5-2015

Undergraduate International Student Persistence at a Large, Public US Institution

Elizabeth Washam Smith
University of Tennessee - Knoxville, elizabeth@utk.edu

To the Graduate Council:

I am submitting herewith a dissertation written by Elizabeth Washam Smith entitled "Undergraduate International Student Persistence at a Large, Public US Institution." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Higher Education Administration.

<div align="right">

Norma T. Mertz, Major Professor

</div>

We have read this dissertation and recommend its acceptance:

J. Patrick Biddix, Jimmy G. Cheek, Tricia McClam

<div align="right">

Accepted for the Council:
<u>Dixie L. Thompson</u>

Vice Provost and Dean of the Graduate School

</div>

(Original signatures are on file with official student records.)

Undergraduate International Student Persistence at a Large, Public US Institution

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Elizabeth Washam Smith
May 2015

ACKNOWLEDGEMENTS

I am truly thankful for the following individuals who provided support, encouragement, and guidance throughout the past few years. Words cannot express how much I appreciate each of you and how you helped shape the research and/or encouraged my personal growth in this process.

To my committee chair, Dr. Norma Mertz, I cannot thank you enough for your guidance and time during the entire research process. You advise so many students and have so many responsibilities, and yet you were always there and always responded to my questions and concerns in such a timely manner. Thank you.

Dr. Patrick Biddix, thank you for your guidance regarding the NSSE and statistical methods in this study. I sincerely appreciate your time and direction that helped shape the study.

Dr. Tricia McClam, I appreciate your willingness to serve on my committee and encourage discussion that helped me to grow as a scholar. I will always be thankful for your questions that led to a conference presentation.

Dr. Jimmy Cheek, your time is limited and valuable, and I am honored that you took the time to serve on my committee and invest in my growth as a graduate student.

Dr. Denise Gardner and Elizabeth Pemberton of the Office of Institutional Research and Assessment, this research could not have been completed without you. I cannot thank both of you enough for your willingness to compile the data for this study. Thank you so much for your time and assistance.

I would like to extend a sincere thank you to Joann Ng Hartmann. As a mentor and leader in international education, you have taught me so much about this field. I could not have

completed this research without your support and encouragement, especially when you allowed me to take annual leave to write. Thank you.

Dr. Terrell Strayhorn, Dr. Margaret Sallee, and Dr. Grady Bogue: One of the reasons I chose to pursue my doctorate at the University of Tennessee was in order to continue learning from you. I appreciate all that each of you have taught me about research and leadership during my graduate school years.

To the Dead End BBQ Gang: Courtney Shaffer, Jana Spitzer, Mary Lucal, Shanna Pendergrast, and David Key, I truly value the encouragement and support you provided throughout these years, especially during the dissertation writing process.

Drs. Katie & Reggie High, I still wonder if I would even be in higher education if you had not put it on my radar. Thank you for your professional guidance, encouragement, and support since I moved to Knoxville. I appreciate both of you always being there for me.

My fellow Demon Deacons, Katie Ellen Woodlieff Smith and Sarah Knight, you were my sounding boards. Your encouragement and understanding were invaluable during the research process.

To my parents, Cindy and Rodney Washam, your encouragement and support have meant so much since I was little. I sincerely appreciate the listening ears you provided during all of the phone calls on this journey.

To my husband Rusty: You never wavered in your support. Thank you for knowing the right words to say when I was discouraged, for listening and pushing when needed, and for your understanding every step of the way. Thank you.

ABSTRACT

As we are living in a highly global society, colleges and universities in the US are seeking to attract international students to study at their institutions. In 2013, over 886,000 international students were enrolled at US colleges and universities, bringing academic, cultural, and economic benefits to US campuses and communities (Institute of International Education, 2014b). However, enrollment at an institution of higher education does not guarantee a student will persist to graduation. While studies of domestic student retention continue to flourish, studies of international student retention are considerably more limited. The purpose of this study was to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US. Two research questions guided this study:

1. Are there differences in terms of social and academic engagement, GPA, and credit hours earned between first-year international and domestic persisters and non-persisters at a large, four-year public research institution in the US?

2. How do social and academic engagement, GPA, and credit hours earned relate to persistence among first-year international and domestic students at a large, four-year public research institution in the US?

Secondary analysis of two datasets was conducted to answer the research questions using descriptive and nonparametric statistics. First-year international student responses to the National Survey of Student Engagement (NSSE) from 2001-2011 as well as GPA and credit hours earned were compared to a matching set of domestic student responses based on persistence and non-persistence to the second year of study. Findings indicated that a higher GPA and more credit hours earned significantly related to persistence of international students. While academic and social engagement were not found to significantly relate to persistence, both persisters and non-persisters reported participation in social and academic activities. In spite of the cultural adjustment challenges that international students face, the findings from this study

suggest that international and domestic students appear to be more alike than different in terms

of social and academic engagement, GPA, and credit hours earned in relation to persistence.

TABLE OF CONTENTS

CHAPTER ONE
Introduction

Around the world, institutions of higher education are striving to globalize their

campuses and attract international students (Wildavsky, 2010). In 2012, over 4.1 million

university-level students studied outside of their home countries (OECD, 2014). As this number

continues to rise, institutions have found themselves in a global competition to attract the best

students (Wildavsky, 2010). While the US remains the most popular study destination for

international students (OECD, 2014), the percentage of international students choosing the US as

a place of study has been decreasing since the 1990s (Bhandari & Chow, 2007; Chin &

Bhandari, 2006). From 1999-2005, international student enrollment in the US rose by 17%, but

international student enrollment in Great Britain rose 29%, in Australia by 42%, in Germany by

46%, and in France by 81% (Wildavsky, 2010). The US is not the only nation attracting

international students, and competition for those students continues to grow.

Institutions in the US seek to enroll international students because the presence of this

population provides numerous benefits. Economically, in 2013, international students

contributed over $27 billion to the US economy through tuition, room and board, books and

supplies, health insurance, transportation, and support for accompanying family members,

among other living expenses, according to the U.S. Department of Commerce (Institute of

International Education, 2014a). In addition to the positive economic effect, international

students bring new perspectives to US classrooms. American students and professors benefit

academically, culturally, and socially from interaction with and the experiences that

international students bring (Andrade & Evans, 2009; Wildavsky, 2010). The presence of

international students and faculty allows domestic students to interact with other cultures

without studying abroad and to learn about the perspectives that international students and faculty bring, and in so doing, build bridges between cultures and countries (Andrade, 2009).

In order to attract the world's top students, universities in the US spend time and money recruiting international students. Admissions counselors from individual institutions travel worldwide to attend admissions fairs, and institutions hire overseas recruiting agents to draw students to the US (Wildavsky, 2010). Given these expenditures on international student recruitment, it is only natural for institutions to want to keep their students throughout the period of study towards a degree. However, matriculation at an institution does not guarantee that the student will remain until graduation (Tompson & Tompson, 1996).

While most retention studies do not include international students, the Consortium for Student Retention and Data Exchange (CSRDE), a consortium of 472 higher education institutions in the US which conducts annual retention studies among its members, does include international students. In 2011, the four-year graduation rate for international students at member institutions was found to be only 38.2%, and the six-year graduation rate, 62.5%, statistics comparable to the graduation rates for the total student population (including domestic students) surveyed, 36.3% and 60.3%, respectively (Hayes & Whalen, 2012). Intensive efforts are underway at higher education institutions across the US in response to the retention rates for domestic students (Andrade, 2009; Kuh, Kinzie, Schuh, Whitt, & Associates, 2010), yet the retention of the international student population, whose retention rates are similar, is barely considered in research and practice (Andrade, 2009). Given the economic, social, and cultural benefits that this population brings to US institutions, one would expect that higher education in the US would be as concerned about the persistence of this population as they are about domestic students.

Numerous studies have investigated domestic student persistence (Astin, 1993; Bean, 1990a; Cabrera, Nora & Castaneda, 1993; Hughes & Pace, 2003; Thomas, 2000; Yorke, 1999). Some of the factors influencing domestic student persistence include GPA (Cabrera et al., 1993), faculty interaction (Astin, 1993), academic advising (Thomas, 1990), living on campus (Berger, 1997), and social and academic engagement (Hughes & Pace, 2003). However, since few studies have examined the international student population, it is not known if the persistence factors for this subpopulation differ from those for the domestic population that has been studied. It is known that international students come from different cultural and educational backgrounds than students raised and educated in the US, and that these differences affect their adjustment to the college experience (Evans, Carlin, & Potts, 2009; Kok-Soo, 2008; Liberman, 1994; Lipson, 2008; Pedersen, 1991; Tompson & Tompson, 1996). Thus, it is reasonable to assume that these differences in and of themselves could influence their persistence to graduation.

A few studies have investigated international student persistence (Andrade, 2005; Andrade, 2008; Behroozi-Bagherpour, 2010; Evans, 2001; Johnson, 2008; Kitsos, 2012; Kontaxakis, 2011; Lee, 2012). Many of these studies interviewed students at a single institution (Andrade, 2005; Andrade, 2008; Behroozi-Bagherpour, 2010; Evans, 2001), while some investigated only students at small, religiously affiliated institutions (Andrade 2005; Andrade, 2008; Evans, 2001). Other studies have focused on a subpopulation of international students, such as athletes (Kitsos, 2012; Kontaxakis, 2011). Three studies found social integration to lead to persistence (Andrade, 2005; Andrade, 2008; Lee, 2012), however others found that social integration was not a persistence variable (Behroozi-Bagherpour, 2010; Johnson, 2008; Mamiseishivili, 2012).

The limited number of studies about international persistence, the narrow scope of many of these studies, and the lack of agreement, no less identification of a common set of persistence variables among existing studies, incited us to investigate this population further.

Statement of the Problem

As we are living in a highly global society, colleges and universities in the US are seeking to attract international students to study at their institutions. In 2013, over 886,000 international students were enrolled at US colleges and universities, bringing academic, cultural, and economic benefits to US campuses and communities (Institute of International Education, 2014b). However, enrollment at an institution of higher education does not guarantee a student will persist to graduation. Indeed, the persistence rate for international students mimics that of domestic students. While studies of domestic student retention continue to flourish, studies of international student retention are considerably more limited. While we know some things about the persistence of this group, we lack a clear understanding if some variables influence their persistence or non-persistence, and whether or not these variables are similar to or different from those that influence domestic student persistence or non-persistence. Thus, this study sought to gain a better understanding of undergraduate international student persistence.

Purpose of the Study

The purpose of this study was to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US.

Research Questions

Specifically, the study addresses the following research questions:

1. Are there differences in terms of social and academic engagement, GPA, and credit hours earned between first-year international and domestic persisters and non-persisters at a large, four-year public research institution in the US?

2. How do social and academic engagement, GPA, and credit hours earned relate to persistence among first-year international and domestic students at a large, four-year public research institution in the US?

Significance of the Study

The present study is significant for several reasons. First, it adds to the limited literature on international student retention in an effort to help resolve the conflicts in the findings in current studies. Second, it provides more variables related to international student retention to be available for consideration by international student advisors and university administrators.

As US institutions focus on student retention, and international student enrollment increases at these institutions, it is critical to understand how best to retain this subpopulation of students. Findings from this study will help university administrators, professors, and international student advisors be aware of the factors that influence retention of these students so that appropriate policies can be created and helpful practices can be implemented. Further, knowledge gained from the study may be able to inform the content of orientation sessions in order to support students from the very beginning of study in the US and provide a basis for retention programming specific to this population. In addition, international students may be able to use the findings to be proactive in identifying their needs and in seeking campus resources to aid them in their transition and path to graduation.

Theoretical Framework

Tinto's (1987) model of institutional departure provided the framework that guided this study. This theory is based on work by sociologist Emile Durkheim related to types of suicide. Egotistical suicide was one of the forms of suicide that was found to occur when an individual is unable to become integrated and establish membership into society. Membership in a community is achieved through social and intellectual integration, which includes personal

interactions in society as well as sharing common values with the other members. This integration is considered essential to living in a social world (Tinto, 1987). Based on this concept of leaving society through suicide, Tinto created a model of institutional departure to explain why students leave an institution of higher education. He posited that students remain at an institution when they are socially and academically integrated. Insufficient integration results in students leaving the institution (Tinto, 1987).

Tinto's (1987) model seeks to explain why individuals choose to voluntarily leave an institution before graduation. The model includes four main elements: pre-entry attributes, goals/commitments, institutional experiences, and integration into the university community. He posited that in combination, these factors lead to retention or departure. The model focuses primarily on the institutional experiences of the student, and the way in which the academic and social experiences of the student at the institution lead to integration or lack of integration. Positive academic and social experiences are seen as leading to integration into the university community and persistence, while negative experiences are perceived to prevent integration and lead to departure.

Tinto's (1987) model has informed many persistence studies on domestic students, a few of which will be discussed in detail in chapter two (Berger, 1997; Cabrera et al., 1993; Pascarella & Terenzini, 2005; Thomas, 2000). Pascarella and Terenzini (2005) state that his theory is "probably the most widely used framework guiding research into the complex persistence-related interconnections among students and their college experiences" (p. 425). In addition to its use in research, the theory has informed programs and strategies at various institutions in the US (Darling & Kahrig, 2008; Saret, n.d.). Such programs as first-year seminars, learning communities, academic advising programs, and undergraduate research programs allow students

the opportunity to interact with professors and fellow students in order to become more involved

in the social and academic culture on campus (Pascarella & Terenzini, 2005).

Tinto's (1987) model informed the present study in a number of ways. First, it influenced

the way the study was conceptualized. It helped to frame the research questions and variables

chosen for examination. In addition, it influenced one of the datasets selected to be used in the

study. The National Student Survey of Engagement (NSSE) assesses institutional experiences

and the extent to which students are integrated into the university community, two elements of

Tinto's (1987) model. Studies have found that higher levels of engagement indicate a greater

possibility of the domestic student persisting to the second year (Chambers, 2009; Hicks &

Lehrer, 2003; Hughes & Pace, 2003; Williford & Schaller, 2005), but to date, no studies exist

that investigate international student NSSE responses and persistence.

Definitions

Persistence – "progressive reenrollment in college" (Pascarella & Terenzini, 2005). For the
purposes of this study, persistence and retention are used interchangeably, and can include
progressive reenrollment in the next term or to graduation.

Persisters- students who enrolled at the institution for the Fall term of their second year of study,
after completing the first year

Non-persisters- students who did not enroll at the institution for the Fall term of their second year

International students- students who self-identified as "an international student or foreign
national" on the NSSE survey

Domestic students- students who did not self-identify as "an international student or foreign
national" on the NSSE survey

Organization of the Study

The study is organized in five chapters. Chapter One introduced the topic of the study, the research questions and the significance of the study. Literature relevant to the study is critically reviewed in Chapter Two. The methods and procedures used in the conduct of the study are detailed in Chapter Three, and the findings of the study are described in Chapter Four. The fifth chapter provides a summary of the study and how it was conducted, a summary of the findings, a discussion of the findings, conclusions drawn from the study, and recommendations for future research.

CHAPTER TWO
Review of the Literature

The purpose of this study was to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US. The relevant research and literature on this topic will be critically reviewed in this chapter in three sections. In the first section, research and literature on domestic student persistence is reviewed. In the second section, the research and literature on international student persistence is reviewed. In the final section, the literature on the National Student Survey of Engagement is reviewed, as this instrument is the primary data source for the study.

Domestic student persistence

As persistence factors of domestic students at US institutions have been studied extensively, and only a few international student persistence studies exist, it is useful to briefly review the literature and research on domestic student persistence in order to gain an understanding of what we know regarding their persistence, to compare it to what we know about international student persistence. Talking about domestic student persistence, Kuh et al. (2010) declared that "what students *do* during college counts more for what they learn and whether they will persist in college than who they are or even where they go to college" (p. 8); it was interesting to see if this also held true for international students.

While persistence studies of domestic students vary widely in terms of independent variables, institutional type used, number of institutions studied, and subpopulations of students included, many have found that academic and social engagement factors influence persistence (Astin, 1993; Berger, 1997; Cabrera, Nora, & Castaneda, 1993; Thomas, 2000). For example, Cabrera et al. (1993) examined many identified persistence variables at one institution. They sought to create a model of retention through surveying almost 2,500 first-year American

students at one large institution in the US. Institutional data were used to determine GPA and if

the student persisted to the second year of college. Students who persisted to the second year

were invited to complete a survey regarding academic and social involvement, perceptions of the

campus, and satisfaction. Findings from 466 responses (an 18% return rate) indicated that such

items as intent to persist, GPA, support of friends and family, goal commitment, academic

integration and social integration were related to persistence (Cabrera et al., 1993).

Astin (1993) conducted a more extensive longitudinal study on involvement and retention

to graduation of students at over 200 institutions. The study included two student surveys on

involvement and personal characteristics, a faculty survey regarding faculty attitudes, values, and

teaching methods, and institutional data on academic performance, retention, college admissions

test scores, and graduate and professional admissions test scores. Only one part of the study

investigated persistence to graduation, which will be discussed here. The first survey

administered was the Cooperative Institutional Research Program (CIRP) survey given in 1985

to first-year students in the US. A sample of 95,406 students who completed the CIRP survey

were selected to complete a follow-up questionnaire in 1989-1990, and their names were sent to

their institutions for enrollment and graduation data. Of the over 75,000 responses, the sample

was narrowed down to include students at four-year institutions with reported SAT or ACT

scores who completed both surveys and graduated in four years, totaling 11,097 students.

Regarding the influence of involvement on retention, findings included that talking with faculty

outside of class, hours spent socializing with friends, receiving vocational or career counseling,

and giving class presentations correlated positively with persistence. Factors that negatively

influenced retention included working off-campus part-time and reading for pleasure (Astin,

1993).

Berger (1997) also conducted a longitudinal study focused on one engagement variable: social engagement. Students at one private institution in the southeastern US were surveyed regarding their sense of community in residence halls in August, October, and March of their freshman year. Using path analysis, findings from 718 student responses indicated a positive relationship between the sense of community found in residence halls, social integration, and persistence to the next semester (Berger, 1997).

