them to develop an academic identity without feeling as though they have left behind their cultural identity in favor of obtaining a college degree (Tierney, 1999).

Faculty can encourage strong academic identities in their students, which will equate to more diligent behavior in their students (Reitzes and Burke, 1980) through student engagement in activities, classroom discussion and intentional conversations whose focus is to remind students why their time is important to their academic success. Identities are fluid and are continually changing, and faculty can support students’ understanding of the role academic identity plays in college success (Gee, 2002; Gosine, 2002). A large part of achieving academic success is the motivation to do

so. If, through purposeful interaction, faculty can help students connect the value they place on their education and chosen career aspirations to motivation, this can translate to behaviors that promote student success. Consequently, these students will be more likely to persist in their education irrespective of inevitable academic and life challenges (Alderman, 2008; Einarson and Matier, 2005).

#### THEORETICAL FRAMEWORK

“As people learn more about who they are, they are able to act more authentically and consistently and are able to learn techniques that reveal the personhood from which good teaching comes (Schreiner, et. al, 2011).”

Identity theory in sociological social psychology is of particular interest to this study as it pertains to the academic identity formation of students including those who are considered high risk to persist in their educational pursuits in the university environment. Like all college students, these students employ many aspects of the self. They are workers, members of families, some of them parents, some are the first in their families to attend college, others are returning to college after many years, some are from lower socioeconomic classes, some are part of racial minority groups and all of them are college students who are marginalized in one aspect or another. In discussing the students in their role as college students, identity theory provides a useful framework to ask what types of meaning these students attach to their individual selves in the role of a student in this culture of the university of which they are a part. To what degree have they identified as a student, and how is this identification, or lack thereof,

reflected in the behavior that the students enact in this role as part of their interactions with other students, support staff and professors at the college (Burke and Reitzes, 1991)? Identity theory also points to the idea that if students who are considered high-risk can adopt a process of identity formation as successful students who persist in their college education, it will be more likely they will exhibit behaviors consistent with that identity. The greater their commitment to this identity, the greater their motivation will be to continue to enhance this identity and derive a positive sense of self, or self-esteem, because of it. The more the students are given positive feedback in this identity, the higher their self-esteem as a result of this identity will be (Burke and Reitzes, 1991).

#### *Self-verification of Identity*

The central cognitive process that takes place in the decision to commit to an identity is a concept identity theory calls self-verification. Self-verification takes place when the identity is activated (Stets and Burke, 2000). Self-verification or a greater feeling of control over one's environment is also considered a motivator according to identity theory. If students can identify with the role of successful students through the process of self-verification, not only will they derive a greater self-esteem from this identity but they will also increase in their feeling of control over their lives, in particular, as it pertains to their academic journey. In this way they will begin to understand the importance of setting academic goals for their future and they will work diligently to attain them. Students will want to keep the perceptions they have for

themselves in the new identity of successful students consistent with their standard of behavior, so they will take action to modify their behavior to maintain this consistency in spite of situations that may attempt to influence them otherwise—distractions with friends or extracurricular activities, or even small setbacks in their long-term goal of persisting in their college education and attaining a degree. The self-verification process that links the student to their academic goals will keep the behavior consistent with the identity they are forming as a successful student, which will encourage a higher level of persistence (Burke and Reitzes, 1991; Armantrout, 2012).

### *Identification of Identity*

According to Stets and Burke (2000), identity theory can be explained as the self having multiple parts, or identities that operate simultaneously in different situations. An individual will attach meaning to self while performing in a role defined by the culture they are a part of. In identity theory, this process is called identification. According to identity theory, one's identity is essentially formed through this process. Essentially, there will be a "match between the individual meanings of occupying a particular role and the behaviors that a person enacts in that role while interacting with others" (p. 227). The greater identification the person has with the category they are a part of, the more likely the behaviors that are associated with that category will be exemplified. In this way, "self exists within society, and is influenced by society" (p. 232). Therefore, the greater identification a student has in their role as a student, the more



likely they will be successful in that role and consequently, the more likely they will persist in their college education. They will want to keep the perceptions they have for themselves in the new identity of successful students consistent with their standard of behavior, so they will modify their behavior to maintain this consistency in spite of situations that may attempt to influence them otherwise such as distractions or even small setbacks in their goal of attaining a degree (Burke and Reitzes, 1991; Romero, 2010; Kappe, 2012).

#### *Salience Hierarchy of Identity*

The term “salience” is used to indicate the activation of an identity in a situation. “In identity theory, salience has been understood as the probability that one identity in an individual will be activated over another (Stets and Burke, 2000, p. 230). The idea of commitment to an identity is also important. There are two aspects of commitment as it pertains to identity theory. The first is of a quantitative nature and suggests that the more people an individual is tied to through an identity, the more likely that identity will be prevalent in the individual. In other words, the more a person’s identity is embedded in the individual’s social structure, the stronger that individual’s commitment to the identity will be. (p.230)

The second aspect of commitment in identity theory is qualitative in nature, and refers to the strength of the ties the individual has with others in the social structure. “Stronger ties to others through an identity lead to a more salient identity” (p.230).

Could students be more likely to persist in their college education if they felt a greater connection to the faculty at the college they attend? Would this be a key to their success in college? If high-risk students increased their social circle in the arena of academia, the aspect of the self would be shaped according to this social circle. Because faculty are such an integral influence in a student's life, a salient identity as a student could possibly be achieved through greater faculty- student interaction. Through this interaction, the student would adopt a formulation of self as a successful student and will be more likely to persist in their academic pursuits. Stets and Burke (2000) argue that the self can be examined through the lens of identity theory in an effort to develop a theory of the self and how cognitive and motivational processes emerge based on the category or group and on role.

Identity theory proposes that a key concept to consider is salience hierarchy, which looks at which role an individual will choose to execute when they have the option of choosing from a few roles they deem appropriate for a given situation. In the case of students who are considered high-risk for persistence in college, will these students choose the role of the successful student who attends class regularly, communicates with professors, uses campus resources, prepares for exams and completes assignments properly and on time? According to identity theory, the individual must choose to invoke an identity in the situation. "The identities at the top

of the salience hierarchy are more likely to be activated independent of situational cues (Stets and Burke, 2000, p. 231).”

## RESEARCH QUESTION AND HYPOTHESES

The research question that guides this study is “What is the relationship between student-faculty interaction, academic identity and persistence of high risk first generation African American and Hispanic undergraduate students at Texas Woman’s University in Spring 2010?”

### *Hypotheses*

The following hypotheses will be tested:

H1: Controlling for other factors, students who interact more frequently with their instructors will be more likely to have a higher level of academic identity.

Anaya and Cole (2001) found that the frequency of student/faculty interactions positively impacted student outcomes. The more accessible students perceived their professors to be, the higher their reported time and energy devoted to academic achievement was.

H2: Controlling for other factors, the higher a student’s perception of the quality of their interaction with their instructor is, the more likely they will be to have a higher level of academic identity.

If faculty are able to assist students in their various transitions to the campus culture through quality instruction and interaction, students are more likely to adjust to the sociocultural literacy of college success. (White and Lowenthal, 2011)

H3: Controlling for other factors, students who interact more frequently with their instructors will be more likely to show persistence.

According to Tinto (1987) and Pascarella and Terenzini, (2005) student/faculty interaction both inside and outside of the classroom strongly influence persistence.

Conversely, if students do not have a high amount of interaction with faculty, this can negatively affect persistence.

H4: Controlling for other factors, the higher a students' perception of the quality of their interaction with their instructor is, the more likely they will be to show persistence.

Endo and Harpel (1983) and Shreiner, et., al (2011) found that students who perceived faculty to be the most concerned about them and developed professional relationships with their faculty member because of this, experienced the greatest academic results and were more likely to see their institution as being committed to their success.

H5: Controlling for other factors, the higher a student's level of academic identity is, the more likely they will be to show persistence.

In their research, Burke and Reitzes (1991) found that students with a strong academic identity were more likely to show a strong commitment to their academics.

The implication of their research is that a student with a high level of academic identity is more likely to persist in their academic endeavors.

H6: The effect of frequency of student/faculty interaction on persistence is mediated by academic identity.

According to Sax, Bryant and Harper (2005), student-faculty interaction in the classroom positively influences interaction between students, improved grades, class discussion and student confidence, all of which are, or are related to, factors of academic identity.

H7: The effect of quality of student/faculty interaction on persistence is mediated by academic identity.

According to Shreiner, et., al (2011), students' perceptions of the quality of their interaction with faculty had an impact on students' belief in their ability to succeed, which is a factor related to academic identity.

## CHAPTER III

### DATA AND METHODS

This chapter is organized into six sections. The first section describes the data and methods and includes an explanation of the data, the sample population, and the instrument used in the study. The second section outlines the variables used in the study. The next four sections present information related to the setting, data collection, data analysis, and the limitations of the study, respectively.

#### DATA

The study uses existing data from the National Survey of Student Engagement: The College Student Report (NSSE), supplied by the Office of Institutional Research and Data Management at Texas Woman's University. All data are de-identified. The Office of Institutional Research and Data Management at Texas Woman's University provided two data files, one with the survey results from the National Survey of Student Engagement and another with re-enrollment data to measure persistence and graduation rates. The two files contain a unique identifier for each participant in the survey. The files were matched on this unique identifier and then merged for the purposes of the analysis. This allows persistence to be measured for each respondent.

