THE IMPACT OF PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE FACTORS ON THE ACADEMIC AND SOCIAL ADJUSTMENT OF ADULT VERTICAL TRANSFER STUDENTS

by

JEREMY S. SCHWEHM

(Under the Direction of Lorilee R. Sandmann)

ABSTRACT

The dual purpose of this quantitative study was to provide a comprehensive descriptive profile of an adult vertical transfer student population and to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of these students at the university. Data were collected on adult vertical transfer student demographic information, community college experiences, and experiences with academic and social adjustment at the university. The 409 participants in this study were aged 25 years or over at the time of community college attendance and had completed the equivalent of 12 semester hours or above of community college coursework with the intent of transferring credits to a university.

Four research questions were examined in this study using descriptive statistics, ANOVA, simple linear regression, and multiple linear regression. The results of the descriptive analysis showed that the demographic profile that fit the largest group of adult vertical transfer students in this study was a 33 year old white, female, continuing-generation college student with a yearly income below $29,000.

Survey results showed community college GPA to be the most influential variable in predicting university GPA, and level of perceived classroom involvement at the community college was the most influential variable in predicting academic self-efficacy. Level of classroom involvement at the community college was also the most influential variable in predicting social adjustment at the university.

The four major conclusions of this study were: (a) environmental variables had little impact on the ability of adult transfer students to participate in academic or social activities; (b) classroom involvement influenced both academic and social adjustment at the university; (c) community college GPA was the most influential variable in predicting university success; and (d) adult students did not fit the common descriptive profile of vertical transfer students.

INDEX WORDS: Adult education, community college transfer, adult vertical transfer student, vertical transfer, community college, adult student adjustment, transfer student adjustment, academic adjustment, social adjustment, academic self-efficacy, perceived cohesion, connecting classroom, classroom involvement, transfer student persistence, transfer barriers, student involvement theory, student departure theory, model of nontraditional student attrition

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M.A., Northwestern Louisiana State University, 2007

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2011

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December 2011

DEDICATION

To Liz, Megna, and Morgan

ACKNOWLEDGEMENTS

I must first acknowledge the most loving and supportive partner a person could ever want, my wife Liz. When I went to you with the proposition of leaving my cushy job (where I had just received a promotion) to pursue a doctoral degree, without hesitation you said, "As long as you go to Georgia." Lucky for me, UGA has the best Adult Education program in the Country. I know picking up everything and moving to Athens was not easy, and I know you sacrificed your rapid career growth to give me this opportunity. Liz, you have been nothing but encouraging, supportive, and selfless, even through the most difficult of times. This accomplishment is as much yours as it is mine. For your love and unwavering support, I am forever grateful.

I must also acknowledge my parents, Jim and Susan Schwehm, for your love, guidance, and support. In a way uniquely your own, you both instilled in me a thirst for knowledge and the desire to grow and learn. I hope you look on this accomplishment, and the accomplishments of all of your children, as a source of pride and as a testament to your ability as parents.

I believe beyond a shadow of a doubt that I have one of the best doctoral committees to ever be assembled at the University of Georgia. Having an older brother with a Ph.D., I heard all the horror stories about "gotcha" games, in-fighting, superiority complexes, not being able to schedule meetings, and so on. Imagine my surprise when I walked in to defend my comprehensive exams and saw my committee members asking about each other's children, laughing, and carrying on like they actually liked each other.

I do not know if my experience is the norm, or if it is the exception to the rule, but I am sincerely appreciative for the insights and continuous support I have received from each member of my committee. I consider each of you a mentor and a friend.

I must acknowledge my committee chair, Dr. Lorilee Sandmann, who took me on after comprehensive exams and has seen me through this journey. You have taught me what it means to be a true academic professional. I appreciate all the opportunities you have given me to develop my skills as a teacher, researcher, reviewer, and writer. If I am ever fortunate enough to be in the position to chair a doctoral committee, I hope I can be as inspiring, encouraging, supportive, and available as you have been to me. You have been a constant source of guidance, in matters academic, professional, and personal, and for that I am truly grateful.

I must also acknowledge Dr. Desna Wallin. I want to thank you for the time you spent as my committee chair. When I found out I would be moving to Oregon, I thought my PhD hopes would be put on hold indefinitely. I know that if it were not for you, I would have never had the opportunity to reach this point. Thanks for believing in me and recognizing that I had what it took to see this thing through, even when I had doubts myself.

Dr. Bierema, thank you so much for agreeing to be on my committee. I came to you while prepping to move across the country, with my committee in flux, and not knowing if I was going to be able to continue in the program. You agreed to jump into that chaos and I know the committee and my work were stronger for it. I also want to thank you for treating me as a colleague, whether we were working together with

UGALLA or in class. You have always treated me and my fellow classmates with respect, and for that I am thankful.