Thomas (2000) also investigated persistence at one institution, but examined both academic and social integration of 322 first-year students at a private four-year college in the western US. Data examined in the study included student responses to a survey administered to students during freshman orientation in summer 1992, responses to the First-Year Experiences Survey administered in April 1993, which included questions regarding social interactions and conversations with fellow students, and institutional data regarding GPA and enrollment in the second year of school. Findings included that academic integration impacted persistence, and students who maintained broad, connected networks of social groups outside of their own peer group were more likely to persist than those who only had social ties within their own peer group (Thomas, 2000).

In addition to research conducted across different settings, some studies have investigated social and academic integration factors and various subpopulations of students, such as first-generation college students (Davenport, 2010; Lohfink & Paulsen, 2005; Nava, 2010; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), African American male students (Spradley, 1996; Strayhorn, 2012; Tauriac, 2009), and non-traditional students (Sorey & Duggan, 2008; Wyatt, 2011). For example, Lohfink and Paulsen (2005) examined persistence factors from a national data sample of first-generation and continuing-generation students who first enrolled in four-year

institutions in the 1995-1996 school year. Responses from the Beginning Postsecondary Students Longitudinal Survey were used, including responses of 1,167 first-generation students (those whose parents had no schooling at all beyond high school) and 3,017 continuing-generation students. The survey included questions regarding demographic information, pre-college achievement, college choice reasons, institutional variables, and social and academic involvement. Regarding social and academic involvement, it was found that academic integration, particularly faculty-student interaction, was positively related to persistence to the second year of study for first-generation students, while this had no relationship to persistence for continuing-generation students. In contrast, for continuing-generation students, social involvement in clubs was found to be positively related to persistence, but there was no significant relationship between engagement in clubs and persistence for first-generation students (Lohfink & Paulsen, 2005).

Spradley (1996) investigated the persistence factors of ten African-American male students who graduated between 1991 and 1995 from a four-year college in the northeastern US. Interviews and one focus group were conducted in order to determine the relevance of six variables on the persistence of these alumni. The variables investigated included academic (e.g. course availability, absenteeism), environmental, psychological, background and demographic, GPA, and intent to leave, and all were reported to be important to persistence. However, while social integration was not even included in the six variables being investigated, Spradley (1996) found that seven of the 10 participants indicated that peer interactions and social integration were very influential in their persistence (Spradley, 1996).

Sorey and Duggan (2008) explored persistence factors of both traditional and non-traditional (25 years of age or older) first-year students at a public, two-year community college

in the southeast. In Fall 2005, 700 students were asked to complete a survey regarding their

college experiences. Reponses from 68 traditional-age students and 55 non-traditional age

students, for a 17.6% response rate, were matched with institutional student data in Spring 2006.

Institutional data included enrollment in the Spring term, Fall term GPA, and age. Two-way

contingency table analyses yielded findings that included social integration and academic

integration to both influence the persistence of both groups. However, social integration was the

strongest predictor of persistence for non-traditional students and had the weakest influence on

traditional student persistence. In addition, academic integration was found to be the least

significant variable on persistence for non-traditional students but a strong influence on the

persistence of traditional students (Sorey & Duggan, 2008).

These studies show that academic and social integration have been found to influence the

persistence of domestic students in a variety of settings, no matter the institution type, number of

institutions involved, or size of the population investigated. Different subpopulations of students

have also reported social or academic integration to influence persistence, if not both.

International student persistence

This section on international student persistence contains three parts. The first part

contains a critical review of the research directly related to international student persistence

factors. The second and third parts discuss factors that influence international students in the

US, which need to be considered as potentially affecting persistence. The second part includes

literature and research on cultural adjustment, as international students must adjust to a new

social and academic culture in the US. In the third part, literature and research regarding

international student goals is discussed, as it is important to understand that students come to the

US to study for various reasons, which may not include degree attainment or even persisting to a second year of study.

Persistence research

International student persistence rates are similar to that of the domestic student population, yet the retention of the international student population has barely been considered in research (Andrade, 2009). It has only been within the past few years that studies investigating international persistence have been conducted. Of the limited number of studies that exist, many are narrow in scope and differ in their findings.

Andrade (2005) conducted interviews and focus groups with 12 international students from Asia and the Pacific Islands in their senior year at one private, religiously affiliated four-year institution in the western US. Questions regarding academic and social experiences at the institution, especially related to their first year of study, were asked of the participants in order to identify factors related to their persistence. International students comprised 45% of the total student population of 2,400 students at the institution. The findings revealed that these students who had persisted experienced challenges both in and outside of the classroom, but discovered ways to adjust so that they could persist to their senior year. Challenges included difficulty with the English language, unfamiliarity with the American education system, difficulty participating in classroom discussion, and the lack of time for involvement in social groups. Strategies students used that assisted in their persistence included interacting with friends and professors, setting goals related to completing assignments, setting the goal of graduation, utilizing campus support services, and involvement in student clubs and religious activities (Andrade, 2005).

To expand on her previous study, Andrade (2008) conducted a study at the same private, religiously affiliated institution in a search for how student backgrounds, university experiences,

and personal characteristics influenced international student persistence. Seventeen individual interviews were conducted with senior international students from Asia and the Pacific Islands. She found that student persistence appeared to be influenced by a personal motivation to graduate, support and encouragement from family, friends, professors, campus staff, and church leaders, and engagement in social activities and in the spiritual life of the institution. Students viewed the faculty at their institution as role models, valued the support given to them, and saw building relationships with American students as beneficial to their persistence in numerous ways: by allowing them to have the opportunity to practice and perfect their English language skills and to learn more about the culture by observing firsthand the customs and practices and asking questions about the culture. International students also became more aware of university organizations and practices through interacting with fellow American students, and adjustment and understanding were easier to achieve as interaction with American students increased (Andrade, 2008).

Evans (2001) interviewed and conducted focus groups regarding persistence factors of Polynesian students at the same religiously affiliated institution in the western US at which Andrade (2005; 2008) later conducted her studies. The 89 individuals who participated in the study included faculty and staff at the institution, Polynesian students who entered the university in 1996, and Polynesian students who entered the university prior to 1996. The Polynesian students were divided into two groups: persisters and non-persisters. Students reported that factors influential to leaving the institution included difficulty coping with the freedom that college provided, homesickness, lack of focus as to why the student was at the institution, general education requirements, and difficulty balancing work and study. Factors influencing persistence included strong English language skills and support from faculty (Evans, 2001).

Findings from Evans' (2001) study and Andrade's (2008) study were compared by Andrade and Evans (2009), focusing on the non-persisters in Evan's (2001) study and the persisters in Andrade's (2008) study. It is interesting to note that some variables, such as family relationships, relationships with friends, and spirituality influenced persistence in Andrade's (2008) study but led to departure in Evan's (2001) study. For example, relationships with fellow international students, including those from one's home country or culture, were found to help persistence in Andrade's (2008) study, while Evans (2001) found that these same relationships led to academic difficulties, as friends were considered a distraction. In Andrade's (2008) study, students reported that friendships with co-nationals provided needed encouragement and support, which helped them adjust to living in the US and to remaining at the institution. For new international students, co-nationals who had been at the university or in the US for longer periods of time shared information and guidance in navigating the new culture (Andrade & Evans, 2009). However, students in Evans' (2001) study reported that friendships and socialization got in the way of academic success. One student from Tonga who departed from the university claimed, "When my friends came by my room and wanted to head into town or something, I couldn't say no. If I stayed back to study I would be mocked and made fun of for making school more important than being Tongan" (Andrade & Evans, 2009, p. 52). Poor academic performance and departure resulted when students put relationships with friends before studying in Evan's (2001) study, whereas friendships helped those in Andrade's (2008) study to adjust culturally and remain at the institution (Andrade & Evans, 2009).

In the study by Andrade (2008), international students who persisted knew why they were attending college. In contrast, the international students who left the university in Evan's (2001) study valued education, but lacked motivation to succeed academically and claimed that they had

not matriculated for the correct reasons. Some students shared that they came to a university in the US to please their parents or to "get away" from their parents and home country. For international students, it was critical to understand the purpose of education to be motivated to persist, which is also supported by Tinto (1993) and Bean (1990a). Knowing one's purpose affects motivation, which in turn influences persistence, as found by Andrade (2008).

Family relationships also resulted in conflicting findings between the two studies. Andrade (2008) found that students who persisted had family support to continue in college, whereas Evans (2001) found that students who departed had good relationships with their families, but left the institution in order to return home to assist their families with problems that had arisen or due to homesickness (Andrade & Evans, 2009).

Spirituality played a role in persistence in both studies as all of the international students at this institution were members of the religious organization affiliated with the institution. Those who persisted enjoyed the religious atmosphere (Andrade, 2008), while those who departed in Evans' (2001) study were unable to follow the honor code and religious tenets, and felt the need to leave in order to work on their personal and spiritual life before focusing on academics (Andrade & Evans, 2009).

While the works of Andrade (2005; 2008) and Evans (2001) are helpful to our understanding of international student persistence, their studies are extremely limited in scope, as only a small number of students from Asia and the Pacific Islands were interviewed at the same private, religiously affiliated institution. In addition, the findings conflicted, since family relationships and social involvement led to persistence in Andrade's (2008) study, but to departure in Evans' (2001) study.

Two studies have investigated persistence factors at other institutions using quantitative means (Kwai, 2009; Mamiseishvili, 2012). Mamiseishvili (2012) investigated persistence factors of 200 international first-year students who completed the Beginning Postsecondary Students Longitudinal Study in Spring 2004 and participated in follow-up survey interviews in 2006. Using logistic regression he examined how selected factors influenced students who remained or did not remain enrolled in any US higher education institution at the end of the second year of study. Similar to the findings of Evans (2001), and in contrast to those of Andrade (2008), social integration was found to negatively influence persistence. Predictors of persistence included having a plan to graduate and academic integration, which were found in Andrade's (2008) study. In addition, Mamiseishvili (2012) investigated GPA and enrollment in a remedial English course during the first year of study. While first year GPA significantly influenced persistence to the second year, the students who enrolled in a remedial English course during the first year were less likely to persist than those who did not. Mamiseishvili's (2012) study helped affirm that having degree plans and academic integration influenced persistence. However, of the 200 students in the study, 41.9% were enrolled in two-year institutions, while the remaining 58.1% were enrolled in four-year institutions. As students were not all enrolled at one type of institution, nor did the researcher disaggregate the results by institution, it is not clear if institutional type could have affected these results.

Kwai (2009) focused on one type of institution, investigating international student persistence at eleven public four-year institutions. Institutional data provided information regarding pre-entry attributes, institutional experience, and on-campus integration of new freshmen and new transfer degree-seeking students. On-campus integration included the number of appointments with the institution's International Student Office, on-campus employment, and

on-campus housing. Step-wise binomial logistic regression was used to determine factors predicting persistence to the second year. Findings included that second semester GPA and first and second semester credit hours attempted significantly influenced retention to the second year, but the majority of other variables investigated, such as TOEFL (Test of English as a Foreign Language) score, on-campus employment, first semester GPA, and on-campus housing did not yield statistically significant results (Kwai, 2009). This is the only study to date that has investigated living on campus and persistence of international students; however, while living on campus has been found to influence persistence for domestic students (Berger, 1997; Pascarella, Terenzini, & Blimling, 1994), this variable did not yield statistically significant results in Kwai's (2009) study.

Additional research has been conducted regarding international student persistence, though findings may not be applicable to the entire international student population. Behroozi-Bagherpour (2010) interviewed community college students who were enrolled for five years without graduating, while Kitsos (2012) and Kontaxakis (2011) investigated persistence factors of the international student-athlete population.

Behroozi-Bagherpour (2010) conducted interviews with 10 international students at one large, urban, Texas community college regarding engagement and persistence. These students were enrolled for at least five years but had not graduated. In spite of the fact that these students reported not being engaged in campus events, many even reporting they were unaware of such events (Behroozi-Bagherpour, 2010), they persisted, raising questions about the role of social engagement on international student persistence.

Kitsos (2012) and Kontaxakis (2011) each investigated persistence variables of a subpopulation of international students: athletes. Kitsos (2012) surveyed and interviewed

academic support staff for athletes at six NCAA Division I institutions to identify academic support practices that led to persistence as well as explanations for the persistence of their student-athletes. Kitsos (2012) found that supporting international athletes through academic advising and counseling, specialized tutoring, and English language support led to success and persistence. Kontaxakis (2011) interviewed and observed six student athletes from three institutions in Indiana regarding experiences that impacted their retention. He found that English language proficiency, the ability to adjust to the new culture, good time management in being an athlete and student, and getting through homesickness influenced their experiences and ultimately their retention (Kontaxakis, 2011).

While both of these studies added to the literature on this population, it is important to consider that not all international students are athletes and the findings may not be applicable to the entire international student population. Further, since Kitsos (2012) did not speak to students directly, it is possible that the factors he identified may not be ones the athletes might have emphasized. It is interesting to note that while in Kontaxakis' (2011) study being able to manage time between studies and athletic responsibilities influenced retention, the lack of time management ability as expressed by students in Evans' (2001) study prevented retention.

Cultural adjustment

In investigating international students, it is critical to take into consideration differences in cultural background and purposes of studying in the US. All college freshmen undergo a transition period, but international students face a greater adjustment to American college and university life than do American students (Leong & Sedlacek, 1986; Mori, 2000; Pedersen, 1991). Charles Lipson contended, "Some of the world's best students come to the US and Canada to study. Despite their strong academic backgrounds, they face real challenges adapting

to the university environment here" (Witherell, 2008, p. 44). Academically, the US system differs from the systems in most countries (Evans, Carlin, & Potts, 2009). Due to educational and cultural differences, integration and engagement in American university life is more difficult and it takes international students a longer period of time to adjust; however, they must do so in order to succeed (Liberman, 1994). If they do not adjust to these academic and social differences, it is possible that they will not persist (Levy, Wubbels, Brekelmans, & Morganfield, 1997).

Academic issues. The US academic system differs from the academic systems in most countries (Evans et al., 2009). The major academic challenges for international students in the US include mastering the English language, adjusting to the classroom environment, and understanding plagiarism (Kok-Soo, 2008; Liberman, 1994; Tompson & Tompson, 1996; Lipson, 2008; Pedersen, 1991).

Language. Understanding the English language is an oft-cited concern of international students (Andrade, 2006; Lipson, 2008; Tompson & Tompson, 1996). The Test of English as a Foreign Language (TOEFL), an exam that measures a student's ability to use English at the university level, or a comparable English exam is required by many US universities, and many require a specific score in order for a non-native English speaker to be eligible for admission (Educational Testing Service, n.d.). While students may test well on the TOEFL, there is a difference between testing adequately in English and fully understanding and communicating in the English language (Tompson & Tompson, 1996). Professor accents, speed of speech, idiomatic expressions, and non-formal English are heard daily on college campuses. As a result, non-native English speakers may understand English well enough to perform on the TOEFL, but they may not fully comprehend classroom lectures or discussion due to these factors, as indicated

in a few studies (Ladd & Ruby, 1999; Lin & Yi, 1997; Ramsay, Barker, & Jones, 1999; Tompson & Tompson, 1996; Trice, 2004).

Tompson and Tompson (1996) investigated both professor response and student response to adjustment at two business schools at universities in the southeastern US. Through surveys, faculty were asked about international student behaviors that negatively affected their performance, and students were asked about adjustment factors and the coping strategies they used to help in adjustment. After analyzing survey results, focus groups were conducted with the students to gain a deeper understanding of their experiences. Some students reported that although they scored well on the TOEFL and spent many years studying English, they did not always fully understand class lectures or discussion. One student reported understanding the language but not the meaning of questions asked by the professor, or what an appropriate response would be until other students responded first (Tompson & Tompson, 1996). Understanding the English language, idiomatic phrases, and accents is critical to success at a US university, and it may take time for students to feel comfortable with their language skills. Language proficiency must be acquired quickly in order to be successful in the classroom, but not all international students are able to acquire the necessary proficiency quickly.

Classroom environment. The US classroom environment differs from the classroom environment in many countries. Classroom participation and student-faculty interaction are two areas in which international students report difficulty adjusting to US classrooms (Liberman, 1994).

Studies have found that Asian students, in particular, perceive US classrooms to be quite different from those at home (Kok-Soo, 2008; Liberman, 1994; Tompson & Tompson, 1996). Liberman (1994) conducted small group interviews with 680 Asian students at one large public

university over a period of seven years. Students indicated that classroom discussion and faculty-student interaction in the US were new challenges. In their home countries, students are expected to respect the teacher and agree with all the teacher says. Critical analysis and reflection are not required; they are to memorize the lessons taught by the professor and not challenge the professor's views. This was in sharp contrast to what was now expected of them in the classroom. They reported that being in a US classroom was sometimes uncomfortable as students would question the professor's comments, which is considered disrespectful in their home country. It took the Asian students time to adjust to speaking in class and asking for clarification on assignments (Liberman, 1994).

In addition, Tompson and Tompson (1996) found that the majority (77%) of the professors surveyed in their study reported that international students did not fully participate in class discussions, even when the syllabus stated that class participation was a part of the final grade. This lack of participation in class negatively affected the students' grades (Tompson & Tompson, 1996).

Plagiarism and cheating. The concept of thinking for oneself has also been reported as a difficult transition issue for international students. Creative thought is not only encouraged in class discussions in the US, but also in written assignments. In many cultures, the repetition of material is required; students are not taught to be creative and express original thought, and altering another's words would be disrespectful. In addition, helping friends in need is not viewed as cheating in many countries. As a result, plagiarism and cheating are issues that international students may struggle with at US institutions (Ladd & Ruby, 2010; Smithee, 2009). In the study by Tompson and Tompson (1996), 24% of the faculty surveyed indicated that they

had international students who had "violated ethical guidelines regarding scholastic integrity" (Tompson & Tompson, 1996, p. 55).