## SAMPLE

The participants in the survey were undergraduate students who were enrolled at Texas Woman's University in Spring 2010. A total of 1330 undergraduate students participated in the study. Of these participants, 183 meet the criteria for students considered high-risk. For the purposes of this study, high-risk students are defined as students who are first-generation college students and also identify as African American or Hispanic.

## INSTRUMENT

The instrument used for this study is the National Survey of Student Engagement: The College Student Report (NSSE). The NSSE is the premier national data set used to study student engagement and has representative data for Texas Woman's University on student-faculty interaction. There are 113 items in the survey. The survey also generates descriptive data including socio-demographic information about the student participants. This data is collected by NSSE from colleges and universities both in the United States and internationally to measure factors associated with student engagement. The instrument is primarily composed of forced choice, Likert-scale questions and is administered online to randomly selected students at the institution where the study is being conducted. 1330 student participants completed the survey in Spring 2010 at Texas Woman's University with a response rate of about 33%. Human

participants were protected since no names or inappropriately identifying information were retained by NSSE and the data was de-identified.

The data as a source of information on student engagement is advantageous because it is collected from a sample of the entire student population of undergraduate students at Texas Woman's University. This tool documents dimensions of quality in undergraduate education and provides information and assistance to colleges and other organizations to improve student learning.

The primary activity of The National Survey of Student Engagement: The College Student Report (NSSE) is to annually survey college students from various educational institutions in order to assess the extent to which they engage in academic behaviors associated with high levels of scholastic achievement and personal development. The survey is well validated as an instrument of measuring student engagement and is considered highly reliable by the international community of higher education (Kuh, 2004). A disadvantage of using this secondary source of data is that the measures used for student interaction were measures that were already collected and not measures that could be chosen specifically for this study. Another disadvantage is that there is no measure for social class available in the data. Additionally, the response rate for the NSSE data collected at TWU in Spring 2010 was 33% according to the Office of Institutional Research and Data Management at TWU. While this response rate is acceptable, it would be ideal if it were higher in order to be more representative of the



undergraduate student population at TWU. Additionally, over 60% of respondents were classified as seniors, which does not evenly represent the entire demographic of students at Texas Woman's University. For reasons of cost and the international reputation of the validity and reliability of the instrument, the NSSE data at Texas Woman's University is deemed a good fit for this purpose of this research.

## VARIABLES

### *Dependent Variables*

For the purpose of this study, persistence is measured by combining the variables undergraduate graduation in Spring 2010 (*Graduated\_AY\_Num*) with undergraduate re-enrollment in Fall 2010 (*Ret10FA\_Num*). The new variable *Persistence* was coded as a dichotomous variable (persisted =1; did not persist = 0). This information was provided by the Office of Institutional Research and Data Management at Texas Woman's University. Because the data were de-identified upon receipt from the Office of Institutional Research and Data Management at Texas Woman's University, it is not possible from the data to ascertain what happened to the students who graduated in Spring 2010 beyond graduation. It is important to note, however, that if the students who graduated re-enrolled as graduate students, they have not been included in the group of student participants who re-enrolled in the fall 2010 since the participants include only undergraduate students. Additionally, if spring 2010 graduates re-enrolled as undergraduate students in fall 2010, it can be assumed that these students'

participation was not duplicated in the study as indicated by the Office of Institutional Research and Data Management at Texas Woman's University.

Academic identity will serve the dual role of both a dependent variable as well as an independent variable as the relationship between student-faculty interaction and persistence is mediated by academic identity. A variable labeled *AcIdentity* is measured by seven indicators in the form of responses to the variable *clquest* (asking questions in class and contributing to class discussions); *rewropap* (preparing two or more drafts of a paper); *occgrp* (worked with classmates outside of class to prepare class assignments); *classgrp* (worked with other students on projects during class); *integrat* (worked on a paper or project that required integrating ideas or information from various sources); *clpresen* (made a class presentation) and *workhard* (worked harder than the student thought they could to meet an instructor's standards or expectations). Participants responded to these items by indicating one of four responses: 1= Never, 2= Sometimes, 3= Often and 4= Very Often.

The items were combined in an additive scale to measure academic identity. Each item was re-coded so that an individual with a higher score on the scale labeled academic identity will have a higher level of academic identity. As students continue to achieve a stronger sense of academic identity and behave in accordance with their role in that identity as a successful student, it is more likely they will persist in their college education.

In order to reduce the data and create a variable that contains a smaller number of underlying constructs, factor analysis was performed on each of the factors that measure academic identity. In an attempt to reduce the number of indicators to measure Academic Identity, these factors were loaded on two components that are described as student behavior/activity in class (factor 1) and student behavior/activity (factor 2) in preparation for class. Factor 1 explains about 28% of the covariance among seven indicators listed in Appendix F. Factor 2 explains about 52% of the covariance among the indicators. According to the data, *clquest* --asking questions in class and contributing to class discussions (.458), *occgrp* --worked with classmates outside of class to prepare class assignments (.720), *clpresen* --made a class presentation (.788) and *classgrp* --worked with other students on projects during class (.719) appear to load high (higher than .3) on factor 1, making these good measurements of factor 1. Preparing two or more drafts of a paper --*rewropap* (.762), *integrat* --worked on a paper or project that required integrating ideas or information from various sources (.684) and *workhard*-- worked harder than the student thought they could to meet an instructor's standards or expectations (.698) appear to load higher on factor 2, making these good indicators of factor 2. When the Cronbach's alpha for the classroom component and the elements of student preparation for class were calculated separately, the reliability results for both were unsatisfactory. However, when all components of academic

identity were calculated together, the Cronbach's alpha was .708, which is considered satisfactory, which is why all seven indicators of Academic Identity were used.

### *Independent Variables*

The first independent variable is student/faculty interaction. There are two components of student/faculty interaction. These are: frequency of student/faculty interaction and quality of student/faculty interaction. For the purposes of this study, the frequency of faculty/student interaction was measured with five indicators. These are *email* --communicating with the instructor via email; *facgrade* --discussing grades and assignments with the instructor; *facplans* --talking about career plans with an instructor and *facfeed* --received prompt written or oral feedback from faculty on your academic performance and *facideas* --discussed ideas from your readings or classes with faculty members outside of class. The new variable *FreqInteract* was created by combining the indicators in an additive scale to measure frequency of student/faculty interaction. Participants responded to these items by indicating one of four responses: 1= Never, 2= Sometimes, 3= Often and 4= Very Often. An individual with a higher score on the scale labeled frequency of student/faculty interaction will have a higher level of student/faculty interaction.

In order to reduce the data and create a variable that contains a smaller number of underlying constructs, factor analysis was performed on each of the factors that measure frequency of student/interaction, and it was found that frequency appears to

be measured by factors of day-to-day interaction as well as factors of other forms of interaction. According to the data, about 49.8% of the covariance can be explained among five indicators of frequency of interaction as listed in Appendix G. The variables *email* --communicating with the instructor via email (.675) ; *facgrade* --discussing grades and assignments with the instructor (.790); *facplans* --talking about career plans with an instructor(.736) and *facfeed* --received prompt written or oral feedback from faculty on your academic performance (.630) and *facideas* --discussed ideas from your readings or classes with faculty members outside of class (.689) appear to load high (above .3) making each one a good measurement of frequency of interaction. The Cronbach's alpha score for the five items measuring day-to day interaction with faculty score was .739, which is why all five indicators of frequency of interaction were used.

The second independent variable is quality of student/faculty interaction. These interactions will be measured by responses the variable *envfac* --how the student perceived their relationship with the faculty member. Participants responded to this item by indicating one of four responses: 1= Never, 2= Sometimes, 3= Often and 4= Very Often.

For the purposes of this study, high-risk students are defined as students who are first-generation college students and also identify as either African American or Hispanic. This dummy variable is coded as a dichotomous variable (high risk =1; not high risk = 0), and was created by combining the indicators of a first-generation college

student and Black or Hispanic together into one variable labeled *High Risk*. To create the indicator “first generation”, the variable, father’s education (*fathredu*), and the variable, mother’s education (*mothredu*), were combined and included only response number 1 (did not finish high school), response number 2 (graduated from high school) and response number 3 (attended college but did not complete degree). To create the indicator of being either “Black or Hispanic” the variable *race05* was included with only response number 3 (Black or African American), response number 5 (Mexican or Mexican American), and response number 6 (Puerto Rican and response number 7 (Other Hispanic or Latino).