I would also like to thank Dr. Schell for your willingness to work with me, even in retirement. You introduced me to a volume of literature on communities of practice, and my present and future research will benefit greatly from this knowledge. One of my regrets is not having the opportunity to attend your whale watching course. After seeing your poster my first day in River's Crossing I told myself I would find the time to do it before I was done, but life got in the way.

Dr. Dirani, thank you as well for your guidance and statistical expertise. I remember our meeting when I asked you to be on my committee; it was our first time meeting each other. I asked you to be my methodologist and then told you I would be moving across the country in a few days. Why you agreed I will never know. I would also like to thank you for your hands-off approach. I can be a strong-willed person and I believe that if you had been too controlling, our partnership would not have worked. Thanks for letting me learn by doing and offering feedback along the way.

I have made many great friends throughout my time at UGA and would be remiss if I did not acknowledge some here. I would like to thank my fellow doctoral students Katherine Adams and Dr. Dionne Poulton for their friendship and support. I would like to give a special thank you to Jihyun Kim. Without your help on so many occasions I would not be at the point I am today. Thank you so much for all you have done for me.

Thank you all again!

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CHAPTER 1

INTRODUCTION

The baccalaureate degree, described as "a passport to the American middle class" (Pascarella & Terenzini, 1991, p. 369), offers the promise of upward economic and social mobility for those who attain it. In the United States (U.S.), approximately 28% of the population 25 years and older posses a baccalaureate degree (U.S. Census Bureau [U.S. Census], 2008); from an economic standpoint these individuals are much more likely to attain and/or remain at a middle-class status than their peers who do not complete a university degree. In the context of the current U.S. and global economic climate, the attainment of a baccalaureate degree produces tangible economic and social gains. According to the National Center for Education Statistics (National Center for Education Statistics, 2010), the median yearly income for baccalaureate degree completers, $48,000, is over $20,000 more than those with a high school equivalency or lower.

There are several pathways by which one might attain a baccalaureate degree. These include beginning one's postsecondary education at a 4-year degree granting institution, attending one of a select few community colleges accredited to offer baccalaureate degrees, or initially enrolling in a community college and then transferring to a university. The community college transfer function offers many students, including adult students, access to the baccalaureate degree (Cohen & Brawer, 2008). The vertical transfer pathway remains one of the primary functions of the community college (Cohen & Brawer, 2008; de la Torre, 2007; Tatum, Hayward, & Monzon, 2006; Wellman, 2002).

According to the most recent Community College Survey of Student Engagement (CCSSE), 75% of U.S. community college students surveyed identified vertical transfer as their primary or secondary goal (CCSSE, 2010), and each year thousands of community college students do transfer to a university (Kozeracki, 2001, p. 61). Two-thirds of adult students at universities are community college transfers (Aslanian, 2001, p 52). As scholars have begun to develop a knowledge base on the vertical transfer pathway, little attention has been devoted to the adult transfer student experience. This oversight represents a missed opportunity to examine the adjustment process of adult students in a different, and perhaps more complex, academic and social context. Additionally, structural support at universities to facilitate transfer student adjustment, which is predicated on research in the 18-24 year old transfer student population, fails to account for issues specific to the academic and social adjustment of the adult student.

Background of the Problem

Community colleges serve a large and diverse student population. Community colleges disproportionately serve students from groups historically underrepresented in higher education, a group including adult students (Brint & Karabel, 1989; Cohen & Brawer, 2003, 2008; Dougherty, 1994; Handel, 2007; Laanan, 2001). The community college student is more likely to be female, Black or Hispanic, and from a low-income family (Horn & Nevill, 2006). In terms of enrollment status, 59% of community college students are enrolled part-time compared to 41% full-time (American Association of Community Colleges [AACC], 2011).

Adult community college transfer students are neither a new nor a small subgroup of students. Community college transfer students are "likely to be older, be minorities . .

. have weaker academic backgrounds, and be less confident about their ability to complete a program" (Monroe, 2006, p. 35). Although the average age of the community college student has dropped over the last two decades (Adelman, 2005), the average age is 28 years (AACC, 2011). In a comprehensive study of community colleges, Phillippe and Sullivan (2005) found over 43% of community college students were 25 years old or over, with 12.2% 25-29 years old, 8.7% 30-34 years old, and 22.5% above the age of 35 (p. 33). For Fall 2008 enrollment, adults aged 25 and over made up 40.1% of 6.6 million students in community colleges (NCES, 2010, p. 7). Of all enrolled students in the community college, adults made up 24.3% of full-time enrollees and 41.3% of part-time enrollees.