In the US, students are expected to think for themselves in assignments. This can be an abrupt change for students from countries where this is neither expected nor desired. As a high school principal from Fiji who prepared students for college claimed, "we train our students to be exam takers but not independent thinkers" (Andrade & Evans, 2009, p. 65). Students from countries not familiar with US educational policy and expectations often need to learn how to answer questions and write papers in an entirely different style than that which they were taught in high school (Smithee, 2009) to be successful in the American classroom.

Academic environment. International students are often surprised at the freedom given to students in choosing majors, changing majors, and taking classes completely unrelated to the major finally selected at US institutions. In China, for example, students must take a university entrance exam and select their top three choices of university. Students are admitted to a university based on their exam scores and placed in a cohort of students with whom they take the same classes until graduation. As students are placed according to major and exam score, changing majors is not a consideration (Chow, 2010).

In addition, students in many countries only take courses in their major field in college; general education is not a component of their education. As a result, international students have described general education coursework in the US as frustrating, especially as this coursework is often completed early in one's college years. A new international student arrives in the US, excited to begin a course of study, only to find that major coursework will not be taken for another year or two, even though they may have already taken coursework related to their college major during the later years of high school. It is surprising to them to arrive at a

university in the US and be required to take general education courses instead of focusing on major coursework (Andrade & Evans, 2009; Liberman, 1994).

These changes from the way in which international students have been raised and instructed to be a student are factors in their adaptation to a US academic culture. Thus, they are likely to influence their persistence as well.

Social issues. In addition to academic challenges, international students face social challenges in transitioning to the US university culture. Finding a niche in an activity or program, and acquiring friends through formal and informal interactions with peers, enhances the social engagement and integration that is perceived to be related to student persistence (Astin, 1993; Tinto, 1987). While the particular niche is important, the location of the niche in the social community is also significant. Tinto (1987) stated that "the social and intellectual life of most institutions has a center and a periphery" (p. 59). The closer one's niche is to the center of the social and intellectual life of the school, the more likely the student member of the niche will persist to graduation (Tinto, 1987).

International students are not part of mainstream culture when they arrive on campus. As the university has dominant and subordinate subcultures, the international students fall into the subordinate culture. The degree to which this subculture is central or on the outer edge of the mainstream college community can influence the subculture's effect on persistence. The more distance between the subculture and the dominant culture, generally the less institutional commitment the student will have. In turn, this institutional commitment serves as a predictor of student withdrawal from school or persistence to degree (Tinto, 1987). Studies have found that developing a social network and understanding cultural norms are two critical issues often cited

by students that influence their ability to adjust to the new culture (Pedersen, 1991; Tompson & Tompson, 1996; Zhai, 2004).

    Developing a social network. When international students arrive in the US to study, they suddenly find themselves without the support network they had in their home countries. Wan, Chapman, and Biggs (1992) suggest that social support is needed in order to transition to a new situation, and social interaction has been found to have a significant impact on international student adjustment (Zimmerman, 1995). Although developing a social network is important, it also has been reported by international students as the most critical and difficult aspect of adjustment (Tompson & Tompson, 1996).

    International students have reported that social issues were more important and mentally time-consuming than academic challenges (Tompson & Tompson, 1996); however, it is still not clear how or if this relates to persistence (Andrade & Evans, 2009; Mamiseishvili, 2012). Some studies have found that the greater number of friendships one develops and greater feeling of inclusion positively relate to student adjustment and integration (Hayes & Lin, 1994; Rajapaksa & Dundes, 2002). Rajapaksa and Dundes (2002) surveyed 182 international students at twelve institutions and 100 domestic students at one institution regarding their adjustment to college life. It was found that international students who claimed to have close friends felt better adjusted to college life than those who did not have any close friendships (Rajapaksa & Dundes, 2002).

    In contrast, Hechanova-Alampay, Beehr, Christiansen, and van Horn (2002) claim that the nature of the social support is more important than the quantity. They surveyed 294 international and domestic students at one institution regarding adjustment strain and social support over a period of six months. Results of three surveys indicated that for the 106

international students, friendships and support by host country students assisted more with adjustment than friendships with other international students. Unfortunately, building relationships with American students has been found to be difficult to develop (Al-Sharideh & Goe, 1998; Terkla, Roscoe, & Etish-Andrews 2007; Tompson & Tompson, 1996).

In addition, according to international students in a study by Zhai (2004), social isolation from American students was due to differences in cultures regarding individualism and collectivism. Zhai (2004) conducted individual interviews with ten international students at one large research institution in the mid-western US. Data from the interviews were analyzed using content analysis. Students reported that the individualistic culture of the US was very different than the collectivist culture in which they were raised and educated and that this cultural conflict made it difficult to build relationships with American students (Zhai, 2004). Individualism/Collectivism is one of five cultural dimensions suggested by Hofstede (1991) to explain cultural differences and differences in social norms, and will be discussed in the following section.

Social norms. A difficult area of adjustment for students who have just entered the US includes being aware of norms, rules and regulations of the US university culture (Chapdelaine & Alexitch, 2004; Tseng & Newton, 2002). If a student does not adjust well, it is possible that the student will have difficulty succeeding and persisting. The proper way to address different people (secretaries, professors, and peers, for example) and the proper way to behave in the classroom have been found to be situations of uncertainty for international students (Levy et al., 1997; Tompson & Tompson, 1996). "Many of the problems that international students experience may actually stem from their attempts to adjust to university life using strategies that would be effective in their own country but ineffective in the U.S." (Tompson & Tompson,

1996, p. 54). Daily communication and interaction are constructed by one's culture and the main barrier to effective intercultural communication is cultural difference. Some of the major differences can be explained through Hofstede's (1991) dimensions of culture which demonstrate how culture influences intercultural communication.

Hofstede (1991) identified five dimensions of culture which explain how cultural values influence social behavior. Between 1967 and 1973, Hofstede surveyed over 100,000 employees of IBM, an international business organization, regarding how values are influenced by culture. Over 71 countries were represented by survey respondents, and four dimensions of cultural patterns were found: individualism and collectivism, power distance, uncertainty avoidance, and masculinity versus femininity (Hofstede, 1991). A fifth dimension, time orientation, was added in 1991, based on the research of Michael Bond through a similar survey given to students in 23 countries. This second survey was developed with the assistance of Chinese scholars to reduce Western bias in the first survey (Hofstede, 2001). These five dimensions influence communication effectiveness and relate to the transition of international students to the US culture (Hofstede, 1991).

Individualism and collectivism are two cultural values that involve how people relate to larger social groups, and involve the degree of allegiance an individual has to the self and to the group. Individualistic cultures stress the importance of the individual's autonomy. The good of the individual, not the group, is the basis for decisions and actions (Lustig & Koester, 2003). Individualism focuses on independence, self-reliance, individual achievement, and personal self-esteem (Hofstede, 2001). If students have problems or concerns in an individualistic country, they are taught to speak out and ask questions (Lustig & Koester, 2003). They also find pride in being praised in front of others. In the US classroom, this may be difficult for a student from a

collectivist society, as collectivism focuses on interdependence, group needs and goals, and personal modesty (Hofstede, 2001). One is not to stand out from the rest of the group, nor point out others in front of the group. A student may even shy away from or feel uncomfortable when given public compliments. This could be an issue when group work or class presentations are assigned to students from collectivist countries, and the student could have a very difficult time adjusting to these requirements. According to the study by Zhai (2004), international students indicated that the difference between individual and collectivist cultures was a large factor in their transition process, and that these differences resulted in difficulty in making friends. China and South Korea send a large number of students to the US every year (Institute of International Education, 2014b) and these two countries are highly collectivistic, whereas the US has a very high degree of individualism (Lustig & Koester, 2003). Students from collectivist nations who arrive in the US to study find it quite challenging to adjust to the individualistic nature of American culture.

The power distance dimension of Hofstede's theory posits that less powerful members of a society expect and accept that power is distributed unequally in their country (Hofstede, 1991). Cultures with a high degree of power distance, such as China and India, stress the importance of social order and one's place in it. Authority figures, including teachers and parents, should not be challenged or questioned, and those in power may use their power in whatever way they desire. Conversely, cultures with a low degree of power distance feel that human inequality is wrong, and less distance between social class power exists (Hofstede, 1991). Expressing beliefs that question authority is normal and even encouraged by professors and supervisors in the US, for example. A student from a country with a high degree of power distance could become uncomfortable in the classroom when observing other students questioning the professor or

sharing opinions of their own that contradict the professor's beliefs. Not only could this be uncomfortable to observe, but the student may shy away from participating in class, even if expected to raise questions and contribute personal thoughts (Tompson & Tompson, 1996). As a result, the student may have difficulty achieving a good grade in the class, or may find life in the US classroom to be unpleasant, which could ultimately influence persistence.

Another dimension of Hofstede's theory is uncertainty avoidance. While humans of all cultures experience anxiety, the tolerance for uncertain situations varies as different cultures cope differently with uncertainty. Cultures with a high degree of uncertainty avoidance try to avoid ambiguity as much as possible; rules and regulations are set in order to structure and secure their lifestyles. The feeling of control is important. Cultures with a low degree of uncertainty avoidance tend to take more risks and tolerate others who operate against the norm. Members of these cultures can be viewed as unconventional and unstructured, as the number of rules for human behavior is minimized (Hofstede, 1991). A student from a culture with a high degree of uncertainty avoidance, such as South Korea, will feel added pressure in a class where the American professor gives very little instruction and guidance on research papers and assignments. This would be different from what the student is used to in the classroom, and since this freedom may not have been experienced previously, it may be difficult to know how to deal with the assignment. Coupled with a high degree of power distance, the student may also be uncomfortable asking the professor for direction (Kok-Soo, 2008).

Masculinity versus femininity is the fourth dimension of Hofstede's theory. Cultures regarded as high masculine cultures tend to value assertiveness and wealth, whereas feminine cultures value caring for others and the quality of life. Achievement is important in masculine cultures, as well as being recognized for one's accomplishments. Cultures found at the feminine

end of the spectrum prefer greater equality between the sexes and role behaviors are less prescriptive. Service to others, sympathy for the less fortunate, and nurturing are valued by both men and women in the feminine cultures. Students from masculine cultures appreciate praise from teachers, especially publicly, and enjoy material reward for their success. Teachers in feminine cultures rarely praise their students, and majors and careers are selected on the basis of interest rather than potential salary and social status. While the US is closer to the masculine end of the spectrum, China is considered an even greater masculine culture and South Korea is closer to the feminine end of the spectrum (Hofstede, 1991). The masculinity-femininity dimension may affect student selection of majors, participation in extracurricular volunteer work, and service learning projects. This participation, or lack thereof, could influence social integration and persistence at the institution.

Hofstede's fifth cultural dimension is time orientation. Time orientation refers to a culture's point of reference regarding life and work. Cultures with a short-term orientation expect immediate results following one's actions; the US is considered a short-term time orientation culture (Hofstede, 1991). Long-term time orientation cultures value persistence, humility, and status differences in relationships. China, South Korea, and India consistently send the most students to the US, and all three are long-term time dimension cultures. Students from long-term time orientation cultures focus on future rewards and have a strong work ethic (Hofstede, 1991). This dimension answers why some international students may not be interested in social involvement on the university campus. They recognize that studying is critical to succeed and graduate, and they may not feel the need to socialize now when they believe they should only be studying to prepare for the future.

Hofstede's cultural patterns theory identifies five differences between cultures that affect one's view of the world. The extent to which the characteristics of each dimension are valued in each culture influences the amount of adjustment a student may face when beginning study in the US. Students from cultures on the opposite end of the dimension from the US may find greater difficulty than students from cultures with similar values. Interestingly enough, China, India, and South Korea are the top three countries sending students to the US (Institute of International Education, 2014b), yet these cultures are also at the opposite end of the spectrum from the US on the majority of dimensions. While it is important to understand these differences when discussing the academic and social engagement of this population, it is also critical to consider the reasons that international students matriculate to the US. The very reason for studying in the US could potentially influence the factors that lead to persistence of this population.

International student goals

For the individual international student, one's goals need to be taken into consideration when investigating persistence; indeed, the student may achieve his or her goals without graduation or even completing a second year at the institution (Bean, 1990b; Seidman, 2005). Persistence for the international student could involve graduating from any institution in the US, graduating from any higher education institution in the world, or meeting his or her academic goals without graduating. It is also possible that an international student is attracted to a US institution for a specific reason; if the institution does not meet the student's expectation, the student may then choose to return home. In order to determine why students remain at an institution, it is critical to take into consideration why they first come.

Push and pull factors. As international students consider higher education study, students are compelled by different factors. These factors have been categorized as "push" and

"pull" factors influencing the college choice of international students (Macready & Tucker, 2011; Mazzarol & Soutar, 2002; McMahon, 1992). The push and pull theory helps to explain why a student leaves the home country to study and why a specific country is chosen over another.

"Push" factors are reasons that lead a student to leave the home country and go to another country for study. Some of these factors include that the student's field of interest is not available in the home country, higher education in the field of interest is too competitive in the home country, and a desire to "get out" of the home country. Students may also feel the "push" from parental wishes and the need to gain experience in another country to prepare for a career (Andrade & Evans, 2009; Chow, 2011; Macready & Tucker, 2011; Mazzarol & Soutar, 2002; McMahon, 1992).

"Pull" factors include the reasons why a specific country is chosen over others. The quality of education and course offerings in one country can "pull" a student to study there. Additional factors, such as visa requirements, financial aid, and the political relationships between countries may also be taken into consideration when choosing a country in which to study (Chow, 2011; Macready & Tucker, 2011; Mazzarol & Soutar, 2002; McMahon, 1992).

Choosing to study in the US. Studies have shown that international students choose to come to the US for a number of reasons (Chow, 2011; Obst & Forster, 2005). Chow (2011) reported on a study conducted by the Institute of International Education in 2009-2010 of prospective international students. Over 9,330 students responded to surveys administered in eleven countries regarding their preferred study destinations, reasons for studying outside of their home countries, perceived obstacles, sources of information regarding overseas study, and their opinion of study in the US compared to other countries. Students surveyed from all regions of

the world reported that the strength of the US education system and the wide range of schools and programs were reasons for studying in the US (Chow, 2011). Ranking reports of institutions and individual academic programs are easily accessible to the public worldwide (Wildavsky, 2010), so students desiring to apply to a university of strong standing and quality can access the statistics and available reports. Education, especially at an elite university, can assist in changing one's position in a society in which social levels are a prominent feature, which may thus influence the decision to study in the US (Wildavsky, 2010).

Prestige. The US education system is considered one of the best in the world (Wildavsky, 2010). In a study by Obst and Forster (2005), international students at 24 institutions in the US were surveyed regarding their study in the US. Eighty-three percent of the respondents claimed that the most important reason for studying in the US was due to the academic reputation that a degree from the US provides. In deciding where to study, the majority of students chose the US as a destination to study first, then selected an institution. Studying in the US was of greater importance than attaining a degree from a specific school for 32% of participants studied by Obst and Forster (2005). Thus, it is possible that if a student does not like one institution, he or she may transfer to a different institution before degree completion if the goal is simply to study in the US. Persistence to graduation at one institution may not be important to the student.

Program availability. As many international students consider the prestige of studying in the US, the availability and quality of specific programs in the US are also considered (Obst & Forster, 2005). Some students study in the US because their intended major is not offered in their home country, or the program is stronger in the US. Obst and Forster (2005) found that 77% of their respondents considered the availability of their field of study to be important. If a

student changes his or her mind on a major, and the host institution does not offer the major, then it is possible that the student will transfer to a different institution. For instance, Evans (2001) conducted interviews with international students who had left without graduating from one small, private, religiously-affiliated institution in the US. One student cited that her choice of major was not offered at the university; she claimed, "my whole purpose for going to the university was gone," when she realized she could not major in her intended field (Andrade & Evans, 2009, p. 58).

The decision to transfer to a different institution or to remain and find a new major is up to the student and the importance placed on the major over institutional commitment. Chow (2011) found that the overwhelming majority (76%) of respondents to a survey considered the US to have a wide variety of programs and majors to cater to students with a variety of interests. In the study by Obst and Forster (2005), students from East and Southeast Asia placed more importance on the prestige of the institution than on the academic programs offered. Thus, it is possible one might remain at a prestigious institution over commitment to a major of interest.

Career preparation. Preparation for future careers is one of the reasons students report for studying in the US (Obst & Forster, 2005). In Obst and Forster's (2005) study, 78% of the participants indicated that a period of study abroad would increase their career opportunities. Attending a college or university in the US improves international students' opportunities for careers abroad, allows students to gain experience, and better prepares the students for future careers in their home countries. Students from Africa, Latin America, and Asia consider US study to improve career opportunities in their home country, while European students find US study helpful in seeking an international career (Obst & Forster, 2005).

One manner of improving career opportunities is through English language proficiency. Study in the US allows non-native English speakers to improve their English language skills, and gaining proficiency in English is a cited reason for study in the US (Chow, 2011; Obst & Forster, 2005).   Some students may seek to learn or improve their language ability, and not choose to seek a degree. Their goals may only be related to gaining English proficiency.

As international students matriculate to US institutions for different reasons, it is important to keep their goals in mind when investigating persistence. Persistence factors may vary between students who choose to study in the US to graduate with a specific major, to graduate from a specific institution, to spend time preparing for a career or to simply increase their English proficiency.

It is clear that international students face cultural differences at US institutions and that the purpose of their study in the US may be achieved before reaching graduation. These factors are likely to impact their persistence, but very little is known about the persistence factors of international students. While some studies have indicated that academic and social engagement may influence international student persistence, the limited number of studies, the narrow scope of many of these studies, and the lack of agreement, no less identification of a common set of persistence variables among existing studies, incited us to investigate this population further. This study explored international student persistence on a larger scale by looking at factors related to academic and social engagement of both international and domestic students at a large, public research institution.