#### *Control Variables*

Nine control variables were used in the study. Using the responses from the variable *birthyr*, a new variable *age\_r* was created for data reduction to calculate a student’s age as an age category. Students’ ages were combined into seven age categories: 1= 18-19 years old; 2= 20-25 years old; 3= 26-30 years old; 4= 31-35 years old; 5= 36-40 years old; 6= 41-50 years old; and 7= 51-72 years old. The number of hours a student is working is measured by the number of hours worked per week as indicated by seven categories: 1= 0 hours worked, 2= 1-5 hours worked, 3= 6-10 hours worked, 4= 11-15 hours worked, 5= 16-20 hours worked, 7= 26-30 hours worked and 8 = more than 30 hours worked. The variable *workon01* measures the number of hours worked per week by students on campus, and the variable *workof01* measures the number of hours

worked per week by students off campus. The number of hours a student cares for dependents per week is measured by the variable *carede01* as indicated by seven categories: 1=0 hours, 2= 1-5 hours, 3=6-10 hours, 4=11-15 hours, 5=16-20 hours, 7=26-30 hours and 8= more than 30 hours. Where a student is living is measured by the variable *livenow\_r*, which is a dummy variable created to measure whether a student lives off campus =0 or on campus =1. Whether or not a student is a transfer student is measured by the variable *enter\_r*, which is a dummy variable recoded to measure whether a student is either 0= started here or 1= started elsewhere. To control for students who take all classes online only, the variable *disted\_r* is a dummy variable recoded to as 0=no and 1= yes. To control for gender, the dummy variable *sex\_r* was created and recoded as 0= male and 1= female. Finally, to control for student's classification in college, the variable *class* indicates whether a student responds 1= Freshman/first year, 2= Sophomore, 3=Junior, 4= Senior or 5= Postbaccalaureate.

## SETTING

Founded in 1901, Texas Woman's University (TWU) is a Tier 2 public institution according to the 2014 edition of Best Colleges ranking of National Universities (Best Colleges, 2014 ). The student body is composed of over 90% female undergraduate and graduate students. The mission of the school is respect for diversity for all students from various social, cultural, ethnic and economic backgrounds, and this is strongly encouraged and promoted for the benefit not only of the student, but also for the state

of Texas. The University strives for a mission of developing students academically as well as in civic engagement and leadership in order for each individual to succeed both personally as well as professionally following graduation. TWU has participated in two administrations of the NSEE—one in the spring of 2010 and a second in the spring of 2013 (Best Colleges, 2014).

#### DATA COLLECTION

The study uses secondary (existing) data from the National Survey of Student Engagement: The College Student Report (NSSE) supplied by the Office of Institutional Research and Data Management at Texas Woman's University for 2010. All data are de-identified. The sampling design for 2010 of the NSSE is a voluntary response sample. All individuals in the population are contacted through NSSE. The email contact information for the sample was provided by the Office of Institutional Research and Data Management at TWU, and all participants were solicited to participate.

#### DATA ANALYSIS

Descriptive statistics in the form of frequencies are presented to illustrate the characteristics of the respondents. In order to test whether frequency of student/faculty interaction and quality of student/faculty interaction affects the dependent variable, academic identity, two OLS regressions have been conducted. Table 1, Model 1 in the first regression measures the effect of frequency of interaction and quality of interaction on the dependent variable, academic identity. Model 2 adds



the indicator high risk as well as all of the controls on the dependent variable, academic identity.

To test the impact of frequency of student/faculty interaction, quality of student/faculty interaction and academic identity on persistence, two binary logistic regressions each with two models were conducted. Table 2, Model 1 presents the first regression that measures the effect of the indicators, frequency of interaction, quality of interaction and academic identity on the dependent variable, persistence. Model 2 adds all of the control variables including the indicator, high risk. The effect of the mediation regression of persistence on frequency of interaction and quality of interaction with academic identity as a mediator is presented in Model 3 of Table 2. Trends and patterns in the data will also be described using descriptive data. Statistical Package for the Social Sciences (SPSS) was used to run the OLS regression analyses and binary logistic regressions.

#### LIMITATIONS

The findings may not apply to all undergraduate students at other institutions of higher education. The impact student-faculty interaction has on students will likely be different dependent on the type of institution—2 year vs. 4 year and public vs. private, research University vs. liberal arts colleges and in institutions where one type of student population is dominant., i.e. schools with higher student demographic of one particular race.

The study was limited to measuring persistence at one time point and may reveal additional information on persistence if additional time points were studied over a longer period of time or if participants could be studied longitudinally. The study does not take into consideration all psychosocial factors that can contribute or interfere with academic success such as issues of employment, personal or financial crisis, family illness or the like. Because secondary data were employed, the study was limited to the variables included in the data and was not concerned with other factors of student success such as GPA, but was developed only to measure persistence as a dependent factor. Additionally, the vast majority of respondents (over 60%) were classified as seniors. This is not ideal as some could argue that it is not a true representation of the student population of the institution being studied.

## CHAPTER IV

### RESULTS

This chapter presents the results of the data analysis. The first and second sections contain the descriptive and correlational analyses, and the third section outlines the results of the regression diagnostics and analyses performed for each of the seven hypotheses in this study.

#### DESCRIPTIVE STATISTICS

Appendix A presents the descriptive statistics for the variables in this study. Nearly all of the respondents (92.2%) in the study, the majority of which are female (94.3%) either graduated in Spring 2010 or remained enrolled in the subsequent long semester, Fall 2010. Of those who persisted, 43.3% (576) were graduates in Spring 2010 while 56.7% (754) were not. Regarding the re-enrollment rate, 43.8% (582) of the participants did not re-enroll, while 56.2% (748) did. The difference between the number of participants who graduated versus those who did not re-enroll is 6. The status of these missing 6 participants is unknown.

The variable Academic Identity was created using seven indicators of behaviors that exemplify academic identity. The majority of students (68.6%) in the study reported that they either often or very often ask questions in class and either often or very often (59.6%) prepared two or more drafts of a paper, indicating that self-reported behaviors consistent with academic identity on these two indicators of academic identity are very

high. Most (58.5%) had worked either often or very often with classmates outside of class to prepare assignments. The vast majority of the participants in the study (89.1%) reported working on a paper or a project that required integrating ideas or information from various sources either often or very often in their academic journey. While the majority of students in the study (68.3%) often or very often worked harder than they thought they would to meet an instructor's standards or expectations, a lesser percent (57.5%) indicated that they had made a class presentation often or very often.

The variable Frequency of Interaction was created using five indicators of behaviors that exemplify ongoing communication with the instructor. The vast majority of students (89.9%) in the study often or very often communicated with their instructor via email. Most (62.9%) discussed their grades with their instructor, indicating that self-reported behaviors consistent with frequency of interaction with faculty on these two indicators are common. Significantly fewer (40.2%) either often or very often discussed career plans with faculty. Most of the students in the study did not discuss career plans with their instructors as often.

The majority of students in the study indicated that they received feedback from faculty about their academic performance (68.4%). The students' perception of the quality of their relationship with faculty was high, as the majority of respondents (74.3%) found their instructors to be most often, very often or always available, helpful and sympathetic.

High Risk students represented 15.8% of the population. Of all the students in the study who identify as Black (16.3%), only 4.1% of them also identify as first-generation college students, and for those who are Hispanic (19.1%), 11.6% identify as first-generation college students.

The majority of the students in the study (60.6%) take care of dependents, with 23.2% of these students taking on this responsibility over 20 hours a week. Most of the students in the study (81.5%) commute to campus. Over half (57.1%) are transfer students and the vast majority (74.7%) attend classroom based courses indicating that there is large representation of commuter students in the population of this study. Additionally, most respondents were classified as seniors (65.5%), do not work on campus (88.4%), but do work off campus (58.5%). Over half of the students (54.8%) were between the ages of 18-25 years of age.

#### CORRELATIONAL ANALYSIS

There is no significant correlation between being a high risk student and academic identity, however being a high risk student does have a weak, negative relationship with persistence ( $r = -.083$ ;  $p < .01$ ). That is, as the number of students considered high risk increases, the number of students who persist decreases. Being a transfer student ( $r = -.127$ ;  $p < .001$ ) and classification ( $r = -.099$ ;  $p < .01$ ) were both negatively correlated with being a high risk student. In other words, transfer students and/or those who have a higher classification in college (i.e. seniors) are somewhat less

likely to be high risk students. This suggests that it is less likely for those who are considered high risk students to be in the position of transferring in from elsewhere to the university and to hold a higher class rank, which may be due to low persistence rates of these students.

There is no significant correlation between academic identity and persistence. Classification is positively correlated with persistence ( $r=.139$ ;  $p<.001$ ), so that the further along a student is in their academic pursuits, the more likely they will be to persist. The relationship between frequency of interaction and persistence is not statistically significant, but the relationship between frequency of interaction and academic identity shows a strong, positive relationship ( $r=.562$ ;  $p<.001$ ). That is, the more often students interact with faculty, the stronger their academic identity will be. Additionally, the higher a student's classification ( $r=.150$ ;  $p<.001$ ), the more likely the student will be to interact with faculty frequently, and if a student works on campus ( $r=.097$ ;  $p<.01$ ), they are also more likely to interact with faculty frequently. This is simply due to the increased opportunity to see faculty since these students are on campus more often.