National Survey of Student Engagement

One way of investigating social and academic involvement is through student responses to the National Survey of Student Engagement (NSSE)'s *The College Student Report*, which is

one of the primary data sources to be used in the current study. The survey, often referred to as

NSSE, is a national survey widely used by colleges and universities in the US since 2000 to

identify how first- and fourth-year students spend their time, including the effort put forth

towards academics and participation in educationally purposeful activities (National Survey of

Student Engagement, n.d.). Survey creation began in 1998 when The Pew Charitable Trusts

contacted and funded the National Center for Higher Education Management Systems

(NCHEMS) to develop and test a survey on undergraduate quality. The team of creators

included Alexander Astin, Gary Barnes, Arthur Chickering, Peter Ewell, John Gardner, George

Kuh, Richard Light, and Ted Marchese, with assistance from C. Robert Pace. Currently, NSSE

is a unit within the Center for Postsecondary Research in the Indiana University School of

Education (National Survey of Student Engagement, n.d.). Findings from NSSE are used by

faculty, administrators, and researchers to determine how students spend their time and to

explore ways to improve experiences, both inside and outside of the classroom, through policy

and practice (National Survey of Student Engagement, n.d.). In this section, content of the NSSE

survey, previous use of the NSSE in research, and the validity and reliability of the survey will

be discussed.

NSSE content

The NSSE has approximately 100 items related to academic and social engagement in

addition to requiring demographic information. The non-demographic items on the survey are

divided into two groups: engagement activities and outcomes of the college experience. These

two groups can then be broken down further. Engagement activities are divided into five

benchmarks of effective educational practices which include level of academic challenge, active

and collaborative learning, student-faculty interaction, supportive campus environment, and

enriching educational experiences (National Survey of Student Engagement, n.d.). For example,

under the level of academic challenge benchmark, students are asked, "About how many hours

do you spend in a typical 7-day week preparing for class?" and response options range from "0"

to "more than 30" hours per week, on an eight-point Likert-type scale. Regarding outcomes of

the college experience, researchers have grouped items on the NSSE in a variety of ways,

including but not limited to such areas as satisfaction, self-reported gains, deep learning, and

campus environment. For example, under self-reported gains in practical competence, students

are asked, "To what extent has your experience at this institution contributed to your knowledge,

skills, and personal development in acquiring job or work-related knowledge and skills?"

Response options range from "very much" to "quite a bit" to "some" to "very little" (National

Survey of Student Engagement, n.d.).

Previous use

Since 2000, over 1,500 institutions and four million students have participated in the

NSSE (National Survey of Student Engagement, n.d.). Hundreds of articles and reports have

been published, exploring different variables and populations, including studies regarding NSSE

results and persistence (Chambers, 2009; Hicks & Lehrer, 2003; Hughes & Pace, 2003; Williford

& Schaller, 2005), as well as a few studies on the international student population (Chambers &

Chiang, 2011; Gonyea & Kuh, 2006; Irungu, 2010; Zhao, Kuh, & Carini, 2005).

Hughes and Pace (2003) conducted a study of student persistence and engagement in

certain social and academic activities as included on the NSSE. A random selection of 169 first-

year students at one university completed the NSSE during the Spring 2002 term. The following

Fall term, the researchers used the university database to determine which NSSE participants

persisted to the second year and which ones left the university. The NSSE responses of those

who stayed and those who left were then compared. For the students who withdrew from the university, the level of engagement as self-reported on the NSSE was always lower than for those students who persisted to the second year, though statistical significance was not reported (Hughes & Pace, 2003). Williford and Schaller (2005) conducted a similar study at one large, public institution, and found through mean comparisons that students who stayed at the institution after their first year were more engaged than those who left the institution after the first year. As in Hughes and Pace's (2003) study, only descriptive comparisons were made, so statistical significance was not reported (Williford & Schaller, 2005). Chambers (2009) used regression analysis to compare 362 non-persisters, temporary persisters, and longterm persisters regarding their levels of engagement and persistence from their first year to junior year at a single US institution. Findings, similar to those found by Hughes and Pace (2003) and Williford and Shaller (2005), included that higher levels of engagement during the student's first year increased the likelihood by 14.1% that the student would remain to the junior year (Chambers, 2009).

Among the hundreds of articles and reports published exploring different variables and populations and the use of NSSE, the international student population has not been excluded; however, very few studies have been conducted with this population as the primary focus, and to date, no studies have investigated international student NSSE responses and persistence. Of the studies that focus on international student responses, two studies compared international student responses to those of domestic students (National Survey of Student Engagement, 2002; Zhao et al., 2005), one study investigated engagement behaviors on outcomes of the college experience (Irungu, 2010), and another study compared first- and fourth-year student responses (Edwards, Coates, & Radloff, 2010). Additional studies have not necessarily focused on international

student responses, but have included international student status as a variable in the studies (Chambers & Chiang, 2011; Kuh & Gonyea, 2005).

One study that examined only international student responses to the NSSE was conducted by Irungu (2010). Data from the 2005 NSSE completed by 1,624 fourth-year international students at doctoral research institutions were investigated to determine the extent to which engagement in the five benchmarks of educationally purposeful activities predicted self-assessment of six clusters of educational outcomes, including the acquisition of a broad general education, the acquisition of job or work-related knowledge and skills, the ability to think critically and analytically, the ability to work effectively with others, the ability to learn effectively on their own, and their ability to understand themselves. Correlation and regression procedures revealed that a supportive campus environment and the level of academic challenge were the best predictors of the outcomes, and statistically significant correlations did exist between all five engagement variables and all six outcomes (Irungu, 2010). For example, supportive campus environment and level of academic challenge were significant predictors of an international student's gains in working well with others, in understanding oneself, in job or work-related knowledge and skills, in the ability to think critically and analytically, and in a broad and general education (Irungu, 2010).

While Irungu's (2010) study is helpful in examining how international student engagement activities help to predict desired outcomes of the college experience, two studies added to the research literature by investigating international student engagement in comparison to American student engagement (National Survey of Student Engagement, 2002; Zhao et al., 2005). Zhao et al. (2005) used data from the 2001 NSSE to investigate the extent to which international students were involved in eight measures of engagement compared to domestic

students. Of the 71,260 total student responses from 317 colleges and universities, 2,780 were international students. *T*-tests and ordinary least squares regression were conducted to answer their research questions. National Survey of Student Engagement's (2002) annual report examined data from the 2002 survey through regression analyses, and found similar results to those in Zhao et al.'s (2005) study of the data from the year prior. In both studies, first-year and fourth-year international students had higher levels of academic challenge, supportive campus environment, engagement in diversity-related activities, technology use, and student-faculty interaction than their domestic peers (National Survey of Student Engagement, 2002; Zhao et al., 2005). However, Zhao et al. (2005) investigated these results a bit further using ordinary least squares regression. They found that significant differences in the levels of engagement between international and domestic students were only found among the first-year students in terms of academic challenge levels, technology use, and diversity-related activities. No significant differences existed for fourth-year students. In addition, Zhao et al. (2005) used multilevel modeling and found that as the number of international students at an institution increased, the reported level of a perceived supportive campus environment decreased and the reported involvement in diversity-related activities increased.

First-year international students in both studies had higher levels of self-reported engagement in active and collaborative learning and spent less time relaxing and socializing than domestic students. Fourth-year international students in both studies, however, reported less engagement in active and collaborative learning than their domestic peers, and reported spending a comparable amount of time in social engagement and relaxation as fourth-year domestic students (National Survey of Student Engagement, 2002; Zhao et al., 2005).

Regarding outcomes of the college experience, National Survey of Student Engagement (2002) and Zhao et al. (2005) reported that both first and fourth-year international students experienced greater gains in personal and social competence development and gains in a broad and general education than domestic students. In addition, it was also found that international students indicated greater gains in practical competence than domestic students (NSSE, 2002), and that first-year international students reported greater gains in job or work-related knowledge and skills than domestic students (Zhao et al., 2005).

Another study investigated international student responses to the NSSE by comparing first- and fourth-year responses. Edwards, Coates, and Radloff (2010) conducted a cross-national study on international student engagement with effective educational practices. While the NSSE is used in the US, a comparable Australasian Survey of Student Engagement (AUSSE) is given to investigate student engagement in Australia and New Zealand. This study used descriptive statistics to compare responses to the five benchmarks of effective educational practices by international students in each of the three countries. Research questions included comparisons of international student engagement scores between first-year and fourth-year students within each country. Focusing on international student engagement in the US, the 2008 NSSE yielded responses of 16,226 international students. Findings included that fourth-year international students indicated higher levels of engagement than first-year international students in terms of level of academic challenge, student-faculty interaction, and enriching educational experiences (Edwards et al., 2010). However, first-year international students claimed higher levels of perceived supportive campus environment than fourth-year students (Edwards et al., 2010).

Additional studies have not necessarily focused on international student responses, but have included international student status as a variable in the studies (Chambers & Chiang, 2011; Kuh & Gonyea, 2005). For example, Chambers and Chiang (2011) explored student experiences and the potential factors that influenced student engagement and future success at one large research institution. The open-ended comments from 1,239 freshmen and seniors on the 2006 and 2008 NSSE surveys were examined through content analysis. Findings included that international students did not use many student services on campus, as they claimed to not be aware that such services were available (Chambers & Chiang, 2011). Kuh and Gonyea (2005) sought to discover the relationships between religion, spirituality, and college experiences as indicated by the 2004 NSSE results, including responses from 461 colleges and universities. Research questions included how often one participated in activities to enhance spirituality, how often one had serious conversations with students who are very different in terms of religious beliefs, political opinions, or personal values, and the extent to which the college experience contributed to developing a deepened sense of spirituality. *T*-tests and one-way ANOVA were conducted to determine relationships between select student characteristics and the three items in question. Findings included that first-year international students reported having fewer serious conversations with students who held very different religious beliefs, political opinions, or personal values than that reported by domestic students, and yet international students also reportedly gained more in terms of a deepened sense of spirituality during college than domestic students (Kuh & Gonyea, 2005).

The NSSE survey allows us to explore a large number of student responses regarding many areas of student engagement on college campuses. Previous studies of domestic students have indicated that students who persist tend to be more engaged in academic and social

activities, according to their NSSE responses. While some studies have investigated

international student responses to the NSSE, no studies currently exist that examine international

student engagement based on NSSE responses and persistence.

Validity and reliability of the NSSE

The National Survey of Student Engagement (NSSE) is a widely accepted resource for

accessing student engagement data in the United States. The creators and administrators of the

National Survey of Student Engagement have, since its creation, continuously conducted

psychometric analyses to ensure the validity and reliability of the instrument (National Survey of

Student Engagement, n.d.). Technical reports claiming that the survey has validity (response

process, content, construct, concurrent, predictive, known groups, and consequential) and

reliability (internal consistency, temporal stability, and equivalence) can be found at

http://nsse.iub.edu/html/psychometric_portfolio.cfm.

Recently, however, the validity and reliability of the instrument have been challenged

(Campbell & Cabrera, 2011; Dowd, Sawatzky, & Korn; 2011; Olivas, 2011; Porter, 2009).

NSSE researchers and directors have responded, citing misunderstandings of the intended

purposes of NSSE. This section will discuss the current criticisms of NSSE as well as the

response to the criticism by NSSE directors, as this is important to keep in mind when using the

NSSE instrument in research.

The NSSE survey has been criticized for lacking reliability and different types of validity,

including construct, content, and predictive validity. A survey is considered valid if the scores

on a measure of a survey relate to scores on other measures (Cone & Foster, 2006), and

according to the arguments of Campbell and Cabrera (2011), Porter (2009), and Gordon,

Ludlum, and Hoey (2008), this does not hold true for NSSE. The five effective educational

practice benchmarks of NSSE include level of academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences (National Survey of Student Engagement, n.d.). Each benchmark is comprised of a group of individual items on the survey and much of the criticism relates to these benchmarks. Critics of the NSSE claim that these five benchmarks lack construct validity, suggesting that they are highly intercorrelated and they do not measure distinct domains of student engagement (Campbell & Cabrera, 2011; Porter, 2009). Considerable overlap between benchmarks has been found through confirmatory factor analysis conducted by the critics; thus it is uncertain how each construct identifies a specific area of student engagement. For an instrument to be valid, each benchmark should measure distinct areas and this does not occur in the NSSE according to Campbell and Cabrera (2011).

Porter (2009) noted that terms related to the NSSE such as engagement, outcomes, and institutional quality are difficult to define. Thus, he argued, there was no rationale for the inclusion of specific items on the NSSE, or why the items comprised a particular benchmark. As a result, it is difficult to contradict the content validity of the NSSE, since item selection and category definitions are "key issues" when determining content validity (Cone & Foster, 2006, p.168). As NSSE has not justified the reasoning behind including items and definitions are difficult to determine, it is not certain if all items represent a benchmark accurately or if additional items should be included (Porter, 2009).

In addition, the five benchmarks are said to lack predictive validity. The NSSE instrument, in addition to benchmarks, includes items related to desired student outcomes as a result of college experiences. In studies by Campbell and Cabrera (2011) and Gordon et al. (2008), the engagement benchmarks did not predict grade point average, which is one of the

outcome items on the survey. Campbell and Cabrera (2011) claimed that in order for the benchmarks to be valid, the benchmarks should be predictive of outcomes.

It has also been argued that self-reported data, especially by college students, is not valid. The reasoning of critics suggests that students do not understand the terminology of surveys, causing dissonance between the actual question and what they perceive they are being asked. Additionally, they do not respond honestly, and even if they consider their response as correct, in reality, they do not always recall engagement in activities accurately (Porter, 2009). Each student may interpret the questions differently; the term "critical thinking" to one student may be different to another. In addition, response options such as "very much" and "quite a bit" may also elicit different interpretations. As a result, college student responses cannot be trusted to accurately describe their behaviors, as interpretations vary and students cannot recall activities accurately. Porter (2009) argued that different means of collecting data would allow for greater accuracy, such as the use of time-use diaries.

In order for a score to be valid, it must be reliable (Cone & Foster, 2006). Using Cronbach's alpha, Porter (2009) contended that the NSSE benchmarks are unreliable; that internal consistency is lacking. An instrument has internal consistency if the items within the cluster correlate well together (National Survey of Student Engagement, n.d.). The minimum alpha typically accepted by researchers is 0.70. Forty percent of the NSSE benchmarks did not reach 0.70 in Porter's (2009) study. Campbell and Cabrera (2011) also found the alpha reliabilities for the benchmarks to be below 0.70 or barely above this threshold.

In response to the argument that the NSSE lacked validity and reliability, Ewell, McClenney, and McCormick (2011) cited the views of Samuel Messick of the Educational Testing Service (ETS), arguing that the concept of validity in educational measurement

depended on the purposes of the data. Consequential validity is used in applied settings, such as

NSSE, where validity involves the usefulness of the data in assessing behaviors and informing

action (Ewell et al., 2011). In addition, McCormick and McClenney (2012) iterated that the

benchmarks are conceptually based, not latent constructs, and acknowledged that many of the

items, especially among the enriching educational experiences benchmark, are not correlated and

should not be expected to be. They argued that the NSSE survey provides an overview of

student engagement and is designed to encourage conversation on campuses. The audience

includes higher education administrators from a variety of academic backgrounds, not just the

social sciences. As a result, conceptually-based benchmarks serve the purpose for what the

NSSE seeks to communicate (McCormick & McClenney, 2012). Furthermore, NSSE

researchers argued that they had conducted studies to investigate the concerns about self-

reporting and college students' ability to understand survey questions and truthfully respond.

They reported that validity studies have been conducted using focus groups and interviews to

determine the correct wording of questions and to determine if different groups of students

interpreted questions differently. As a result of these studies, they argued that students do

understand what is being asked of them and can respond appropriately (Ewell et al., 2011;

Jaschik, 2009; McCormick & McClenney, 2012).

　　　　While the validity and reliability of the NSSE has been challenged, it is nevertheless a

dataset that allowed us to look at factors related to student engagement, which is believed to

influence persistence, and this was useful for this study. In addition, in the current study,

individual items on the NSSE were examined, as opposed to grouping items in the pre-

determined, critiqued benchmarks of engagement and clusters of outcomes.

Conclusion

The use of NSSE responses in the current study allowed us to explore the social and academic engagement of a large number of international students and if integration influences their persistence or lack of persistence. We know that social and academic integration have been found to influence domestic student persistence in a variety of settings and within various subpopulations, and we know that international students must adjust to new social and academic cultures at US institutions. While some studies have indicated that academic and social engagement may influence international student persistence, the limited number of studies, the narrow scope of many of these studies, and the lack of agreement, no less identification of a common set of persistence variables among existing studies, incited us to investigate this population further. Thus, this study aimed to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US.

CHAPTER THREE
Method and Procedures

The purpose of this study was to gain a better understanding of undergraduate

international student persistence at one large, four-year public research institution in the US.

Two research questions guided this study:

1. Are there differences in terms of social and academic engagement, GPA, and credit
   hours earned between first-year international and domestic persisters and non-
   persisters at a large, four-year public research institution in the US?

2. How do social and academic engagement, GPA, and credit hours earned relate to
   persistence among first-year international and domestic students at a large, four-year
   public research institution in the US?

This chapter details the methods and procedures used in the conduct of the study including the

research design, site and population, sources of data, procedures used to collect and analyze the

data, and limitations and delimitations of the study.

Research Design

This quantitative study answered the research questions through the secondary analysis of

two datasets. One dataset includes student responses to the National Survey of Student

Engagement (NSSE). The second dataset includes institutional data about students who

completed the NSSE.

Site

This study used data from one large, four-year public research-extensive institution in the

southeast region of the US. The choice of this kind of institution was prompted by the limitation

of many existing studies on international student persistence which have been conducted at

small, private institutions, using interviews with the small number of international students

enrolled. Using a large, public research institution as the site for the study allowed for soliciting

a large number of potential students, both domestic and international, and such institutions

(large; public; research) each host over half of all international students studying in the US (Farrugia, Bhandari, & Chow, 2012).

The institution chosen for the study is public, and boasts over 1,000 international graduate and undergraduate students, thus allowing access to a large number of students and securing a perspective that may be different from that provided in existing studies. Further, the institution regularly collects data about its student population, including international students and their responses to the NSSE. In addition, this institution was selected given that the Office of Institutional Research and Assessment at the university was willing to collect and match existing data from two datasets in order for the study to be carried out.

Approximately 24,000 - 27,000 students were enrolled at the institution each year between 2001-2011, of which 20,000 or so were undergraduate students and 5,000-8,000 were graduate students each year. Of the 20,000 or so undergraduates, 800-1,200 were international students, including 200-350 undergraduate international students (Office of Institutional Research & Assessment, n.d.). The institution offers over 170 undergraduate majors, concentrations, and specializations in areas such as engineering, physics, and music. Among its various programs and services, the university offers a Center for International Education which is comprised of five units: International Student & Scholar Services, Programs Abroad, an English Language Institute, Confucius Institute, and an International House.

<div align="center">**Sample**</div>

All first-year international students who completed the NSSE from 2001-2011 and a matched, random sample of first-year domestic students who completed the NSSE from 2001-2011 constituted the sample for this study. The domestic student sample was matched to the international student sample in terms of persisters and non-persisters.

Sources of Data

Two existing datasets were used in the study: NSSE results and institutional data.

NSSE results

The *College Student Report* is NSSE's student survey. It is used to assess the extent to which college students are engaged in educationally purposeful activities and what they have gained from their higher education experiences (National Survey of Student Engagement, n.d.). The survey is comprised of approximately 100 items related to academic and social engagement activities, outcomes of their experiences, and demographic information. The data used for this study included responses to 39 of the 100 items on the survey. These 39 items focus on academic and social engagement activities of the students and a few demographic items. An overview of the items included in this study will be discussed in this section. The full list of questions from the NSSE used in this study can be found in the Appendix.

The majority of engagement questions on the survey ask the student to respond in terms of a four-point Likert-type scale. For example, students are asked, "In your experience at your institution during the current school year, about how often have you discussed ideas from your readings or classes with faculty members outside of class?" Response options range from "very often" to "often" to "sometimes" to "never."

The current study analyzed responses to 16 of the social and academic engagement questions that use this format, from faculty interaction as noted in the question above, to student interaction questions, such as, "In your experience at your institution during the current school year, about how often have you worked with classmates outside of class to prepare class assignments?"

Four questions used from the NSSE data involve how many hours per week the student spent preparing for class, working on campus, participating in co-curricular activities, and relaxing and socializing. Response options to these four questions range from "0" to "more than 30" hours per week, on an eight-point Likert-type scale.

Two questions included in the present study ask, "To what extent does your institution emphasize providing the support you need to a) help you succeed academically and b) thrive socially?" Response options range from "very much" to "quite a bit" to "some" to "very little."

Three questions used in this study involve the perceived quality of relationships with students, faculty, and administrative personnel, and one question asks about the quality of academic advising received.

Four questions which refer to the extent to which the experience at the institution contributed to one's knowledge, skills, and personal development in acquiring job or work-related skills, writing clearly and effectively, speaking clearly and effectively, and working effectively with others were used in addition to two questions regarding membership in a social fraternity or sorority and membership on an athletic team. Two questions included involve student satisfaction. Students were asked about the entire educational experience and if the student would attend the same institution again if he or she had the choice again.

The five demographic questions on the NSSE that were included in this study include birth year, sex, international student status, transfer status, and selected or intended major(s).

Institutional data

Another source of data was institutional data on the students who completed the NSSE. This data included persistence to the second year of study, number of credit hours completed at the end of Spring term during the first year and GPA.

Procedures

Permission to conduct the study was sought through the institution to be used for the conduct of the study and the University of Tennessee's Institutional Review Board (IRB). Upon IRB approval, the investigator contacted the Office of Institutional Research and Assessment (OIRA) of the institution, and staff members in the OIRA compiled the data to be used in the study. International student responses to the NSSE were gathered and connected with their institutional data. A matched random sample, based on persisters and non-persisters, of domestic student data were identified, and NSSE responses and institutional data were compiled for this group. The investigator did not have access to identifying information of the students in the study.

Data Analysis

First, all variables were analyzed descriptively using the statistical software SPSS 22 in order to identify characteristics of the population and to screen for outliers and missing data. After the data were cleaned and considered appropriate for analysis, they were disaggregated into four groups: international persisters, international non-persisters, domestic persisters, and domestic non-persisters, resulting in 71 international persisters, 8 international non-persisters, 71 domestic persisters, and 8 domestic non-persisters.

Due to the small sample size in the two non-persister groups, descriptive statistics and nonparametric statistical tests were conducted to answer the research questions. According to Salkind (2007), a group size of at least 30 is needed to fulfill the assumption of appropriate sample size for parametric statistics. Thus, to answer the first research question, Kruskal-Wallis *H*-tests were conducted to determine if any significant differences existed in terms of the NSSE responses, GPA, and credit hours earned among the four groups (Corder & Foreman, 2009).

Mann-Whitney *U*-tests were then conducted between each group to determine where the significant differences occurred between the groups.

To answer the second research question, point-biserial correlation was conducted to determine how the NSSE responses, GPA, and credit hours earned related to the persistence or non-persistence of international and domestic students. The point-biserial correlation analysis was used because it is the appropriate nonparametric test to compare two variables when one variable is a discrete dichotomous variable; the persistence variable is discrete dichotomous in this study (Corder & Foreman, 2009). In addition, descriptive statistics of the NSSE items were examined in order to gain a better understanding of the relationships between the responses and persistence or non-persistence.

Limitations and Delimitations

As with all research, this study had limitations and delimitations. The first delimitation was the sample. All students in this study were from the same large, public university, which prevents the study from being generalizable to students at different types of institutions. In addition, a limitation that arose during the study was the extremely small number of non-persisters in the sample. Due to the small number, we are given an idea of the nature of non-persisters at the institution in this study, but it is difficult to assume that this sample is representative of the entire population of non-persisters.

The second delimitation was that only NSSE responses and data from first-year students were examined. The findings may not be generalizable to students in their second, third, or fourth year of study, when engagement and persistence factors could differ.

A limitation of the study involves its quantitative nature. Quantitative studies lack depth in terms of responses and their meaning, and a mixed-method or qualitative study might yield

different, deeper findings and reasons for persistence. In addition, most of the data in this study came from survey responses. Surveys provide limited, predetermined responses to the questions asked. Surveys do not allow for the respondents to convey exactly what they intend.

In addition, the students in this study are reporting on their own behaviors. Self-reported surveys have inherent limitations, as students may not accurately report their actual behaviors. For example, it is possible that international and domestic students may be engaged the same number of hours per week in certain activities, but students in each group may perceive and report their levels of engagement differently. All students may not perceive "very often" in the same way, which would influence the findings of the study.

Related to self-reporting, students voluntarily completed the NSSE survey; it is possible that only those students who were engaged, satisfied, or planned to persist took the time to complete the survey when asked by their institution. According to the Director of the Office of Research and Assessment at the University of Tennessee, Knoxville, "often the responders to a survey such as NSSE are the students more likely to be engaged with their academic experience and therefore retained at higher numbers" (D. Gardner, personal communication, December 19, 2013). If all first-year international students had responded to the NSSE, it is possible that the findings might have been different.

CHAPTER FOUR
Findings

The purpose of this study was to gain a better understanding of undergraduate

international student persistence at one large, four-year public research institution in the US.

Two research questions guided this study:

1. Are there differences in terms of social and academic engagement, GPA, and credit hours earned between first-year international and domestic persisters and non-persisters at a large, four-year public research institution in the US?

2. How do social and academic engagement, GPA, and credit hours earned relate to persistence among first-year international and domestic students at a large, four-year public research institution in the US?

Secondary analysis of two datasets was conducted to answer the research questions through

descriptive and nonparametric statistics. First-year international student responses to the NSSE

from 2001-2011, as well as GPA and credit hours earned, were compared to a matching set of

domestic student responses based on persistence and non-persistence to the second year of study.

This chapter presents the study's findings. In the first section, the means by which the

data were prepared for analysis is discussed. Next, a description of the participants is presented.

Third, statistical analysis including Kruskal-Wallis *H*-tests and Mann-Whitney *U*-tests are

discussed to answer the first research question. Finally, point-biserial correlations and

descriptive statistics are examined to answer the second research question.

Data Preparation

In order to ensure that the institutional and NSSE data were appropriate for analysis,

descriptive statistics were conducted. Specifically, the data were analyzed for missing data and

outliers, and variables were coded appropriately.

From 2001-2011, 81 students who identified as "international" and "first year" completed

the NSSE survey. Two cases were removed from the group of 81 due to missing data and

outliers. There were no international student responses to the NSSE in 2002, so domestic student responses in 2002 were not used in this study. In addition, the variable of "student-athlete" was removed due to missing data in over 15% of the responses. Since so many responses were missing, the missing data could influence the generalizablity of the results (Mertler & Vannatta, 2005). It should also be noted that none of the non-persisters self-identified as student-athletes. Due to the high percentage of missing data and the fact that non-persisters were not student-athletes, the variable was removed.

In order to facilitate data analysis, three NSSE items were re-coded. In 2001, the NSSE survey asked students to select their major from a list of options. From 2003-2011, students were instructed to handwrite in their major. In order to gain a better idea of student majors in the current study, the majors starting in 2003 were coded into appropriate categories based on the NSSE 2001 codebook, then grouped into five major categories: Arts & Sciences, Business & Communication, Education, Engineering & Computer Science, and Undecided & Other. In addition, to facilitate data analysis between the four groups of international and domestic persisters and non-persisters, an additional variable was created, entitled "Groups." This new variable combined the "international student" variable and the "enrolled in the following Fall" variable, so that one variable identified the four separate groups of students.

Description of the Participants

After the data were cleaned for missing data and outliers, 79 international student responses were analyzed. Of this group, 71 persisted to a second year of study at the institution, while 8 students did not enroll the following Fall term. A random sample of 71 domestic first-year persisters and 8 domestic first-year non-persisters were selected as a comparison group.

Of the total 158 respondents, 55 (34.8%) were male and 103 (65.2%) were female. While almost twice as many female responses are included in this study, the number of male and female international non-persisters was equal (*n*=4). One hundred fifty-four students (97.5%) started their studies at the same institution they were attending at the time of the survey, while four students (2.5%) transferred from another institution. All of the non-persisters, both domestic and international, started at the same institution and were not transfer students. Seventy-two (45.6%) students were majoring in Arts & Sciences fields at the time of the survey, while 47 (29.7%) were in Business & Communications majors. Six of the eight domestic non-persisters were majoring in Arts & Sciences majors, while four of the international non-persisters were majoring in Arts & Sciences. Table 1 displays student characteristics within each of the four groups: international persisters, international non-persisters, domestic persisters, and domestic non-persisters.

Differences between Groups

To answer the first research question, Kruskal-Wallis *H*-tests were conducted to determine if any significant differences existed in terms of the NSSE responses, GPA, and credit hours earned among the four groups of international and domestic persisters and non-persisters. Kruskal-Wallis *H* is the appropriate nonparametric test to explore the differences between the four groups, as it can be used when there are two or more categorical, independent groups and the variables are ordinal or continuous (Corder & Foreman, 2009; Sprent & Smeeton, 2001). The independent variable was the type of group and the dependent variables included 32 ordinal NSSE items, GPA, and credit hours earned.

Table 1

Student Characteristics as a Percentage of the Total Sample

Characteristic	International Persisters ($n = 71$)		International Non-Persisters ($n = 8$)		Domestic Persisters ($n = 71$)		Domestic Non-Persisters ($n = 8$)	
	n	%	n	%	n	%	n	%
Sex								
Male	26	16.5	4	2.5	23	14.6	2	1.3
Female	45	28.5	4	2.5	48	30.4	6	3.8
Transfer status								
New student	68	43.0	8	5.1	70	44.3	8	5.1
Transfer student	3	1.9	0	0.0	1	0.6	0	0.0
Major								
Arts & Sciences	25	15.8	4	2.5	37	23.4	6	3.8
Business & Communication	24	15.2	2	1.3	20	12.7	0	0.0
Education	1	0.6	0	0.0	6	3.8	0	0.0
Engineering & Computer Sci.	12	7.6	1	0.6	5	3.2	2	1.3
Undecided & Other	7	4.4	1	0.6	3	1.9	0	0.0
NSSE response year								
2001	3	1.9	0	0.0	5	3.2	2	1.3
2003	5	3.2	2	1.3	5	3.2	2	1.3
2004	6	3.8	2	1.3	7	4.4	1	0.6
2005	3	1.9	0	0.0	6	3.8	1	0.6
2006	4	2.5	1	0.6	8	5.1	0	0.0
2007	4	2.5	0	0.0	12	7.6	0	0.0
2008	7	4.4	1	0.6	9	5.7	0	0.0
2009	10	6.3	0	0.0	8	5.1	0	0.0
2010	19	12.0	1	0.6	4	2.5	2	1.3
2011	10	6.3	1	0.6	7	4.4	0	0.0

Note. N = 158.

Findings indicated that significant differences existed between at least two of the four groups on four NSSE items, GPA, and credit hours earned. Four groups were compared: international persisters (*n*=71), international non-persisters (*n*=8), domestic persisters (*n*=71), and domestic non-persisters (*n*=8). Among the NSSE items, the Kruskal-Wallis *H*-test was significant for hours spent "preparing for class" (*H*=8.74, *p*=.033), participated in a "community-based project (e.g., service learning) as part of a regular course" (*H*=8.82, *p*=.032), "worked with

faculty members on activities other than coursework" (H=12.32, p=.006), and "if you could start over again, would you go to the same institution you are now attending" (H=10.44, p=.015). The Kruskal-Wallis H-test was also significant for GPA (H=28.07, p<0.001) and credit hours earned (H=23.15, p<0.001). The H-tests were found to be significant on four NSSE items, GPA, and credit hours earned, indicating that at least two groups had differences on each variable.

Given that the Kruskal-Wallis H-test does not indicate between which of the four groups the differences occur, Mann-Whitney U-tests were conducted to identify which international and domestic persister and non-persister groups yielded significantly different responses on the four NSSE items, GPA, and credit hours earned. As conducting multiple Mann-Whitney U-tests on one variable can inflate the Type I error rate leading to the assumption that a difference exists between groups when one does not (Corder & Foreman, 2009), the level of risk was adjusted to $\alpha = 0.0125$.

Differences between persisters and non-persisters

Between international persisters and non-persisters, significant differences were found on both GPA and credit hours earned, indicating that international persisters had higher GPAs and earned more credit hours by the end of the first year of study than international non-persisters, as shown in Table 2. Similar results were found between domestic persisters and non-persisters. Domestic persisters had higher GPAs and earned more credit hours than domestic non-persisters. Findings also indicate that international persisters had a significantly higher GPA and more credit hours earned than domestic non-persisters. The only statistically significant finding between domestic persisters and international non-persisters was for credit hours earned; domestic persisters earned more credit hours by the end of their first year than international non-

Table 2

Differences in GPA and Credit Hours Earned between International and Domestic Persisters and Non-Persisters

Variable and Group	U	p	Mean Ranks		Medians	
			Group A	Group B	Group A	Group B
GPA						
A B						
IP v INP*	113.5	.006	42.4	18.69	3.45	2.59
DP v DNP*	28.5	<.001	43.6	8.06	3.31	2.08
DP v IP	2009.5	.037	64.3	78.70	3.31	3.45
DNP v INP	23.5	.382	7.44	9.56	2.08	2.59
DP v INP	152.5	.033	41.85	23.56	3.31	2.59
IP v DNP*	18.0	<.001	43.75	6.75	3.45	2.08
Credit hours earned						
A B						
IP v INP*	85.5	.001	42.8	15.19	30.00	16.00
DP v DNP*	104.0	.003	42.54	17.50	29.00	16.00
DP v IP	2029.5	.044	64.58	78.42	29.00	30.00
DNP v INP	29.5	.798	8.81	8.19	16.00	16.00
DP v INP*	100.5	.003	42.58	17.06	29.00	16.00
IP v DNP*	79.5	.001	42.88	14.44	30.00	16.00

Note. IP = International Persisters (*n*=71); INP = International Non-Persisters (*n*=8); DP = Domestic Persisters (*n*=71); DNP = Domestic Non-Persisters (*n*=8).
*= significant at *p*<.0125.

persisters. However, no significant difference was found between the GPA of domestic

persisters and international non-persisters at the adjusted *p*<.0125 level. In addition, there were

no significant differences found on GPA and credit hours earned between the two persister

groups and between the two non-persister groups.

Differences between international and domestic students

Between international persisters and domestic persisters, findings indicated that

significant differences existed on all four of the NSSE items as identified by the Kruskal-Wallis

H-test. As shown in Table 3, international persisters spent more hours preparing for class,

Table 3

Significant Differences in NSSE Items between International and Domestic Persisters

NSSE Item	U	p	Mean Ranks		Medians	
			IP	DP	IP	DP
Class prep*	1835.5	.004	81.15	61.85	5.00	4.00
Community project*	1891.5	.006	79.48	62.64	2.00	1.00
Faculty other than*	1680.0	<.001	80.79	59.66	2.00	1.00
Attend again*	1955.0	.011	63.54	79.46	3.00	4.00

Note. IP = International Persisters (*n*=71); DP = Domestic Persisters (*n*=71).
 *= significant at *p*<.0125.

participating in community-based projects, and working with faculty members on activities other than coursework than domestic persisters. However, results indicated that if domestic persisters could start over again, they are more likely to attend the same institution that they are currently attending than international persisters. Between the two non-persister groups, no significant differences were found on any of the variables.

Summary of differences

The results of the Kruskal-Wallis *H*-tests and the Mann-Whitney *U*-tests indicated that there were a few differences in terms of social and academic engagement, GPA, and credit hours earned between international and domestic persisters and non-persisters at a large, four-year public research institution in the US. International persisters had higher GPAs and earned more credit hours by the end of the first year of study than international non-persisters, and domestic persisters had higher GPAs and earned more credit hours than domestic non-persisters. International persisters spent more hours preparing for class, participating in community-based projects, and working with faculty members on activities other than coursework than domestic persisters, while domestic persisters indicated that if they could start over again, they are more likely to attend the same institution that they are currently attending than international persisters.

No significant differences were found, however, on any variable between the two non-persister groups.