The student's perception of the quality of their relationship with faculty is positively correlated with academic identity ( $r=.275$ ;  $p<.001$ ) and persistence ( $r=.091$ ;  $p<.01$ ). Though both of these relationships are modest, this indicates that when students perceive their relationship with faculty to be positive, they will have somewhat higher

levels of both academic identity and persistence. Additionally, if students perceive the relationship with their instructor to be positive, they will be more likely to interact with their instructor frequently ( $r=.362$ ;  $p<.001$ ). There is also a positive relationship between a student's classification ( $r=.085$ ;  $p<.01$ ) as well as age ( $r=.076$ ;  $p<.05$ ) with perceived quality of interaction. This indicates that when students persist to their senior year in college, they will be more likely to have a positive relationship with their faculty. Additionally, the older a student is, the more likely they are to view their relationship with faculty as positive. A weak, positive correlation also exists between academic identity and classification ( $r=.150$ ;  $p<.001$ ), and between academic identity and age ( $r=.114$ ;  $p<.01$ ). In other words, the higher students' classification is and the older they are, the more likely they will be to display behaviors consistent with academic identity. Additionally, there is a weak positive correlation between hours worked caring for dependents ( $r=.092$ ;  $p<.01$ ) and academic identity as well as between sex ( $r=.082$ ;  $p<.01$ ) and academic identity. This is to say that female students who care for dependents are more likely to behave in ways consistent with academic identity. The correlations are presented in Appendix B.

## REGRESSION DIAGNOSTICS

In regression analysis, it is necessary to carefully inspect data for evidence of multicollinearity. The correlation matrix was inspected for evidence of inappropriately high correlations between predictors. An inspection of the variables in the correlational matrix indicated that none of the variables had inter-item correlations greater .70, which is considered the threshold for multicollinearity (Allison, 1999). Additionally, the (VIF) variance inflation factors in each regression model were examined for multicollinearity. Variance inflation factors of greater than 5 are considered indicative of multicollinearity (Allison, 1999). An inspection indicated that all variance factors were under 10 suggesting that no multicollinearity was present.

OLS Regression was performed on the predictor variables to measure their impact on academic identity, and binary logistic regressions were performed on the predictor variables to measure whether persistence was affected, and to evaluate whether academic identity plays a mediating role in the relationships between frequency of interaction with persistence as well as quality of interaction with persistence. Mediation takes place when a known relationship between two variables is influenced by a third variable. In other words, the relationship between an independent variable and a dependent variable is affected by the presence of the mediator.

To measure the mediating effect of academic identity on the relationships between frequency of interaction and quality of interaction and persistence, three



series of regressions (Table 2) tested the following relationships: first, in Model 1, the relationship between frequency of interaction and quality of interaction with persistence was examined, next, in Model 2, controls were added to test for any other conditions that might influence the relationship and third, in Model 3, the variable, academic identity was added along with the controls to examine the possibility of mediation. If the mediation regression is not statistically significant, the mediation is not supported. Additionally, if there is a statistically significant mediation chain, but the strength of the relationship between an indicator and the dependent variable does not decrease there is no possibility of mediation. (Mirowsky, 1999).

## REGRESSION RESULTS

### *Hypotheses 1 and 2*

The first hypothesis states that controlling for other factors, students who interact more frequently with their instructors will be more likely to have a higher level of academic identity, and the second hypothesis in this study posits that controlling for other factors, the higher a student's perception of the quality of their interaction with their instructor is, the more likely they will be to have a higher level of academic identity. Two models were estimated for the purpose of testing these hypotheses. As shown in Table 1, Model 1 is statistically significant ( $F=244.854$ ,  $p<.001$ ) and explains about 32% of the variation in academic identity ( $R^2=.320$ ). The variable academic identity is regressed alone on the independent variables frequency of interaction and

quality of interaction with no control variables. Frequency of interaction shows a statistically significant positive relationship with academic identity ( $b=.658$ ;  $p<.001$ ), and quality of interaction shows a statistically significant, positive relationship with academic identity as well ( $b=.231$ ;  $p<.001$ ).

As seen in Table 1, Model 2 ( $F=48.127$ ;  $p<.001$ ) is the best fitting model for the interpretation of the data ( $R^2 = .353$ ). When controlling for high risk status, age, working on campus, working off campus, care of dependents, residence, taking classes online only, being a transfer student, gender and classification, frequency of student/faculty interaction remains statistically significant and positively related to academic identity ( $b=.665$ ;  $p<.001$ ). Therefore, the first hypothesis can be accepted. Though it is weaker, the relationship between quality of interaction and academic identity remains statistically significant ( $b=.167$ ,  $p<.05$ ), thus confirming the second hypothesis, as well.

Being female also has a statistically significant relationship with academic identity ( $b=1.648$ ;  $p<.001$ ), and if a student lives on campus ( $b= -.720$ ;  $p<.05$ ), the stronger their level of academic identity will be. Additionally, the regression reveals that with every level increase in age ( $b=.346$ ;  $p<.001$ ), and classification ( $b=.277$ ;  $p<.05$ ), the level of academic identity is also higher. In other words, the older a student is, and the longer they have persisted in higher education as indicated by their higher classification, the more likely they will exhibit behaviors consistent with a high level of academic identity.

Table 1: Academic Identity Regressed on Frequency of Interaction and Quality of Interaction

<i>Variable</i>	Model 1		Model 2	
	<i>b</i>	<i>Beta</i>	<i>b</i>	<i>Beta</i>
Frequency of Interaction	.658*** (.034)	.532	.665*** (.034)	.537
Quality of Interaction	.231** (.077)	.082	.167* (.076)	.060
HighRisk			.488 (.266)	.047
Age			.346*** (.075)	.151
Hours worked on Campus			-.013 (.082)	-.004
Hours worked off Campus			.049 (.037)	.038
Hours spent caring for dependents			.032 (.042)	.022
Residence			.720* (.313)	.073
Online Only			-1.028** (.306)	-.085
Transfer			-.325 (.261)	-.041
Sex			1.648*** (.412)	.100
Classification			.277** (.105)	.090
Constant	9.862*** (.509)		6.494*** (.727)	
R2	.320		.353	
F (df)	244.854*** (2, 1033)		48.127*** (12, 1023)	
N	1035		1035	

Note: b= unstandardized regression coefficient with standard error in parenthesis;  
Beta= standardized regression coefficient.

\*p<.05; \*\*p<.01; \*\*\*p<.001 (two-tailed test)

From the data, there appears to be a very strong, negative relationship between taking classes online only and academic identity. If a student is taking classes online only

(-1.028;  $p < .01$ ), the data lower a student's level of academic identity will be. That is to say, when students take classes only online, they are less likely to display behaviors that are indicative of a high level of academic identity.

### *Hypotheses 3, 4 and 5*

The third hypothesis posits that controlling for other factors, students who interact more frequently with their instructors will be more likely to show persistence, and the fourth hypothesis states that controlling for other factors, the higher a student's perception of the quality of their relationship with their instructor is, the more likely they will be to show persistence. The fifth hypothesis posits that controlling for other factors, the higher a student's level of academic identity is, the more likely they will be to show persistence.

Three models (Table 2, Models 1 and 2 and Model 3) were estimated for the purpose of testing these hypotheses. Table 2, Model 1 is statistically significant (Model  $X^2=8.022$ ,  $p < .05$ ), and explains about 2% of the variation in persistence ( $R^2 = .020$ ). According to Table 2, Model 1, frequency of interaction when regressed without controls indicates no statistically significant relationship with persistence. When the control variables are introduced in Model 2, the relationship still shows no statistical significance. Therefore, H3 is not accepted.

As revealed by Table 2, Model 1, for every level increase in the student's perception of the quality of their relationship with their instructor, the probability of

persistence increases ( $B=.241$ ;  $p<.01$ ). In other words, without controls, the data reveals that a student's perceived quality of relationship with faculty will increase their likelihood of persistence by 27%. In Model 2 (Model  $X^2=40.262$ ;  $p<.001$ ) the control variables are added, and while the strength of the significance of the relationship is less, ( $B=.224$ ;  $p<.05$ ) the student's perceived quality of their relationship with their faculty remains positively, significantly related to persistence ( $R^2=.117$ ). That is to say, controlling for all other variables, the data reveals that with each level increase in a student's perceived quality of relationship with faculty, their likelihood of persistence increases by about 25%. Therefore, H4 is accepted.

Table 2, Model 3 was used to test the regression of persistence on academic identity with controls added, and in this regression, academic identity has no statistically significant effect on the probability of persistence, so H5 cannot be accepted.

#### *Hypotheses 6 and 7*

The sixth hypothesis states that the effect of frequency of student/faculty interaction on persistence is mediated by academic identity. Results of the mediation model for this hypothesis are presented in Table 2.

Table 2, Model 3 (Model  $X=49.187$ ;  $p<.001$ ), introduces academic identity to the regression ( $R^2=.119$ ). Controlling for all other variables, the relationship between frequency of interaction and persistence shows no statistical significance, which reveals that academic identity does not mediate the relationship. Simply put, the relationship

between frequency of interaction and persistence is not statistically significant even when academic identity is introduced in the model. Therefore, H6 is rejected.

The seventh hypothesis states the effect of perceived quality of student/faculty interaction on persistence is mediated by academic identity. The results of the regression indicate that academic identity shows no statistically significant relationship with persistence. Based on this alone, it can be determined that academic identity does not mediate the relationship between perceived quality of interaction and persistence, therefore H7 cannot be accepted.