<div align="center">**Relationships to Persistence**</div>

To answer the second research question, point-biserial correlations and descriptive statistics were used to determine how NSSE items, GPA and credit hours earned related to the persistence or non-persistence of international and domestic students (Corder & Foreman, 2009). In addition, descriptive statistics of 32 of the NSSE items were examined in order to gain a better understanding of the relationships between the responses and persistence or non-persistence.

Point-biserial correlations

Two separate point-biserial correlations were conducted: one on international students and one on domestic students. The point-biserial correlation analysis was used because it is the appropriate nonparametric test to compare two variables when one variable is a discrete dichotomous variable. Persistence is the discrete dichotomous variable in this study (Corder & Forman, 2009). Significant correlations were found between international persisters and non-persisters with regard to GPA and credit hours earned. Significant correlations were also found between domestic persisters and non-persisters on GPA and credit hours earned. For both international and domestic students, higher GPA and more credit hours earned related positively to persistence.

Between international persisters (n=71) and non-persisters (n=8), the data suggest that there is a moderate to strong relationship (r=.464, p<.001) between GPA and persistence. The mean GPA scores indicate that international persisters (M=3.36, SD=0.58) had a higher GPA than international non-persisters (M=2.19, SD=1.33). A moderate relationship (r=.316, p=.005) was found between credit hours earned and persistence. International persisters had completed

more credit hours (*M*=31.15, *SD*=8.82) by the end of their first year than international non-persisters (*M*=20.00, *SD*=19.41). There were no statistically significant findings between the NSSE items and persistence for international students.

Between domestic persisters (*n*=71) and non-persisters (*n*=8), significant correlations were found between GPA, credit hours earned, and four NSSE items. Strong relationships were found for GPA (*r*=.578, *p*<.001) and credit hours earned (*r*=.523, *p*<.001). Domestic persisters had a higher GPA (*M*=3.17, *SD*=.58) than domestic non-persisters (*M*=1.76, *SD*=.81) and domestic persisters had earned more credit hours (*M*=28.56, *SD*=5.10) than non-persisters (*M*=16.63, *SD*=11.33) by the end of their first year of study. Significant but very weak relationships were found between persistence and four NSSE items. Three of the four items indicated that greater engagement correlated with non-persistence. For the variable "made a class presentation," a very weak relationship was found (*r*=.235, *p*=.037), with domestic non-persisters indicating that they gave more class presentations (*M*=2.63, *SD*=1.19) than persisters (*M*=2.06, *SD*=0.65). Another weak relationship (*r*=.239, *p*=.034) indicated that non-persisters (*M*=2.25, *SD*=0.89) "discussed ideas from [their] readings or classes with faculty members outside of class" more than persisters (*M*=1.68, *SD*=0.69). Non-persisters (*M*=3.38, *SD*=0.52) also perceived that the institution contributed more to the development of "acquiring job or work-related knowledge and skills" than persisters (*M*=2.59, *SD*=1.01), though it is a weak relationship (*r*=.239, *p*=.034). In contrast, persisters (*M*=3.46, *SD*=0.69) indicated that they were more likely to attend the same institution if they could start over again than non-persisters (*M*=2.87, *SD*=0.64), though this is also a very weak relationship (*r*=.253, *p*=.024).

In sum, there was a moderate to strong relationship for both GPA and credit hours earned to persistence for both international and domestic students. No significant correlations existed

for international students on the NSSE items and persistence. For domestic students, giving a

presentation, discussing readings or class with faculty outside of class, and the perception that

the institution contributed to job-related skills each displayed a very weak relationship to non-

persistence, while the intention to attend the same institution again, if possible, weakly correlated

to persistence.

 Frequencies of the NSSE items

In order to gain a better understanding of the relationships between the NSSE responses

and persistence or non-persistence, frequencies of the NSSE items were examined among the

four groups of international persisters, international non-persisters, domestic persisters, and

domestic non-persisters. Survey questions asked about the frequency of participation in certain

activities. Some response options included "very often," "often," sometimes," and "never,"

while other response options allowed students to indicate a range of hours spent per week on the

activity. Additional questions included rating the quality of relationships on a seven-point likert

scale, and satisfaction questions included response options on a four-point likert scale, from

"poor" to "excellent." Responses to the questions are examined in this section based on the

percentage of students in each group who indicated high levels of participation and positive

responses to satisfaction and quality of relationships. For example, comparisons between groups

are based on participation levels of "very often" or "often" and quality of relationships that are

identified closer to the "friendly" or "helpful" end of the likert scale, as opposed to the

"unfriendly" or "unhelpful" end of the scale. Responses are discussed in this section and

descriptive statistics are displayed in Table 4.

Table 4

Percentages and Differences in NSSE Responses between International Persisters, International Non-Persisters, Domestic Persisters, and Domestic Non-Persisters

NSSE Item	International Persisters (*n=71*)	International Non-Persisters (*n=8*)	Domestic Persisters (*n=71*)	Domestic Non-Persisters (*n=8*)
Frequency of participation: "very often" and "often"				
Asked questions in class/contributed to discussions	49.3	37.5	59.2	50.0
Made a class presentation	35.3	25.0	18.3	37.5
Worked with other students during class	45.1	37.5	46.5	62.5
Worked with other students outside class	50.7	37.5	37.1	50.0
Tutored or taught other students	24.0	25.0	5.6	12.5
Participated in a community-based project	24.0	12.5	14.1	37.5
Used electronic medium to complete an assignment	50.7	50.0	47.9	25.0
Emailed with instructor	78.9	62.5	77.4	75.0
Discussed grades/assignments with instructor	46.5	25.0	47.9	50.0
Discussed career plans with faculty member/advisor	29.6	37.5	33.8	62.5
Discussed readings/class with faculty outside class	22.5	25.0	9.9	25.0
Worked harder than thought you could	53.5	37.5	49.3	50.0
Worked with faculty on activities other than coursework	19.7	25.0	5.6	12.5
Discussed readings/class with others outside class	56.4	25.0	56.4	37.5
Had serious conversations with students of different values	47.9	62.5	52.1	50.0
Had serious conversations with students of different race	57.7	62.5	40.8	62.5
Quality of relationships with: 1-7 Likert scale				
Other students (5-7 friendly, supportive)	76.1	62.5	84.5	87.5
Faculty members (5-7 available, helpful)	83.1	37.5	60.6	62.5
Admin personnel and offices (5-7, helpful, considerate)	64.9	50.0	49.3	62.5

Note. N=158. Percentage displayed is of total responses in each group.

Table 4 (continued)

NSSE Item	International Persisters (*n*=71)	International Non-Persisters (*n*=8)	Domestic Persisters (*n*=71)	Domestic Non-Persisters (*n*=8)
Hours/week spent:				
Preparing for class (over 15 hrs/week)	50.7	62.5	32.4	37.5
Working for pay on campus (yes)	19.7	12.5	12.7	12.5
Participating in co-curricular activities (yes)	66.2	37.5	70.4	37.5
Relaxing and socializing (over 15 hours/week)	15.5	12.5	31.0	37.5
Institutional emphasis "very much" and "quite a bit" on:				
Providing academic support	77.5	75.0	70.5	75.0
Providing social support	46.5	50.0	42.3	50.0
Institutional contribution to development "very much" and "quite a bit" in:				
Writing clearly and effectively	67.6	50.0	61.9	50.0
Speaking clearly and effectively	66.2	62.5	49.3	50.0
Working effectively with others	70.5	62.5	66.2	75.0
Job-related knowledge and skills	53.5	50.0	52.1	100.0
Satisfaction:				
Quality of academic advising (excellent, good)	78.9	75.0	69.1	100.0
Entire educational experience (excellent, good)	90.2	75.0	88.7	75.0
If start over, attend same institution again (definitely yes, probably yes)	84.5	100.0	91.5	75.0

Note. N=158. Percentage displayed is of total responses in each group.

International student persistence. The responses to 32 NSSE items were examined to explore engagement and persistence of international students. A higher percentage of international persisters indicated that they spent more time participating in certain activities and had better quality relationships than the international non-persisters on the majority of items.

In response to questions involving social interaction related to coursework, a greater percentage of international persisters reported participating "very often" or "often" than international non-persisters. These activities included "contributed to class discussions," "made a class presentation," "worked with other students on projects during class," "worked with classmates outside of class to prepare class assignments," "participated in a community-based project (e.g., service learning) as part of a regular course," and "discussed ideas from your readings or classes with others outside of class." For example, regarding "worked with classmates outside of class to prepare class assignments," 50.7% of international persisters indicated that this occurred "very often" or "often," in comparison to 37.5% of international non-persisters. Regarding tutoring, however, approximately the same percent of international persisters and non-persisters indicated that they "tutored or taught other students (paid or voluntary)."

Regarding the quality of relationships with other students, faculty members, and administrative personnel and offices, a larger percentage of international persisters responded that their relationships with others were a "5," "6," or "7" on the seven-point scale for all three groups than the international non-persisters. This indicates that a greater percentage of international persisters considered other students, faculty, and administrative personnel to be more friendly or helpful than these three groups were perceived by international non-persisters. Regarding faculty relationships specifically, 83.1% of international persisters indicated a "5,"

"6," or "7," while only 37.5% of international non-persisters indicated a "5," "6," or "7" on the scale.

One section of the NSSE asked students about the extent to which their "experience at this institution contributed to [their] knowledge, skills, and personal development" in "writing clearly and effectively," "speaking clearly and effectively," "working effectively with others," and "acquiring job or work-related knowledge and skills." On a four-point Likert scale, a larger percentage of international persisters indicated that the institution contributed "very much" or "quite a bit" to all four of these areas than was perceived by international non-persisters.

When asked how often they "worked harder than [they] thought they could to meet an instructor's standards or expectations," a larger percentage of persisters indicated "very often" or "often." However, a greater percentage of international non-persisters spent over 15 hours per week preparing for class than international persisters.

In terms of social engagement, a larger percentage of international persisters participated in "co-curricular activities" and "working for pay on campus" in a typical week than international non-persisters. Regarding participation in co-curricular activities, 66.2% of international persisters indicated they participated in co-curricular activities, while only 37.5% of international non-persisters indicated any participation. However, a greater percentage of international non-persisters indicated that they had "very often" or "often" "had serious conversations with students of a different race or ethnicity than [their] own," and had "had serious conversations with students who are very different from [them] in terms of their religious beliefs, political opinions, or personal values" than international persisters. According to these results, both international persisters and non-persisters participated in social interaction with others, but in different ways.

The same frequency of participation question was asked regarding faculty interaction, and responses varied between international persisters and non-persisters. While a larger percentage of international persisters indicated they "very often" or "often" "used email to communicate with an instructor" and "discussed grades or assignments with an instructor," a greater percentage of international non-persisters indicated a higher frequency of "talked about career plans with a faculty member or advisor" and "worked with faculty members on activities other than coursework."

In terms of satisfaction, a larger percentage of international persisters considered their "entire educational experience" and "quality of academic advising" as "excellent" or "good" in comparison with international non-persisters. However, students were also asked if they "could start over again, would [they] go to the same institution [they] are now attending," with response options including "definitely yes," "probably yes," "probably no," and "definitely no." Interestingly, all of the international non-persisters indicated they would "definitely" or "probably" attend the same institution, whereas only 84.5% of the international persisters indicated that they would "definitely" or "probably" attend the same institution.

Domestic student persistence. An examination of frequencies indicated that a greater percentage of international student persisters spent more time participating in certain activities and had better quality relationships than international non-persisters on the majority of items. However, the opposite was found for domestic students. A greater percentage of domestic non-persisters spent more time participating in certain activities and had better quality relationships than domestic persisters, according to the NSSE responses used in this study.

In response to questions involving social interaction related to coursework, a greater percentage of domestic non-persisters reported participating "very often" or "often" than

domestic persisters in activities such as "made a class presentation," "worked with other students on projects during class," "worked with classmates outside of class to prepare class assignments," "participated in a community-based project (e.g., service learning) as part of a regular course," and "tutored or taught other students (paid or voluntary)." A greater percentage of domestic persisters, however, indicated participating more in activities including "contributed to class discussions" and "discussed ideas from your readings or classes with others outside of class."

Regarding the quality of relationships with other students, faculty, and administrative personnel, a larger percentage of domestic non-persisters indicated a "5," "6," or "7" for all three sets of relationships than domestic persisters, suggesting that domestic non-persisters had better relationships with these three groups than domestic persisters. In addition, a higher percentage of domestic non-persisters indicated a higher frequency of faculty interaction than domestic persisters on certain items. These items included "talked about career plans with a faculty member or advisor," "worked with faculty members on activities other than coursework," "discussed ideas from [their] readings or classes with faculty members outside of class," and "discussed grades or assignments with an instructor." The only faculty engagement item on which a greater percentage of domestic persisters indicated a higher frequency than domestic non-persisters was "used email to communicate with an instructor."

A larger percentage of domestic non-persisters also indicated more academic engagement than domestic persisters. A greater percentage of domestic non-persisters indicated that they spent over 15 hours per week preparing for class and that they "worked harder than [they] thought they could to meet an instructor's standards or expectations" than domestic persisters.

In terms of social engagement, a higher percentage of domestic non-persisters indicated that they "very often" or "often" "had serious conversations with students of a different race or ethnicity than [their] own," while similar percentages of persisters and non-persisters worked on campus. However, a higher percentage of domestic persisters participated in "co-curricular activities" and indicated that they "very often" or "often" "had serious conversations with students who are very different from [them] in terms of their religious beliefs, political opinions, or personal values."

Regarding perceived institutional contributions, a greater percentage of domestic non-persisters indicated "very much" or "quite a bit" regarding institutional contributions to "working effectively with others" and "job-related skills." All of the domestic non-persisters indicated that the institution contributed to "job-related skills," in comparison to 52.1% of domestic persisters. Similar percentages indicated that the institution contributed "very much" or "quite a bit" to "speaking clearly and effectively," while a greater percentage of domestic persisters perceived the institution to contribute more to "writing clearly and effectively" than non-persisters. This suggests that even though non-persisters did not return to the institution, they still believe the institution contributed to a few gains, especially to job-related skills.

In terms of satisfaction, a larger percentage of domestic persisters indicated that their "entire educational experience" was "excellent" or "good" in comparison to the domestic non-persisters and that they would "definitely" or "maybe" "attend the same institution again," at 91.5% in comparison to 75% of domestic non-persisters. In contrast, all of the domestic non-persisters indicated that the "quality of academic advising" was "excellent" or "good" in comparison to 69.1% of domestic persisters.

International and domestic persistence. An examination of the NSSE responses of

international and domestic persisters and non-persisters indicates a few similarities between the

persisters and non-persisters in each group. A larger percentage of persisters in both groups

indicated a higher level of engagement on four of the NSSE items investigated than the non-

persisters: "contributed to class discussions," "discussed ideas from your readings or classes

with others outside of class," "used email to communicate with an instructor," and participated in

"co-curricular activities." In addition, a greater percentage of persisters indicated that their

"entire educational experience" was "excellent" or "good," in comparison with non-persisters in

both groups.

Non-persisters in both groups, however, also had higher levels of engagement on certain

items in comparison with persisters, especially related to faculty and academic engagement. A

greater percentage of non-persisters indicated a higher frequency of "talked about career plans

with a faculty member or advisor," "discussed ideas from [their] readings or classes with faculty

members outside of class," "worked harder than [they] thought they could to meet an instructor's

standards or expectations," and spent over 15 hours per week preparing for class. In addition, a

higher percentage of non-persisters also indicated higher levels of "tutored or taught other

students (paid or voluntary)" and "had serious conversations with students of a different race or

ethnicity than [their] own" than persisters.

Conclusion

This chapter presented the findings of the data analysis. Results from the Kruskal-Wallis

H-tests and Mann-Whitney *U*-tests indicated differences in terms of social and academic

engagement, GPA, and credit hours earned between international and domestic persisters and

non-persisters. Significant findings indicated that international persisters had higher GPAs and

earned more credit hours by the end of the first year of study than international non-persisters, and domestic persisters had higher GPAs and earned more credit hours than domestic non-persisters. International persisters spent more hours preparing for class, participating in community-based projects, and working with faculty members on activities other than coursework than domestic persisters, while domestic persisters indicated that if they could start over again, they are more likely to attend the same institution that they are currently attending than international persisters. No significant differences were found, however, on any variable between the two non-persister groups. Next, point-biserial correlations showed that a higher GPA and more credit hours earned related positively to persistence for both domestic and international students. Finally, frequencies revealed that while international persisters indicated higher levels of engagement than international non-persisters on the majority of items, domestic non-persisters had higher levels of engagement than domestic persisters. A discussion of the findings and the implications for future research is presented in the next chapter.

CHAPTER FIVE
Discussion and Conclusion

The purpose of this study was to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US. Two research questions guided this study:

1. Are there differences in terms of social and academic engagement, GPA, and credit hours earned between first-year international and domestic persisters and non-persisters at a large, four-year public research institution in the US?

2. How do social and academic engagement, GPA, and credit hours earned relate to persistence among first-year international and domestic students at a large, four-year public research institution in the US?

Secondary analysis of two datasets was conducted to answer the research questions using descriptive and nonparametric statistics. First-year international student responses to the NSSE from 2001-2011, as well as GPA and credit hours earned, were compared to a matching set of domestic student responses based on the number of NSSE responses of international students who persisted or did not persist to the second year of study.

The findings of the study are reviewed in this chapter, followed by a discussion of those findings. Finally, conclusions and recommendations for future research are presented.

Summary of the Findings

This study produced five major findings which are summarized below.

1. Between international persisters and international non-persisters, and between domestic persisters and domestic non-persisters, the only statistically significant differences found were GPA and credit hours earned. International persisters had a higher GPA and earned more credit hours than international non-persisters, and domestic persisters had a higher GPA and earned more credit hours than domestic non-persisters.

2. Between the two persister groups, the only statistically significant differences found were on four NSSE items; no differences were found on 28 NSSE items. International persisters spent more hours preparing for class, participating in community-based projects, and working with faculty members on activities other than coursework than domestic persisters. At the same time, if domestic students could start over again, they reported they were more likely to attend the institution they were currently attending than international persisters.