Additionally, the data in this study (Table 2, Model 3) reveals that high risk students have on average lower levels of persistence compared to students who are not at risk ( $B = -.753$ ;  $p < .01$ ). In other words, high risk students will be 45% less likely to persist. Regarding the variable classification, the data reveals a statistically significant relationship with persistence ( $B = .683$ ;  $p < .001$ ). That is to say, for every level increase in a student's classification in college, their likelihood of persistence will increase by 98%. Therefore, if a student is classified in college as a senior, they will be more likely to persist in college education until graduation.

Table 2: Persistence Regressed on Frequency of Interaction, Quality of Interaction and Academic Identity

	Model 1		Model 2		Model 3	
<i>Predictor</i>	<i>B</i>	<i>Odds Ratio</i>	<i>B</i>	<i>Odds Ratio</i>	<i>B</i>	<i>Odds Ratio</i>
Frequency of Interaction	.003 (.043)	1.003	-.025 (.046)	.975	-.052 (.054)	.949
Quality of Interaction	.241** (.090)	1.272	.224* (.093)	1.251	.217* (.094)	1.242
Academic Identity					.042 (.044)	1.042
High Risk			-.730* (.301)	.482	-.753* (.303)	.471
Age			-.009 (.099)	.991	-.022 (.101)	.978
Working on Campus			-.120 (.108)	.887	-.120 (.107)	.887
Working off Campus			-.072 (.050)	.930	-.074 (.050)	.929
Care of Dependents			-.057 (.055)	.945	-.057 (.055)	.944
Residence			.512 (.404)	1.668	.474 (.406)	1.607
Online Only			-.443 (.367)	.642	-.412 (.369)	.662
Transfer			-.606 (.372)	.545	-.584 (.372)	.558
Sex			.130 (.557)	1.139	.084 (.558)	1.087
Classification			.701*** (.133)	2.016	.683*** (.134)	1.979
Constant	1.343* (.607)	1.900	.783 (.907)	32.187	.500 (.956)	1.649

-2 log likelihood	504.386	464.124	463.221
Model X2	8.022*	40.262***	49.187***
Pseudo R2	.020	.117	.119
Degrees of Freedom	2	12	13
N	1036	1036	1036

\*p<.05; \*\*p<.01; \*\*\*p<.001 (2-tailed test)

Note: The odds ratio is the antilog of B, and standard errors are in parenthesis.

## SUMMARY

Overall, the results show that a student's frequency of interaction with faculty as well as a student's perceived quality of relationship with faculty influence academic identity in undergraduate students. In other words, when students interact with their faculty on a regular basis and feel that their faculty care about their academic welfare, students are more likely to engage in behaviors consistent with a strong academic identity such as asking questions in class and participating in class discussions and working hard to achieve their academic goals. Additionally, the study found that students who are female, who live on campus, are older and who are further along in their studies based on their classification have a stronger level of academic identity. The academic identity of students who take classes online only was very low.

This dissertation originally endeavored to study the effect of student/faculty interaction and academic identity on the persistence of high-risk undergraduate students. However, because the characteristics of the respondents affected the ability



to study high risk students as the primary population of the study, high risk students were studied as a sub-group of the population. High Risk was created as an independent variable to measure risk status and its relationship with student/faculty interaction, academic identity and persistence.

There is no statistically significant relationship between academic identity and persistence. Additionally, the higher a student's risk status, the less likely they will be to persist in their education. This study indicated no statistically significant relationship between frequency of interaction and persistence. However a statistically significant relationship between perceived quality of interaction and persistence was found, which reveals that when students perceive that their instructor is approachable and concerned about their success in college, they will be more likely to show persistence in their educational pursuits.

When academic identity was tested to review whether it played a mediating role in the relationship between student/faculty interaction and persistence, the results indicated that academic identity does not mediate the relationship between frequency of interaction and persistence, or between quality of interaction and persistence. In other words, academic identity does not affect the relationship between frequency of interaction and persistence. Regarding the relationship between quality of interaction and persistence, academic identity does not appear to mediate this relationship either.

The regression analyses revealed that rates of academic identity and persistence were on average lower for high risk students compared to students who were not considered high risk. This was consistent with prior literature (Harvey and Harvey, 2005; Harvey, 2008; Levin, Belfield, Muenning & Rouse, 2007; Moore and Owens, 2008; Nunez, 2009; Öztürk, 2007), which indicated that students with high risk status are less likely to persist in their education compared to students who are not considered high risk. Additionally, just as classification was positively related to academic identity, the data found that it was strongly statistically related to persistence as well.

## CHAPTER V

### SUMMARY AND CONCLUSION

This final chapter begins with a summary of the key findings. This is followed by a discussion of the implications of student/faculty interaction and risk status on academic identity and persistence of undergraduate students. Finally, the chapter concludes with recommendations for further research.

#### SUMMARY

This study sought to explore the impact of student-faculty interactions, academic identity and risk status on the likelihood of persistence of undergraduate students at a single, four-year public institution using existing data from the NSSE, an established premier data set of student engagement in higher education which contains representative data for student-faculty interaction, factors of academic identity and risk status. Data for indicators of persistence were obtained from The Office of Institutional Research and Data Management at Texas Woman's University.

Previous studies have examined the impact of student/faculty interaction on indicators of academic identity as well as persistence of undergraduate students. These studies have focused on various aspects of these relationships including interaction both inside and outside of the classroom (Tinto, 1987; Astin, 1993; Pascarella and Terenzini,

2005; Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J. & Associates, 2005), and how these interactions benefit students both academically and in terms of degree completion.

The general consensus of the literature has revealed that there is a positive relationship between student/faculty interaction and academic identity (Anaya & Cole, 2001; White and Lowenthal, 2011) as well as between student/faculty interaction and persistence (McKinney, et. al., 1998; Braxton, et. al., 2004; Shreiner, et. al., 2011).

Additionally, the literature reports that there is a negative relationship between being a high risk student, academic identity and persistence (Choy, 2001; Lohfink and Paulsen, 2005; Ishitani, 2006).

The first hypothesis focused on whether students who interact more frequently with their instructors will be more likely to have a higher level of academic identity. This hypothesis was supported (Table 1, Model 2) as indicated by a positive relationship between frequency of interaction and academic identity ( $b=.658$ ,  $p<.001$ ). This was consistent with existing literature which indicates that the relationship between frequency of interaction and academic identity is positive (Anaya & Cole, 2001; White and Lowenthal, 2011).

The data also revealed (Table 1, Model 2) that students who are female ( $b=1.648$ ;  $p<.001$ ), students who are older ( $b=.346$ ;  $p<.001$ ) as well as students who have a higher classification in college ( $b=.277$ ;  $p<.01$ ) are more likely to have a higher level of academic identity. This may be an artifact of the data since the vast majority of

the participants are women at a predominantly female populated university, 65% of the participants are seniors who, by the very nature of their classification are older and are near graduation. In addition to other factors that remain yet unknown, these factors may lend strong support to high risk groups at this university that empower these students to be successful despite any other limitations. Additionally, the data showed that when a student lives on campus ( $b = -.720$ ;  $p < .05$ ), they will be more likely to have a higher level of academic identity. However, if a student is taking classes online only ( $b = -1.028$ ;  $p < .01$ ), their level of academic identity will be significantly lower. The strong negative relationship that taking classes online only has with academic identity is an interesting finding in this study. With the value of the b coefficient being so very high and statistically significant at the .01 level, this data makes a strong argument for the severe lack of academic identity that online students have and how this may hinder their academic success and persistence.

The second hypothesis of this study asserted that the higher the student's perceived quality of their relationship with faculty, the higher their level of academic identity ( $b = .167$ ;  $p < .05$ ). Findings showed that the hypothesis is supported (Table 1, Model 2). The results are consistent with literature revealing that when students perceive the quality of their relationship with faculty to be positive, behaviors consistent with academic identity increase (McKinney, et. al., 1998; Braxton, et. al., 2004; Shreiner, et. al., 2011).

The third hypothesis posited that controlling for other factors, students who interact more frequently with their instructors will be more likely to show persistence. The regression revealed that this hypothesis could not be supported. This finding was not consistent with literature that reveals frequency of interaction is important for successful student outcomes and persistence. (Tinto, 1987; Astin, 1993; Pascarella and Terenzini, 2005; Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J. & Associates, 2005). The reason for the differences of the findings in this study is not conclusive. These reasons may be an artifact of the instrument, differences in the measurement of the data or the population itself in which students' persistence rates are tied to unknown factors as well as those that are revealed in the other hypotheses of this study.

Hypothesis 4, which sought to ascertain the effect of perceived quality of student/faculty interaction on persistence, was accepted. Literature argues that a student's perception of their relationship with faculty will encourage the likelihood of persistence (Braxton, et. al, 2004). Models 1 and 2 in Table 2 show a statistically significant relationship between perceived quality of interaction and persistence, though the strength of the significance decreases from ( $B=.241$ ;  $p<.01$  to  $B=.224$ ;  $p<.05$ ) when other dimensions of the relationship are captured by adding the control variables.

Hypothesis 5 sought to discover if higher academic identity was related to higher persistence. In Table 2, Model 3, the data revealed that there was no statistically significant relationship between academic identity and persistence. This finding would

be inconsistent with literature in which academic identity shows a strong relationship to student success and persistence (Reitzes and Burke, 1980; Arthur, Shepherd and Sumo, 2006; Hoffman, Vargas and Santos, 2008). Ultimately, the hypothesis was rejected.

Hypothesis 6 asserted that academic identity is a mediator in the relationship between frequency of interaction and persistence. The results of the analyses showed no support for mediation. In other words, the relationship between frequency of interaction and persistence is not mediated by academic identity. As a result, H6 was rejected.

The seventh hypothesis posited that academic identity is a mediator in the relationship between quality of relationship and persistence. When academic identity was introduced as a mediator in the relationship between quality of interaction and persistence (Table 2, Model 3), the regression continued to show statistical significance ( $B=.217$ ;  $p<.05$ ) as it did in the first two models. The relationship between academic identity and persistence showed no statistical significance, however. In other words, the relationship between perceived quality of interaction and persistence is not mediated by academic identity. As a result, H4 cannot be supported. It should be noted, however that the data reveals a very slight decrease in the relationship between perceived quality of interaction and persistence between models 1 and 2 ( $B=.224-.217=.007$ ), which indicates that some partial form of mediation by academic identity in this relationship may be possible.

In addition, the results of the binomial logistic regressions (Table 2, Model 3) revealed a statistically significant negative relationship between being a high risk student and persistence ( $B = -.753$ ;  $p < .05$ ). This was consistent with what was seen in the literature regarding the relationship of high risk students and persistence. When a student has characteristics of being high risk, they are less likely to show persistence in their education (Harvey and Harvey, 2005; Harvey, 2008; Levin, Belfield, Muenning & Rouse, 2007; Moore and Owens, 2008; Nunez, 2009; Öztürk, 2007).

There are many reasons persistence rates are low for high risk students. Some of the most common reasons include being disadvantaged economically and racially, and being a first generation college student (Lohfind and Paulsen, 2005). First-generation college students are less likely to persist due to lack of family guidance and financial support from their families (Choy, 2001; Lohfink and Paulsen, 2005; Ishitani, 2006; Chen, 2005; Engle & Tinto, 2008).

A statistically significant positive relationship was revealed (Table 2, Model 3) between classification and persistence ( $B = .683$ ;  $p < .001$ ). In other words, though it is less likely for high risk students to persist in their college education, the longer a student is enrolled in college as determined by their higher classification, the more likely they will be to persist until graduation.



## IMPLICATIONS

The purpose of this study was to explore the relationship between student/faculty interaction, risk status and academic identity on persistence of undergraduate students. Although some of what was found in this study was expected based on the literature, the research results were interesting in that based on the findings, frequency of interaction and quality of interaction showed a statistically significant effect on academic identity, yet the relationships between frequency of interaction and persistence and academic identity and persistence were not statistically significant.

The relationship between frequency of interaction and persistence was shown not to be mediated by academic identity, and the relationship between quality of interaction and persistence was also shown not to be mediated by academic identity. Though the instrument used was sufficient for gathering data that measured academic identity, utilizing instruments designed specifically for gathering empirical data that more appropriately measure academy identity is necessary and may yield more specific results. Additionally, analyzing data that is not skewed toward persistence would also yield important information regarding factors that influence persistence.

Identity theory provided a useful framework for this study to ask questions related to how student define themselves in the role of a student and how this is reflected in the behaviors students adopt particularly in relation to interaction with

faculty. If students, especially those who are considered high risk, can adopt a process of identity formation as a successful student who persists in their education, they will be more likely to exhibit behaviors consistent with that identity. The greater their commitment to this identity, the greater their motivation to enhance this identity and derive a positive sense of self because of it will be. Positive and frequent interaction with faculty can facilitate the strengthening of this identity, thus strengthening behavior that contributes to persistence in their education (Burke and Reitzes, 1991).

Based on the results overall, the relationship between student/faculty interaction and academic identity was found to be the most significant result of the study. This is an important connection for institutions of higher education as more research related to improving student success and persistence is explored. According to the findings, students will not persist necessarily based on strong academic identity alone. Nor will they persist based on frequency of interaction. However, if students perceive the quality of their interaction with faculty to be positive, their likelihood of persisting onto graduation will also be greater.

If institutions of higher education want to see increases in student's academic identity, the findings suggest that an increase in the perceived quality of student/faculty interaction will increase levels of behavior consistent with a strong academic identity, which in turn may increase the rate of persistence. Instructors can encourage academic

identity through interactive activities in the classroom as well as encouraging interaction between the instructor and students outside of the classroom.

When faculty can communicate that they are committed to their student's welfare and are available to help with academic and life issues related to student's success, this will affect the student's perception of the quality of their relationship with faculty. Faculty can foster quality relationships with students in a variety of ways such as as being available to talk with students before and after class or encouraging quality interaction with students by linking a portion of a student's grade to visiting during the faculty office hours. If students perceive that their relationship with faculty is of quality and that faculty are concerned about their welfare, they will experience a higher degree of student success (Endo and Harpel, 1983). Research suggests the possibility that this concept will also influence persistence rates of high risk students (Shreiner, et. al, 2011). Though this finding is not conclusive based on this study, it is definitely worth pursuing further research to investigate.

#### FUTURE RESEARCH

As stated earlier in this study, the sample was taken from a single, predominantly female state university in the southern United States. Different institutions may produce different outcomes. Further research could be conducted both at this institution as well as at other 4 year public and private Universities, predominantly Black colleges, predominantly Hispanic institutions or community

colleges to improve on this work and to further examine the relationship between student/faculty interaction, academic identity, risk status and persistence of undergraduate students and of other specific student populations as well. Because gender is a significant factor in this study, a study conducted at a more diversified co-ed university would be helpful.

Additionally because this population is slightly older, a study using participants that are more traditional age would be useful. Using a research design that might be able to track students longitudinally would be beneficial so that it could be further determined which specific factors that shape academic identity as well as factors that most influence persistence compared to those that may have less of an impact. Because high risk showed a positive relationship with academic identity but revealed a negative relationship with persistence, it would be interesting to explore why these differences exist and what conditions account for these differences. In addition, since the majority (65%) of respondents were classified as seniors, it is essential to collect a wider range of data from students who are classified as freshman, sophomores or juniors to note the differences of predictors or changes in of persistence between them. Additionally, collecting data regarding students' self-reported socioeconomic status would be very useful in order to study the impact that SES has on student/faculty interaction, academic identity and persistence. Incorporating data from across different states or other diversified regions—both urban and more rural would also be important to

furthering the research on this topic. Because there is such a strong negative relationship between academic identity and taking classes online only, future research can help to clarify this relationship and more specific reasons why this relationship exists.

Qualitative data would be very useful in identifying aspects of student/faculty interaction that most influence academic identity and persistence. This type of research might be most effective for determining which types of interaction are helpful for specific groups. For example, while quality of interaction might predict academic identity or persistence in one sub-population of the student body, another aspect of interaction may be more effective for impacting academic identity or persistence of a different sub-group. This information would be particularly useful for studying populations that are considered higher risk. Examining academic identity, persistence as well as risk with students in a format that is not self-selected would certainly diversify the population being studied even at a single institution as was done in this study.

Additionally, designing an instrument better suited to measuring academic identity would be enable stronger interpretation of the factors that both contribute to or present hindrances to academic identity. Further, when analyzing the mediating effect of academic identity, it would be helpful to use structural equation modeling to measure the possible impact of other variables on the relationship between frequency of interaction and perceived quality of interaction with persistence.

## CONCLUSION

This study provides evidence that student/faculty interaction, academic identity and risk status affect persistence. As persistence is an important topic for educators, finding effective ways to promote persistence is essential, and although student/faculty interaction, academic identity and risk status are only a few of the predictors of persistence, it is incumbent upon educators to continue to seek ways to encourage and improve the frequency as well as the student's perceived quality of interaction with faculty.

Although this research (and the practical implications) outlined cannot address all of the factors related to improving academic identity and persistence, the findings are consistent with the literature that student/faculty interaction is an integral part of improving success rates for undergraduate students—especially those who are considered high risk. (Tinto, 1987; Astin, 1993; Pascarella and Terenzini, 2005; Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J. & Associates, 2005). When students can be encouraged to interact more frequently with their faculty, they will increase in behaviors that are consistent with a high level of academic identity. Additionally, if students' perceive their relationship with faculty to be high quality relationship, this too will serve to support a high level of academic identity. According to the study, because the rate at which high-risk students persist is lower, fostering ways to increase the

amount of student/faculty interaction can serve to improve rates of persistence for these students as for all undergraduate students.