3. There were no differences found between the two non-persister groups in relation to social and academic engagement, GPA, or credit hours earned.

4. Higher GPA and more credit hours earned were found to relate to persistence for both international and domestic students.

5. Both persisters and non-persisters were academically and socially engaged. However, international persisters were more engaged than international non-persisters and domestic non-persisters had higher levels of engagement than domestic persisters.

Discussion

The findings of this study help us to understand a little more about undergraduate international student persistence at one large, public US institution. The following is a discussion of some of the more pertinent findings.

It is not surprising that GPA was found to be a significant difference between international persisters and non-persisters, or that a higher GPA related to persistence for both international and domestic students. GPA as a distinguishing factor in international student persistence is consistent with the limited international student literature that has investigated GPA and with what we know about domestic student persistence. Kwai (2009) and

Mamiseishvili (2012) both found that a higher GPA related to persistence to the next year for international students. Of course, it is worth noting that GPA could differentiate persisters from non-persisters, since in order for the institution to allow a student, international or domestic, to continue to attend, the student must meet the minimum GPA requirement.

This finding is, however, worth probing further. In order to be admitted to an institution of higher education, international students must demonstrate English language proficiency. The institution where the current study was conducted, just as most other institutions in the US, requires a minimum score on English proficiency exams such as the TOEFL or IELTS. While not part of the current study, it would be interesting to find out if the international persisters had higher English proficiency exam scores than did the international non-persisters. It seems reasonable to assume that international students who entered with stronger language skills would be able to read, write, and perform better in their classes, and thus to earn higher GPAs than those who entered the university with lower English proficiency scores.

While not surprising, it was interesting to consider that GPA was as strong a predictor of international student success as it was for domestic students. It has been established through previous research on domestic students that GPA is a strong predictor of domestic student persistence (Astin, 1993; Cabrera et al., 1993; Lohfink & Paulsen, 2005; Pascarella & Terenzini, 2005; Sorey & Duggan, 2008; Spradley, 1996). If it is indeed true that GPA is as strong a predictor for international students as domestic students, this would encourage institutions to intervene early in an international student's education on the basis of GPA to potentially help prevent non-persistence. There are many resources on college campuses created to assist in student success, such as individual tutoring, supplemental instruction for classes, and study skills workshops. International students have been found to be reluctant to voluntarily seek help

because of cultural differences and the message that seeking help sends, and/or due to a lack of knowledge about available resources. Intervention by the institution on the basis of low GPA could also help to ensure that such obstacles to improving are overcome.

It is surprising that despite the vast amount of literature on difficulties in cultural adjustment and challenges that international students face at US institutions, the majority of international students in this study performed well enough to maintain a good GPA. Research and literature have cogently argued that the US classroom environment and expectations are different from what international students experience in their home countries (Chapdelaine & Alexitch, 2004; Evans et al., 2009; Kok-Soo, 2008; Liberman, 1994; Tompson & Tompson, 1996; Tseng & Newton, 2002). In spite of these potential barriers, the international persisters in this study were strong enough academically and/or they were able to figure out how to overcome the challenges and differences better than the non-persisters.

If the international persisters in this study were indeed academically stronger and had greater English proficiency than the international non-persisters, it is possible that these characteristics also motivated the international persisters to enroll in more credit hours than the international non-persisters. Credit hours earned was the only other variable found to be significantly different between the persisters and non-persisters in this study, as international and domestic persisters earned more credit hours than international and domestic non-persisters. It is also reasonable to assume that the non-persisters failed some of their courses, based on the lower GPA; students do not earn credit hours for failed courses, which results in fewer credit hours earned as well. It could be that the international persisters in this study entered the university with a stronger academic background and English proficiency, which suggests that pre-entry attributes influence persistence, consonant with Tinto's (1987) model of institutional departure.

While GPA and credit hours earned were found to be significant differences between the persisters and non-persisters, no differences were found in GPA and credit hours earned between the two persister groups and the two non-persister groups. It is possible that international and domestic students are more alike than different regarding GPA and credit hours earned.

It was unanticipated that of the 32 NSSE items which largely investigated student engagement, significant differences would be found between international persisters and domestic persisters on only four items. More differences in engagement were expected because of the vast literature related to the difficulties international students face in learning and adjusting to the norms, rules and regulations of the US university culture (Chapdelaine & Alexitch, 2004; Tseng & Newton, 2002) and developing a social network (Tompson & Tompson, 1996). Students from Asian countries, for example, have indicated that being in a US classroom is very uncomfortable and very different than being in a classroom in their own country. What was particularly uncomfortable for them was the tendency for American students to question the professor and the expectations that students would participate in classroom discussion, both behaviors being alien to their experience (Liberman, 1994). Previous research has also indicated that although students may score well on English proficiency exams and have spent many years studying English, it is not necessarily true that they can always fully understand class lectures or discussions. One student in Tompson and Tompson's (1996) study reported understanding the language, but not the meaning of questions asked by the professor, or what an appropriate response would be, until other students responded first, thus making academic engagement in the classroom difficult. Similarly, while international students must adjust to a different classroom environment, the literature has also shown that developing a social network is an equally difficult aspect of adjustment for them (Tompson & Tompson, 1996). Indeed, international students have

reported that social issues were more important and mentally time-consuming than academic challenges (Tompson & Tompson, 1996), and that building relationships with American students was difficult (Al-Sharideh & Goe, 1998; Terkla et al., 2007; Tompson & Tompson, 1996). For all of these reasons, it was expected that there would be more differences between international and domestic students responses to the questions on the NSSE than were found in this study.

That there were not more differences in social and academic engagement between international persisters and domestic persisters suggests that international persisters may have been able to overcome cultural and language obstacles to be just as academically and socially engaged as domestic persisters. Both groups of persisters were engaged in such activities as interacting with faculty, discussing ideas from class with others outside of class, working with students on projects during class, and participating in co-curricular activities. While international persisters face cultural differences that domestic persisters do not, it could be that international persisters were motivated to develop strategies that allowed them to overcome the cultural norms they had previously learned, purposefully choosing to interact with faculty and students socially and academically in ways similar to domestic students, in order to succeed.

International persisters were found to spend more hours preparing for class, working with faculty members on activities other than coursework, and participating in community-based projects as part of a regular course than domestic persisters. It is reasonable to assume that international students, especially non-native English speakers, needed to spend more time preparing for class in order to be sure they were successful in a still unfamiliar language, needing more time to read and write. Working with faculty on activities other than coursework is consonant with previous research; Andrade (2005) and Evans (2001) both found that support from faculty influenced international student persistence. The international persisters in this

study may have understood that seeking out faculty would serve their adjustment, thus they engaged such activities, or their faculty may have sought them out realizing how difficult it might be for international students to make the first approach. Regarding involvement in community-based projects (e.g., service learning) as part of a regular course, previous research has shown that many international students choose to study in the US to prepare for their future career (Obst & Forster, 2005). If an international student is focused on gaining experience to help prepare for a career, it is likely that the student would take advantage of service learning opportunities and classes where service learning is required in order to help gain real-world experience.

One other significant difference was found between international persisters and domestic persisters on a question not directly related to engagement, "If you could start over again, would you go to the same institution you are now attending?" It was found that international persisters were significantly less likely to attend the same institution they were currently attending if they could start over again than domestic persisters. While many might use this finding to suggest that these respondents were dissatisfied with their experience at the institution or wished to leave, that is not consonant with the finding that the vast majority rated their entire educational experience as "good" or "excellent." It is relevant to keep in mind that the question itself did not address whether they were dissatisfied, nor whether they wished to leave the institution. Thus, their answers may represent a variety of possible considerations by the international persisters who indicated they would not make the same choice again. While we do not know why they would choose not to attend again, it is possible that these students no longer liked the major they had chosen, or found the time, effort and expense required to be persisters more than they might wish, or, that they just would not enroll at any US institution, if given the chance to start over.

It is interesting that while some of the persisters would choose not to attend the same institution again, all of the international non-persisters and the majority of domestic non-persisters (six of eight students) indicated that they would probably or definitely attend the same institution if they could start over again. While this finding was not significant, it makes one wonder what the question really means. It could be an indicator of satisfaction with the institution or it could suggest that that there is more to persistence than an intent to stay at the institution. It could also be that the non-persisters in the current study did not leave of their own volition. However, as this type of question is often used as a proxy for persistence, it is interesting to note that the majority of non-persisters in the current study indicated that they would attend again. While derived from findings from samples too low to be credible, this nevertheless suggests that caution should be exercised when using proxy questions for persistence in future studies.

As the current study had very few international and domestic non-persisters, it is not appropriate to try to generalize from the findings related to non-persisters. It is interesting, however, that at least in this study, just as the international and domestic persisters were more alike than different, the international and domestic non-persisters had more commonalities than differences. Both groups were academically and socially engaged and each non-persister group had a lower mean GPA and earned fewer credit hours than the persister groups. It is tempting to speculate that domestic non-persisters face challenges of their own in the same way that international students face challenges adapting to the US educational culture. Both non-persister groups may have had difficulty adjusting to higher education expectations and performing at the academic level required to be successful.

The vast literature on domestic student persistence suggests that higher levels of engagement are associated with persistence and success (Astin, 1993; Berger, 1997; Cabrera et al., 1993; Thomas, 2000). In this study, while both international and domestic persisters and non-persisters were academically and socially engaged, domestic non-persisters had higher levels of engagement than domestic persisters. However, they did not persist. Given the low number of non-persisters in the study, it may just be an anomaly. However, if this should be found in future studies of non-persisters, it could raise questions about levels of engagement and persistence. While domestic non-persisters in this study were academically and socially engaged, it is important to note that they also had an average GPA that was lower than the institution's requirement to stay at the institution. It is possible that all of the domestic non-persisters in this particular study were simply not allowed to enroll the following Fall term due to low GPA and their social and academic engagement did not make a difference in their persistence.

To date, NSSE is the only major engagement survey that asks about international student status; using NSSE data in this study afforded interesting information about the differences between international and domestic student engagement. However, it must be kept in mind in future research that the NSSE survey has weaknesses in regard to its validity and reliability (Campbell & Cabrera, 2011; Dowd et al., 2011; Olivas, 2011; Porter, 2009).

Previous studies on international student persistence have provided conflicting findings about the relationship between social and academic engagement and persistence. Some studies have found engagement influenced persistence (Andrade, 2005; Andrade, 2008), while others did not (Behroozi-Bagherpour, 2010; Mamiseishivili, 2012), which is one of the reasons this study investigated engagement. The current study did not find any significant differences in

engagement between the international persisters and non-persisters, but the small number of non-persisters in the study makes it impossible to contribute to resolving the conflict in the literature. Future studies will need to be conducted to explore international student engagement and persistence further.

Conclusion

The purpose of this study was to gain a better understanding of undergraduate international student persistence at one large, four-year public research institution in the US. Findings indicate that a higher GPA and more credit hours earned relate to persistence of both international and domestic students. While academic and social engagement were not found to significantly relate to persistence, both international and domestic persisters and non-persisters were indeed academically and socially engaged. In spite of the cultural adjustment challenges that international students face, such as English language ability, cultural norms, and adjustment to a new education system, the findings from this study suggest that international and domestic students appear to be more alike than different in terms of social and academic engagement, GPA, and credit hours earned in relation to persistence. However, due to the small number of non-persisters in this study, additional research will need to be conducted to draw any reasoned conclusions about international non-persisters.

Recommendations for Future Research

Based on the findings and limitations of this study, recommendations for future research are proposed below.

First, the current study should be replicated at other large, public institutions to see if the findings of this study are confirmed. In addition, it should be replicated at different kinds of institutions to see if there may be differences in persistence in relation to institutional type.

Second, a mixed-method study design should be undertaken to study international non-persisters. After survey completion, non-persisters could be interviewed to determine the reasons for departure and to see whether there are differences between international and domestic students related to why they depart.

Third, a study is needed to investigate the relationship between intention to leave and actual persistence or non-persistence. While intent to leave is indeed different than intent to attend again if a student could start over, future research could help clarify if intention to leave leads to actual departure.

Future research should use international student records to investigate reasons for leaving an institution. International students on certain non-immigrant visas must report to their international student advisor when leaving an institution so the immigration record can be transferred or closed according to the appropriate reason for departure. An investigation of these student records over a period of time would be useful in determining why students did not continue at the institution.

Another study should investigate the types of extracurricular activities in which international students are involved. Research questions could consider why international students choose the activities in which they participate and if the nature of the activities inherently influences the amount of interaction between faculty and students.

LIST OF REFERENCES

Al-Sharideh, K. A., & Goe, W. R. (1998). Ethnic communities within the university: An

    examination of factors influencing the personal adjustment of international students.

    Research in Higher Education, *39*(6), 699-725. doi: 10.1023/A:1018714125581

Andrade, M. S. (2005). International students and the first year of college. *Journal of the First-*

    Year Experience, *17*(1), 101-129. Retrieved from

    http://search.proquest.com/docview/61925037

Andrade, M. S. (2006). International students in English-speaking universities: Adjustment

    factors. *Journal of Research in International Education, 5*(2), 131-154. doi:

    10.1177/1475240906065589

Andrade, M. S. (2008). International student persistence at a faith-based institution. *Christian*

    Higher Education, 7(5), 434-451. doi: 10.1080/15363750802016385

Andrade, M. S. (2009). The international student picture. In M. S. Andrade & N. W. Evans

    (Eds.), *International students: Strengthening a critical resource* (pp. 1-24). Lanham,

    MD: Rowman & Littlefield Education.

Andrade, M. S., & Evans, N.W. (2009). Keys to persistence: International students in higher

    education. In M. S. Andrade & N. W. Evans (Eds.), *International students:*

    Strengthening a critical resource (pp. 43-71). Lanham, MD: Rowman & Littlefield

    Education.

Astin, A. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA:

    Jossey-Bass.

Bean, J. P. (1990a). Why students leave: insights from research. In D. Hossler, J. P. Bean, &

    Associates (Eds.), *The strategic management of college enrollments* (pp.147-169). San

    Francisco, CA: Jossey-Bass.

Bean, J. P. (1990b). Using retention research in enrollment management. In D. Hossler, J.P.

    Bean, & Associates (Eds.), *The strategic management of college enrollments* (pp.170-

    185). San Francisco, CA: Jossey-Bass.

Behroozi-Bagherpour, P. (2010). *International student retention in a large Texas urban*

    community college (Doctoral dissertation). Retrieved from ProQuest Dissertations and

    Theses database. (UMI No. 3448042).

Berger, J. B. (1997). Students' sense of community in residence halls, social integration, and

    first-year persistence. *Journal of College Student Development, 38*(5), 441-452.

    Retrieved from http://search.proquest.com/docview/62536090

Bhandari, R., & Chow, P. (2007). *Open doors: Report on international education exchange*.

    New York, NY: Institute of International Education.

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations

    modeling a test of an integrated model of student retention. *The Journal of Higher*

    Education, 64(2), 123-139. Retrieved from http://www.jstor.org/stable/2960026

Campbell, C. M., & Cabrera, A. F. (2011). How sound is NSSE? Investigating the psychometric

    properties of NSSE at a public, research-extensive institution. *Review of Higher*

    Education, *35*(1), 77–103. doi:10.1353/rhe.2011.0035

Chambers, S. R. (2009). *Student engagement: Using the NSSE benchmarks to investigate*

    longterm persistence (Master's thesis). Retrieved from

    http://scholarworks.montana.edu/xmlui/

Chambers, T., & Chiang, C. H. (2011). Understanding undergraduate students' experience: a

    content analysis using NSSE open-ended comments as an example. *Quality and Quantity,*

    46(4), 1113-1123. doi: 10.1007/s11135-011-9549-3

Chapdelaine, R. F., & Alexitch, L. R. (2004). Social skills difficulty: Model of culture shock for international graduate students. *Journal of College Student Development, 45*(2), 167-184. Retrieved from http://search.proquest.com/docview/62077143

Chin, H. K. K., & Bhandari, R. (2006). *Open doors: Report on international education exchange*. New York, NY: Institute of International Education.

Chow, P. (2011). *What international students think about U.S. higher education: Attitudes and perceptions of prospective students in Africa, Asia, Europe and Latin America*. New York, NY: Institute of International Education. Retrieved from http://www.iie.org

Chow, Y.H.A. (2010, September). Ni how: What academic advisors can do to better serve students from China. *Academic Advising Today: Voices of the Global Community, 33*(3). Retrieved from http://www.nacada.ksu.edu

Cone, J. D., & Foster, S. L. (2006). *Dissertations and theses from start to finish: Psychology and related fields* (2nd ed.). Washington, DC: American Psychological Association.

Corder, G. W., & Foreman, D. I. (2009). *Nonparametric statistics for non-statisticians: A step-by-step approach.* Hoboken, NJ: John Wiley & Sons, Inc.

Darling, R. A., & Kahrig, T. S. (2008). *Retention Task Force Report*. Retrieved from University of Tennessee, Knoxville, Office of the Provost website: http://provost.utk.edu/docs/misc/RetentionTaskForceReport2008.pdf

Davenport, M. Y. (2010). *Examining involvement as a critical factor: Perceptions from first generation and non-first generation college students* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3424371).

Dowd, A. C., Sawatzky, M., & Korn, R. (2011). Theoretical foundations and a research agenda to validate measures of intercultural effort. *Review of Higher Education, 35*(1), 17-44. doi:10.1353/rhe.2011.0033

Educational Testing Service (n.d.). *TOEFL for test takers*. Retrieved from http://www.ets.org/toefl

Edwards, D., Coates, H. B., & Radloff, A. (2010). International students' engagement with effective educational practices: A cross-national comparison. *AUSSE Research Briefing*, *5*, 1-9. Retrieved from http://works.bepress.com/hamish_coates/60/

Evans, N. W. (2001). *In their own words: Polynesian students' perspectives on persistence in an American university* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3027715).