Institutions genuinely interested in improving persistence can benefit from the results of this study. Although college enrollment is increasing—especially among those who are considered high risk, the gap between graduation rates and enrollment rates is widening. (Bailey & Dynarski, 2011; Carey, 2004; Swail, Redd, & Perna, 2003). This reality poses a concern not only for knowledge-based skilled workers on a global scale, but it also affects the financial outlook of higher education institutions (Derby and Smith, 2004). For the student, especially those who are considered high risk, persistence until graduation is important financially for upward mobility (Habley & Clanahan, 2004). This study confirms that rates of persistence and academic identity for all students can increase with higher levels of student/faculty interaction. When students frequently interact with faculty and can perceive their interactions with faculty to be positive and beneficial, they will have a higher academic identity, which will increase their likelihood of persistence.

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## APPENDIX A

### Descriptive Statistics for All Variables

# Appendix A: Descriptive Statistics for All Variables

	Frequency	Valid Percent
<b>DEPENDENT VARIABLES</b>		
<b>Persistence</b>		
No	104	7.8
Yes	1226	92.2
	1330	
<b><i>Graduated in Spring 2010</i></b>		
No	754	56.7
Yes	576	43.3
	1330	
<b><i>Re-enrolled in Fall 2010</i></b>		
No	582	43.8
Yes	748	56.2
	1330	
<b>Academic Identity</b>		
<b>Indicators:</b>		
<b><i>Asking questions in class</i></b>		
Never	57	4.3
Sometimes	360	27.4
Often	403	30.7
Very Often	494	37.6
	1314	
<b><i>Preparing two or more drafts of a paper</i></b>		
Never	151	11.5
Sometimes	379	28.9
Often	383	29.2
Very Often	399	30.4
	1312	
<b><i>Worked with classmates outside of class to prepare class assignments</i></b>		
Never	138	10.4
Sometimes	411	31.1
Often	465	35.2
Very Often	308	23.3
	1322	

***Worked with other students on projects during class***

Never	172	13.0
Sometimes	509	38.6
Often	385	29.2
Very Often	254	19.2
	1320	

***Worked on a paper or project that required integrating ideas or information from various sources***

Never	15	1.1
Sometimes	129	9.8
Often	436	33.0
Very Often	740	56.1
	1320	

***Made a class presentation***

Never	131	10.0
Sometimes	428	32.5
Often	405	30.8
Very Often	352	26.7
	1316	

***Worked harder than you thought you would to meet an instructor's standards or expectations***

Never	46	3.6
Sometimes	358	28.1
Often	493	38.8
Very often	375	29.5
	1272	



**INDEPENDENT VARIABLES****Relationship with faculty**

Unfriendly, Unhelpful, Unsympathetic	16	1.3
Not often friendly, Helpful and Sympathetic	25	2.1
Occasionally friendly, Helpful and Sympathetic	76	6.3
Sometimes available, helpful and friendly	194	16.0
Often available, helpful and sympathetic	269	22.1
Very often Available, Helpful	360	29.6
Always Available, Helpful	275	22.6
	1215	

**Frequency of Interaction****Indicators:*****Emailing instructor***

Never	6	.5
Sometimes	123	9.6
Often	347	27.0
Very Often	807	62.9
	1283	

***Discussing grades with  
faculty***

Never	57	4.4
Sometimes	420	32.6
Often	390	30.3
Very Often	420	32.6
	1287	

***Discussing career plans  
with faculty***

Never	232	18.0
Sometimes	540	41.8
Often	284	22.0
Very Often	235	18.2
	1291	

***Received feedback from  
faculty about academic  
performance***

Never	39	3.1
Sometimes	362	28.5
Often	502	39.5
Very Often	367	28.9

***Discussed ideas about class  
with faculty***

Never	458	35.4
Sometimes	483	37.3
Often	215	16.6
Very Often	139	10.7
	1295	

**High-Risk students**

No	975	84.2
Yes	183	15.8
	1158	

***Race***

American Indian	13	1.1
Asian	93	8.0
Black	189	16.3
White	523	45.0
Hispanic	222	19.1
Other Race	168	12.6
	1162	

***Father's Education***

Did not go to college	504	43.7
Went to college	649	56.3
	1153	

***Mother's Education***

Did not go to college	476	41.2
Went to college	680	58.8
	1156	

***Black First-generation***

No	1115	95.9
Yes	48	4.1
	1163	

***Hispanic First-generation***

No	1025	88.4
Yes	135	11.6
	1160	

**CONTROL VARIABLES****Hours spent caring for dependents**

0 hours a week	475	39.4
1-5	214	17.8
6-10	113	9.4
11-15	63	5.2
16-20	61	5.1
21-25	31	2.6
26-30	30	2.5
More than 30 hours	218	18.1
	1205	

**Sex**

male	66	5.7
female	1095	94.3
	1161	

**Residence**

On-campus	221	18.3
Off-campus	941	81.7
	1152	

**Transfer**

Start here	402	34.6
Started elsewhere	760	65.4
	1162	

**Online only**

no	994	85.5
yes	169	14.5
	1163	

**Classification**

freshman	201	17.3
sophomore	90	7.8
junior	58	5.0
senior	759	65.5
post-baccalaureate	51	4.4
	1159	

**Hours worked on campus**

0 hours a week	1064	88.4
1-5	16	1.3
6-10	29	2.4
11-15	24	2.0
16-20	50	4.2
21-25	9	.7
26-30	1	.1
	1203	

**Hours worked off campus**

0 hours a week	502	41.5
1-5	39	3.2
6-10	57	4.7
11-15	65	5.4
16-20	88	7.3
21-25	83	6.9
26-30	70	5.8
	1211	

**Age**

18-19	120	10.3
20-25	516	44.5
26.-30	174	15.0
31-35	93	8.0
36-40	90	7.8
41-50	104	7.8
51-72	63	5.4
	1160	

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## APPENDIX B

### Correlation Matrix for All Variables

Appendix B: Correlation Matrix for All Variables

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14
V1	1													
V2	.082**	1												
V3	.568***	.036	1											
V4	.289***	.090**	.366***	1										
V5	.043	-.063*	-.040	.039	1									
V6	.048	.010	.098**	.058*	-.053	1								
V7	.056	-.049	-.013	-.045	.015	-.162***	1							
V8	.080**	-.023	.031	.081*	.050	-.080**	.188***	1						
V9	.057	.000	.015	.009	-.129***	-.139***	.300***	.273***	1					
V10	-.025	-.064*	.007	-.046	.005	-.102**	.319***	.267***	.185***	1				
V11	.152	.119***	.126***	.083*	-.102**	.033	.263***	.228888	.547***	.176***	1			
V12	.014	-.057	.018	-.032	-.005	-.137***	.365***	.319***	.399***	.304***	.431***	1		
V13	.078*	-.011	.000	-.007	.035	-.053	.017	.014	-.078**	.028	-.049	-.010	1	
V14	.101**	-.014	-.029	.080*	.035	-.092**	.324***	.447***	.446***	.344***	.402***	.421***	-.106***	1

N=1225

Variables for Correlation Matrix

V1—Academic Identity  
V2—Persistence  
V3—Frequency of Interaction  
V4—Quality of Interaction  
V5—High Risk  
V6—Work on Campus  
V7—Work off Campus  
V8—Care of Dependents  
V9—Transfer student  
V10—Online only  
V11—Classification in college  
V12—Residence  
V13—Sex  
V14—Age

## APPENDIX C

### Inter-Item Correlation Matrix for Academic Identity



**Appendix C: Inter-Item Correlation Matrix for Academic Identity**

	<b>clquest</b> Asked questions in class or contributed to class discussions	<b>rewropap</b> Prepared two or more drafts of a paper or assignment before turning it in	<b>occgrp</b> Worked with classmates outside of class to prepare class assignments	<b>classgrp</b> Worked with other students on projects during class	<b>integrat</b> Worked on paper or project that required	<b>clpresen</b> Made a class presentation	<b>workhard</b> Worked harder than you thought you could to meet an instructor's standards or expectations
<b>clquest</b>	1.000						
<b>rewropap</b>	.185	1.000					
<b>occgrp</b>	.145	.187	1.000				
<b>classgrp</b>	.200	.218	.396	1.000			
<b>integrat</b>	.253	.390	.293	.237	1.000		
<b>clpresen</b>	.370	.189	.408	.372	.345	1.000	
<b>workhard</b>	.174	.270	.238	.182	.297	.145	1.000

## APPENDIX D

### Inter-Item Correlation Matrix for Frequency of Interaction

**Appendix D: Inter-Item Correlation Matrix for Frequency of Interaction**

	<b>email</b> Used e-mail to communicate with an instructor	<b>facfeed</b> Received prompt written or oral feedback from faculty on your academic performance	<b>facgrade</b> Discussed grades or assignments with an instructor	<b>facplans</b> Talked about career plans with a faculty member or advisor	<b>facideas</b> Discussed ideas from your readings or classes with faculty members outside of class
<b>email</b>	1.000				
<b>facfeed</b>	.303	1.000			
<b>facgrade</b>	.535	.342	1.000		
<b>facplans</b>	.299	.338	.427	1.000	
<b>facideas</b>	.224	.282	.400	.484	1.000

## APPENDIX E

### Description Of Variables

**Appendix E: Variables and Descriptors of Student-Faculty Interaction, Risk Status, Academic Identity and Persistence of Undergraduate Students**

<b>Variable names</b>	<b>Variable Label</b>	<b>Response Values and Labels</b>
<b><u>High Risk</u></b>	Combined variable of parents education( 1-3) and race (3, 5, 6 and 7)	0= not high risk 1= high risk
<b><i>fathredu</i></b>	What is the highest level of education that your father completed?	1=Did not finish school 2=Graduated from high school 3=Attended college but did not complete degree 4=Completed an associate's degree (A.A., A.S., etc.) 5=Completed a bachelor's Degree (B.A., B.S., etc.) 6=Completed a master's degree (M.A., M.S., etc.) 7= Completed a doctoral degree (Ph.D., J.D., M.D., etc.)
<b><i>mothredu</i></b>	What is the highest level of education that your mother completed?	1=Did not finish school 2=Graduated from high school 3=Attended college but did not complete degree 4=Completed an associate's degree (A.A., A.S., etc.) 5=Completed a bachelor's Degree (B.A., B.S., etc.) 6=Completed a master's degree (M.A., M.S., etc.) 7= Completed a doctoral degree (Ph.D., J.D., M.D., etc.)
<b><i>race05</i></b>	What is your racial or ethnic identification? (Select only one)	1=American Indian or other Native American 2=Asian, Asian American or Pacific Islander 3=Black or African American 4=White (non-Hispanic) 5=Mexican or Mexican American

6=Puerto Rican  
 7=Other Hispanic or Latino  
 8=Multiracial  
 9=Other  
 10=I prefer not to respond

**Persistence**

Combined variable of students re-enrolled in Fall 2010 and graduated in Spring 2010

0=did not persist  
 1=persisted

***Graduated\_AY\_2010\_Num***

Undergraduate students who graduated in Spring 2010

0= did not graduate  
 1= graduate

***Ret10FA\_Num***

Undergraduate students who re-enrolled in Fall 2010

1= re-enrolled  
 2=did not re-enroll

**Academic Identity**

***classgrp***

Worked with other students on projects during class

1=Never  
 2=Sometimes  
 3=Often  
 4=Very Often

***clpren***

Made a class presentation

1=Never  
 2=Sometimes  
 3=Often  
 4=Very Often

***clquest***

Asking questions in class and contributing to class discussions

1=Never  
 2=Sometimes  
 3=Often  
 4=Very Often

<b><i>occgrp</i></b>	Worked with classmates outside of class to prepare class assignments	1=Never 2=Sometimes 3=Often 4=Very Often
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<b><i>rewropap</i></b>	Prepared two or more drafts of a paper or assignment before turning in	1=Never 2=Sometimes 3=Often 4=Very Often
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<b><i>integrat</i></b>	Worked on paper or project that required integrating ideas or information from various sources	1=Never 2=Sometimes 3=Often 4=Very Often
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<b><i>workhard</i></b>	Worked harder than you thought you could to meet an instructor's standards	1=Never 2=Sometimes 3=Often 4=Very Often
------------------------	--	---

**Frequency of Student/faculty interaction**

<b><i>facideas</i></b>	Discussed ideas from your readings or classes with faculty members outside of class	1=Never 2=Sometimes 3=Often 4=Very Often
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<b><i>email</i></b>	Communicating with the instructor via email	1=Never 2=Sometimes 3=Often 4=Very Often
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<b><i>facgrade</i></b>	Discussing grades or assignments with the instructor	1=Never 2=Sometimes 3=Often 4=Very Often
<b><i>facplans</i></b>	Talking about career plans with an instructor	1=Never 2=Sometimes 3=Often 4=Very Often
<b><i>facfeed</i></b>	Received prompt written or oral feedback from faculty on academic performance	1=Never 2=Sometimes 3=Often 4=Very Often

**Quality of Student/faculty interaction**

<b><i>envfac</i></b>	Student's perceived relationship with the faculty member	1=Unfriendly, Unhelpful, Unsympathetic 2= Very rarely Helpful, Considerate, Flexible 3= Rarely Helpful, Considerate, Flexible 4= Sometimes Helpful, Considerate, Flexible 5=Often Helpful, Considerate, Flexible 6= Very often Helpful, Considerate, Flexible 7= Always Helpful, Considerate, Flexible
<b><i>age_r</i></b>	Age category	18-19 20-25 26-30 31-35 36-40 41-50 51-72



<b><i>workon01</i></b>	Working for pay on campus	1=0 hours per week 2=1-5 3=6-10 4=11-15 5=16-20 6=26-30 7=26-30 8=More than 30 hours
<b><i>workof01</i></b>	Working for pay off campus	1=0 hours per week 2=1-5 3=6-10 4=11-15 5=16-20 6=26-30 7=26-30 8=More than 30 hours
<b><i>carede01</i></b>	Providing for dependents living with you (parents, children, spouse, etc.)	1=0 hours per week 2=1-5 3=6-10 4=11-15 5=16-20 6=26-30 7=26-30 8=More than 30 hours
<b><i>Livenow_r</i></b>	Which of the following best describes where you are living now while attending college?	0=Live off campus 1=Live on campus
<b><i>enter_r</i></b>	Did you begin college at your current institution or elsewhere?	0= Started here 1=Start elsewhere

<b><i>class</i></b>	What is your current classification in college?	1=Freshman/first-year 2=Sophomore 3=Junior 4=Senior 5=Postbaccalaureate
<b><i>disted_r</i></b>	Thinking about this current academic term...Are you taking all courses entirely on-line? (Note: Item appeared only in the on-line instrument)	0=No 1=Yes
<b><i>sex_r</i></b>	Your sex	0=male 1=female

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## APPENDIX F

### Factor Loadings of Frequency of Interaction

**Appendix F: Factor Loadings of Rotated Factors of Academic Identity**

	Factor Loadings	
<i>Variable</i>	<i>F1</i>	<i>F2</i>
clquest	.458	.266
rewropap	.106	.762
occgrp	.720	.128
integrat	.324	.684
classgrp	.719	.102
workhard	.092	.698
clpresen	.788	.143
% of Variance Explained	28.439	52.062

Notes:

Extraction method: Principal components analysis

Rotation method: Varimax

## APPENDIX G

### Factor Loadings of Frequency of Interaction

**Appendix G: Factor Loadings of Frequency of Interaction**

	Factor Loadings
<i>Variable</i>	<i>F1</i>
facfeed	.630
facgrade	.790
facplans	.736
facideas	.474
email	.456
% of Variance Explained	49.863

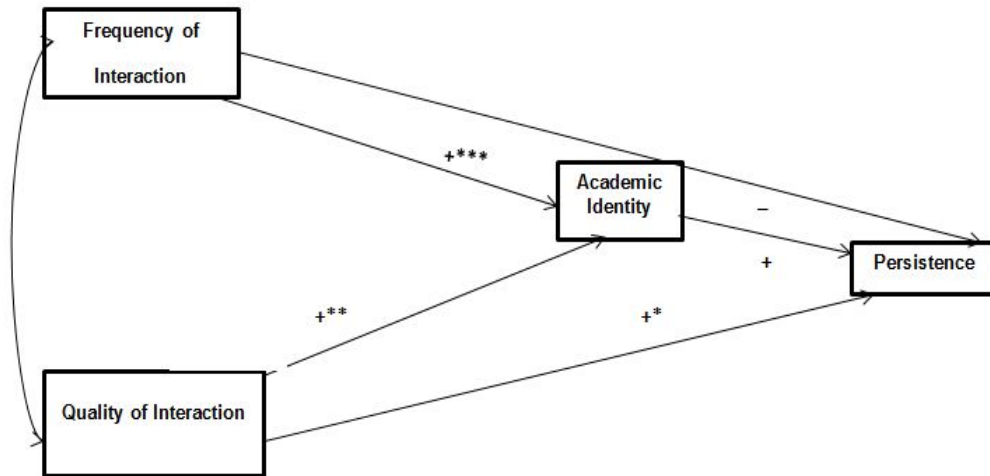
Notes:

Extraction method: Principal components analysis

## APPENDIX H

Figure 1. Relationship Between Variables

**Figure 1. Relationship Between Variables**



Note:

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (2-tailed test)

All regressions are controlling for: HighRisk, Age, Hours Worked on Campus, Hours Worked off Campus, Hours spent caring for dependents, Residence, Online Only, Transfer, Sex, Classification



## APPENDIX I

### IRB Letter of Approval



**Institutional Review Board**  
Office of Research and Sponsored Programs  
P.O. Box 425619, Denton, TX 76204-5619  
940-898-3378 FAX 940-898-4416  
e-mail: IRB@twu.edu

September 18, 2013

Ms. Susan Cruise

Dear Ms. Cruise:

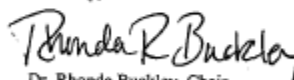
*Re: Student-Faculty Interaction, Academic Identity and Persistence of High-Risk Undergraduate Students (Protocol #: 17459)*

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. Because a signed consent form is not required for exempt studies, the filing of signatures of participants with the TWU IRB is not necessary.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

  
Dr. Rhonda Buckley, Chair  
Institutional Review Board - Denton

cc. ✓ Dr. James Williams, Department of Sociology & Social Work  
Graduate School