Evans, N. W., Carlin, D. B., & Potts, J. D. (2009). Adjustment issues. In M. S. Andrade & N. W. Evans (Eds.), *International students: Strengthening a critical resource* (pp. 25-42). Lanham, MD: Rowman & Littlefield Education.

Ewell, P., McClenney, K., & McCormick, A. C. (2011, September 20). Measuring Engagement. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com

Farrugia, C. A., Bhandari, R., & Chow, P. (2012). *Open Doors 2012 report on international educational exchange*. New York, NY: Institute of International Education.

Gonyea, R. M., & Kuh, G. D. (2006). *Independent colleges and student engagement: Do religious affiliation and institutional type matter?: A special report for the Council of Independent Colleges.* Bloomington, IN: Indiana University Bloomington Center for Postsecondary Research. Retrieved from http://nsse.iub.edu/

Gordon, J., Ludlum, J., & Hoey, J. J. (2008). Validating NSSE against student outcomes: Are they related? *Research in Higher Education*, *49*(1), 19–39. doi: 10.1007/s11162-007-9061-8

Hayes, R. L., & Lin, H. (1994). Coming to America: Developing social support systems for international students. *Journal of Multicultural Counseling and Development*, *22*(1), 7-16. Retrieved from http://search.proquest.com/docview/62820775

Hayes, R. Q., & Whalen, S. K. (2012). *2011-12 CSRDE Retention Report: The Retention and Graduation Rates of Entering Baccalaureate Degree-seeking Freshman Cohorts from Fall 2001 through Fall 2010 in 382 Colleges and Universities*. Norman, OK: The University of Oklahoma Center for Institutional Data Exchange and Analysis.

Hechanova-Alampay, R., Beehr, T. A., Christiansen, N. D., & van Horn, R. K. (2002). Adjustment and strain among domestic and international student sojourners: A longitudinal study. *School Psychology International, 23*(4), 458-474. doi: 10.1177/0143034302234007

Hicks, R., & Lehrer, N. (2003, November). *NSSE and retention: Does integration affect the probability of leaving?* Paper presented at the 30th Annual Conference of the Northeast Association for Institutional Research, Newport, RI.

Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. London, England: McGraw-Hill Book Co.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Hughes, R., & Pace, C. R. (2003, July - August). Using NSSE to study student retention and withdrawal. *Assessment Update: Progress, Trends, and Practices in Higher Education, 15*(4), 1-2, 15. doi: 10.1002/au.154

Institute of International Education. (2014a). Open Doors data: Special reports: Economic impact of international students. *Open Doors 2014 Report on International Educational Exchange.* Retrieved from http://www.iie.org

Institute of International Education. (2014b). Open Doors 2014 fast facts. *Open Doors 2014 Report on International Educational Exchange.* Retrieved from http://www.iie.org

Irungu, J. N. (2010). *The relationship between engagement and perceived academic, personal, and social outcomes for senior international undergraduate students in research* universities (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3391142).

Jaschik, S. (2009, November 9). Engaged or confused? *Inside Higher Ed.* Retrieved from: http://www.insidehighered.com

Johnson, V. L. (2008). *Barriers to enrollment, admissions and retention for international students in the U.S. postsecondary education system* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3329830).

Kitsos, J. M. (2012). *Academic persistence of international student-athletes at NCAA Division I institutions* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3511425).

Kok-Soo, T. (2008). My father wants me to study engineering! In G. Crosling, L. Thomas, & M. Heagney (Eds.), *Improving student retention in higher education* (pp. 52-56). London, England: Routledge.

Kontaxakis, E. (2011). *Experiences that impact the recruitment and retention of international (non-native speaker of English) student-athletes in NCAA Division I institutions* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3491231).

Kuh, G. D., & Gonyea, R. M. (2005). *Exploring the relationships between spirituality, liberal learning, and college student engagement: A special report prepared for the Teagle Foundation.* Bloomington, IN: Indiana University Bloomington Center for Postsecondary Research. Retrieved from http://nsse.iub.edu

Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2010). *Student success in college: Creating conditions that matter.* San Francisco, CA: Jossey-Bass.

Kwai, C.K. (2009). *Model of international student persistence: Factors influencing retention of international undergraduate students at two public statewide four-year university systems* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3390997).

Ladd, P., & Ruby, R.(1999). Learning style and adjustment issues of international students. *Journal of Education for Business, 6*, 363-367. doi: 10.1080/08832329909601712

Lee, C. (2012). *Innovative social support systems and the recruitment and retention of international students in U.S. higher education* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3514229).

Leong, F. T., & Sedlacek, W. E. (1986). A comparison of international and U.S. students' preferences for help sources. *Journal of College Student Personnel, 27*(5), 426– 430. Retrieved from http://search.proquest.com/docview/63239455

Levy, J., Wubbels, T., Brekelmans, M., & Morganfield, B. (1997). Language and cultural factors in students' perceptions of teacher communication style. *International Journal of Intercultural Relations*, *21*, 29-56. doi.org/10.1016/S0147-1767(96)00005-3

Liberman, K. (1994). Asian student perspectives on American university instruction. *International Journal of Intercultural Relations*, *18*, 173-192. doi:10.1016/0147-1767(94)90027-2

Lin, J. G., & Yi, J. K. (1997). Asian international students' adjustment: Issues and program suggestions. *College Student Journal, 31*, 473-479. Retrieved from http://connection.ebscohost.com/c/articles/245221/

Lipson, C. (2008). *Succeeding as an international student in the United States and Canada*. Chicago, IL: University of Chicago Press.

Lohfink, M. M. & Paulsen, M. B. (2005). Comparing the determinants of persistence for first-generation and continuing-generation students. *Journal of College Student Development, 46*(4), 409-428. Retrieved from http://search.proquest.com/docview/62080993

Lustig, M. W., & Koester, J. (2003). *Intercultural competence: interpersonal communication across cultures*. Boston, MA: Allyn and Bacon.

Macready, C., & Tucker, C. (2011). *Who goes where and why? An overview and analysis of global education mobility.* New York, NY: Institute of International Education.

Mamiseishvili, K. (2012). International student persistence in U.S. postsecondary institutions. *Higher Education, 64*, 1-17. doi: 10.1007/s10734-011-9477-0

Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management, 16*(2), 82-90. Retrieved from http://search.proquest.com/docview/62287998

McCormick, A. C., & McClenney, K. (2012). Will these trees ever bear fruit? A response to the special issue on student engagement. *The Review of Higher Education, 35*(2), 307-333. doi:10.1353/rhe.2012.0010

McMahon, M. (1992). Higher education in a world market: an historical look at the global context of international study. *Higher education, 24* (4), 465-482. doi: 10.1007 /BF00137243

Mertler, C. A., & Vannatta, R. A. (2005). *Advanced and multivariate statistical methods: Practical application and interpretation* (3rd ed.). Glendale, CA: Pyrczak Publishing.

Mori, S. (2000). Addressing the mental health concerns of international students. *Journal of Counseling and Development, 78*(2), 137-44. doi: 10.1002/j.1556-6676.2000.tb02571

National Survey of Student Engagement. (n.d.). *National Survey of Student Engagement*. Retrieved from http://nsse.iub.edu.

National Survey of Student Engagement. (2002). *From Promise to Progress: How Colleges and Universities Are Using Student Engagement Results to Improve Collegiate Quality, 2002 Annual Report*. Bloomington, IN: Indiana University, Center for Postsecondary Research. Retrieved from http://nsse.iub.edu

Nava, M. E. (2010). *Exploring new paths: The first-year experiences for first-generation college students and the impact of participating in comprehensive programs* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3417476).

Obst, D., & Forster, J. (2005). Country report: USA: International students in the United States. *Perceptions of European higher education in third countries: Outcomes of a study by the*

Academic Cooperation Association. New York, NY: Institute of International Education. Retrieved from http://iie.org/

OECD (2014). *Education at a Glance 2014: OECD Indicators*. Paris, France: OECD Publishing. doi: 10.1787/eag-2014-en

Office of Institutional Research & Assessment. (n.d.). *UTK Fact Book Archive*. Retrieved from http://oira.utk.edu/factbook/archive

Olivas, M. A. (2011). If you build it, they will assess it (Or, an open letter to George Kuh, with love and respect). *The Review of Higher Education, 35*(1), 1-15. doi:10.1353 /rhe.2011.0032

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students* (vol. 2). San Francisco, CA: Jossey-Bass.

Pascarella, E. T., Terenzini, P. T., & Blimling, G. S. (1994). The impact of residential life on students. In C. C. Schroeder & P. Mable (Eds.). *Realizing the educational potential of residence halls* (pp. 22-52). San Francisco, CA: Jossey-Bass.

Pedersen, P. B. (1991). Counseling international students. *The Counseling Psychologist, 19*(1), 10-58. doi: 10.1177/0011000091191002

Porter, S. R. (2009). *Do college student surveys have any validity?* Paper presented to the meeting of the Association for the Study of Higher Education. Vancouver, Canada. Reprinted in *The Review of Higher Education, 35*(1), 45–76. doi:10.1353/rhe.2011.0034

Rajapaksa, S. & Dundes, L. (2002). It's a long way home: International student adjustment to living in the United States. *College Student Retention, 4*(1), 15-28. Retrieved from http://search.proquest.com/docview/62235339?accountid=14766

Ramsay, S., Barker, M., & Jones, E. (1999). Academic adjustment and learning processes: A comparison of international and local students in first-year university. *Higher Education Research & Development*, *18*(1), 129-144. doi: 10.1080/0729436990180110

Salkind, N. J. (2007). *Statistics for people who (think they) hate statistics.* Thousand Oaks, CA: Sage Publications, Inc.

Saret, L. (n.d.). *Retaining students in classes: Putting theory into everyday practice*. Retrieved from Oakton Community College website, http://www.oakton.edu/user/1/lsaret/Laura SaretOaktonWebSite/Ways%20Faculty%20Can%20Encourage%20Student%20Retention .htm

Seidman, A. (2005). Where we go from here: A retention formula for student success. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 295-316). Westport, CT: American Council on Education and Praeger Publishers.

Smithee, M. B. (2009). Applying intercultural concepts to academic integrity. In T. Twomey, H. White, & K. Sagendorf (Eds.), *Pedagogy not policing: Positive approaches to academic integrity at the university* (pp. 125-134). Syracuse, NY: The Graduate School Press of Syracuse University.

Sorey, K. C. & Duggan, M. H. (2008). Differential predictors of persistence between community college adult and traditional-aged students. *Community College Journal of Research and Practice, 32*(2), 75-100. doi: 10.1080/10668920701380967

Spradley, P. (1996). *A multiple variable analysis of the persistence of adult African American male graduates from a baccalaureate degree program* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 9636033).

Sprent, P., & Smeeton, N. C. (2001). *Applied non-parametric statistical methods* (3rd ed.) Boca Raton, FL: Chapman & Hall/CRC.

Strayhorn, T. L. (2012). Satisfaction and retention among African American men at two-year community colleges. *Community College Journal of Research and Practice*, *36*(5), 358-375. doi: 10.1080/10668920902782508

Tauriac, J. J. (2009). *The effects of secondary and postsecondary social support on the social and academic integration and college persistence of Black undergraduate subgroups* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3391829).

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education, 37*(1), 1-22. Retrieved from http://www.jstor.org/stable/40196208

Terkla, D. G., Roscoe, H. S., & Etish-Andrews, J. (2007). Voices from around the world: International undergraduate student experiences. *Association for Institutional Research Professional File, 104*, 1-15. Retrieved from http://www.eric.ed.gov/contentdelivery /servlet/ERICServlet?accno=ED504410

Tinto, V. (1987). *Leaving college: rethinking the causes and cures of student attrition.* Chicago, IL: University of Chicago Press.

Tinto, V. (1993). *Leaving college: rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

Thomas, R. O. (1990). Programs and activities for improved retention. In D. Hossler, J. P. Bean, and Associates, *The strategic management of college enrollments* (pp. 186-201). San Francisco, CA: Jossey-Bass.

Thomas, S. L. (2000). Ties that bind: A social network approach to understanding student integration and persistence. *The Journal of Higher Education, 71*(5), 591-615. Retrieved from http://www.jstor.org/stable/2649261

Tompson, H. B., & Tompson, G. H. (1996). Confronting diversity issues in the classroom with strategies to improve satisfaction and retention of international students. *Journal of Education for Business*, *72,* 53-57. doi: 10.1080/08832323.1996.10116826

Trice, A. G. (2004, November-December). Mixing it up: International graduate students' social interactions with American students. *Journal of College Student Development*, *45*(6), 671-687. doi: 10.1353/csd.2004.0074

Tseng, W., & Newton, F. (2002). International students' strategies for well-being. *College Student Journal*, *36*(4), 591-597. Retrieved from http://connection.ebscohost.com/c/articles/9066967

Wan, T., Chapman, D. W., & Biggs, D. A. (1992). Academic stress of international students attending U.S. universities. *Research in Higher Education, 33*(5), 607-623. Retrieved from http://www.jstor.org/stable/40196081

Wildavsky, B. (2010). *The great brain race: How global universities are reshaping the world.* Princeton, NJ: Princeton University Press.

Williford, A. M., & Schaller, J. Y. (2005, May). *All retention all the time: How institutional research can synthesize information and influence retention practices*. Paper presented at the 45th Annual Forum of the Association for Institutional Research, San Diego, CA.

Witherell, S. (2008, Spring). Succeeding as an international student: A new book by Charles Lipson. *IIE Networker*, 44-45.

Wyatt, L. G. (2011). Nontraditional student engagement: Increasing adult student success and retention. *The Journal of Continuing Higher Education, 59*(1), 10-20. doi: 10.1080/07377363.2011.544977

Yorke, M. (1999). *Leaving early: undergraduate non-completion in higher education.* Philadelphia, PA: Falmer Press.

Zhai, L. (2004). Studying international students: Adjustment issues and support. *Journal of International Agricultural and Intercultural Extension Education, 11*(1), 97-104. doi: 10.5191/jiaee.2004.11111

Zhao, C. M., Kuh, G. D., & Carini, R. M. (2005). A comparison of international student and American student engagement in effective educational practices. *The Journal of Higher Education, 76*(2), 209-231. doi:10.1353/jhe.2005.0018

Zimmerman, S. (1995). Perceptions of intercultural communication competence and international student adaptation to an American campus. *Communication Education, 44*, 321-335. doi:10.1080/03634529509379022

APPENDIX

Selected Items from the NSSE

*Items are numbered according to the 2005-2011 NSSE surveys

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

		Very often	Often	Some-times	Never
a	Asked questions in class or contributed to class discussions	☐	☐	☐	☐
b	Made a class presentation	☐	☐	☐	☐
g	Worked with other students on projects during class	☐	☐	☐	☐
h	Worked with classmates outside of class to prepare class assignments	☐	☐	☐	☐
j	Tutored or taught other students (paid or voluntary)	☐	☐	☐	☐
k	Participated in a community-based project (e.g. service learning) as part of a regular course	☐	☐	☐	☐
l	Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	☐	☐	☐	☐
m	Used e-mail to communicate with an instructor	☐	☐	☐	☐
n	Discussed grades or assignments with an instructor	☐	☐	☐	☐
o	Talked about career plans with a faculty member or advisor	☐	☐	☐	☐
p	Discussed ideas from your readings or classes with faculty members outside of class	☐	☐	☐	☐
r	Worked harder than you thought you could to meet an instructor's standards or expectations	☐	☐	☐	☐
s	Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	☐	☐	☐	☐
t	Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	☐	☐	☐	☐
u	Had serious conversations with students of a different race or ethnicity than your own	☐	☐	☐	☐
v	Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	☐	☐	☐	☐

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

	Unfriendly, Unsupportive, Sense of alienation 1		2	3	4	5	6	Friendly, Supportive, Sense of belonging 7
a Relationships with other students	☐		☐	☐	☐	☐	☐	☐

	Unavailable, Unhelpful, Unsympathetic 1		2	3	4	5	6	Available, Helpful, Sympathetic 7
b Relationships with faculty members	☐		☐	☐	☐	☐	☐	☐

	Unhelpful, Inconsiderate, Rigid 1		2	3	4	5	6	Helpful, Considerate, Flexible 7
c Relationships with administrative personnel and offices	☐		☐	☐	☐	☐	☐	☐

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

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

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

Hours per week

    b. Working for pay on campus

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

Hours per week

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

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

Hours per week

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

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

Hours per week

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

	Very much	Quite a bit	Some	Very little
a Providing the support you need to help you succeed academically	☐	☐	☐	☐
e Providing the support you need to thrive socially	☐	☐	☐	☐

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

	Very much	Quite a bit	Some	Very little
b Acquiring job or work-related knowledge and skills	☐	☐	☐	☐
c Writing clearly and effectively	☐	☐	☐	☐
d Speaking clearly and effectively	☐	☐	☐	☐
h Working effectively with others	☐	☐	☐	☐

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

☐ Excellent

☐ Good

☐ Fair

☐ Poor

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

☐ Excellent

☐ Good

☐ Fair

☐ Poor

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

☐ Definitely yes

☐ Probably yes

☐ Probably no

☐ Definitely no

15. Write in your year of birth: | 1 | 9 | | |

16. Your sex:

☐ Male   ☐ Female

17. Are you an international student or foreign national?

☐ Yes   ☐ No

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

☐ Started here   ☐   Started elsewhere

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

☐ Yes   ☐   No

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

☐ Yes   ☐   No (Go to question 25.)

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

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

a. Primary major (Print only one.):

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

*Item 24 is not included in the 2001 & 2002 NSSE surveys.

VITA

Elizabeth Washam Smith was born in Newport News, Virginia. She attended Wake Forest University in Winston-Salem, North Carolina, where she received her Bachelor of Arts degree in Communication and French. During her time as an undergraduate, she studied for a semester at the Université de Bourgogne in Dijon, France. Upon graduation, she lived on the island of Corsica for three years, and returned to the United States to teach high school French. She then earned her Master of Science degree in College Student Personnel at the University of Tennessee, Knoxville. She currently works as a Coordinator in International Student & Scholar Services, advising international students on immigration and cultural adjustment at the University of Tennessee, Knoxville.