Two-thirds of the adult undergraduate population at universities originates from this community college population (Aslanian, 2001). The actual and potential growth in all transfer student enrollments has required universities to allocate additional resources to assisting students in the transition process in an attempt to improve retention and degree attainment (Jacobs, 2004), and the responsibility to facilitate a pathway to degree attainment for both native and transfer students lies with the university (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Townsend & Wilson, 2006b). However, many new initiatives to assist in the transfer transition process are decidedly oriented for the traditional, residential student (Kodama, 2002). Although adults students have become a distinct population for universities (Sandmann, 2010), many institutions remain slow in implementing adult-centered policies and practices (Kasworm, 2003b; Kasworm, Sandmann, & Sissel, 2000).

Transitional Barriers

The transfer option provides adult students with flexible, affordable access to the baccalaureate degree, yet student-centered and structural barriers exist for students who begin their postsecondary education at a community college (Doyle, 2009; Eggleston & Laanan, 2001). Adult undergraduates face a special set of challenges in the adjustment process into postsecondary education, and many colleges and universities have struggled to adapt to this growing demographic (Council on Adult and Experiential Learning [CAEL], 2000; Sissel, Hansman, & Kasworm, 2001). Early research on persistence pinpoints several factors, or obstacles, that impact adult learner transition in postsecondary education. Cross (1981) proposed a typology of barriers adults face when returning to school. These barriers included situational barriers, institutional barriers, dispositional barriers, and information barriers. In addition to these variables, Pinkston (1997) found that adult students faced procedural and financial barriers in postsecondary education. More resent research places the transitional barriers adults face into four broad categories: (a) institutional, (b) situational/environmental, (c) psychological, and (d) educational (CAEL, 2000; Compton, Cox, & Laanan, 2006; Hardin, 2008).

Institutional

Institutional barriers are those policies and procedures that impede the progress of the adult learner. Institutional culture is important in two respects. One, policies, procedures, and attitudes toward adult students create an institutional culture or learning context that can be seen as welcoming or threatening to the adult student. Secondly, it is highly likely that adult transfer students will have to adapt to two separate, oftentimes differing institutional cultures to be successful. Askham (2008) identified two dueling

worlds, or contexts, within institutions of higher education in relation to the adult learner, identity development, and the learning process. The negative context, named the "alien" culture, manifested itself as a culture of confusion in higher education, including policies, procedures, language, writing guidelines, assessment, and other issues that were intimidating to the adult student (p. 90).

Askham (2008) juxtaposed the alien culture with that of the positive context referred to as the "learning community." Unlike the alien culture and its theme of intimidation and confusion, the learning community context represented the social support adult learners experience through institutionalized assistance, family, and friends. In many cases, the community college mimics the "learning community" culture while the university demonstrates traits of the "alien" culture.

Situational/Environmental

Inherent in the idea of building a learning community in the university is the need of support services for adult learners. Although it is widely recognized that the amount of adult learners continues to increase on 4-year campuses, the misrepresentation still exists that adults are more self-serving and not in need of the same level of support as young adult students (CAEL, 2000). However, adults require the same level of support to be successful, and sometimes more (Hardin, 2008).

Situational barriers are common for the adult student and might include problems with family and work, economic issues, role conflicts, and other issues not directly controlled by the institution. Bean and Metzner (1985) use the term "environmental variable" when addressing situational barriers. Bean and Metzner found that in many cases, situational barriers were more important, and a better predictor of adjustment and

persistence, than academic or other variables. In addition, support addressing situational barriers, such as encouragement from family or employer, compensated for weak academic support (p. 492).

Psychological

The educational transition can oftentimes be more psychologically traumatic for adult students compared to their younger peers (Donohue & Wong, 1997). Of the psychological barriers adults face, including lack of self-confidence, inadequate coping skills, and negative beliefs about expectations (Kerka, 1989), stress by and large has a significant impact on adjustment and persistence (Bean & Metzner, 1985). According to Kuh (1980), older students show higher levels of stress than younger students. Stress in the educational setting might take many forms, and many psychological stressors occur throughout the transition process.

Educational

Many adults are not sufficiently prepared academically to successfully transition into college (Hardin, 2008, p. 53). The issue of academic preparation is especially important for adult transfer students. Critics of the community college point out that these institutions fail to adequately prepare students for the academic rigors of the university (Alfonso, 2006; Brint & Karabel, 1989; Dougherty, 1992, 2001). Community college transfer students are "likely to be older, be minorities . . . have weaker academic backgrounds, and be less confident about their ability to complete a program" (Monroe, 2006, p. 35). Considering this in light of adult students lacking academic preparation, the academic picture for adult transfer students initially looks bleak.

As the potential exists for increasing numbers of adult students with community college beginnings to make the transition to the university, developing a knowledge base about adult transfer students is essential in building an understanding of this population. Approximately 50% of first time college students begin their studies at a community college (Cohen & Brawer, 2003, 2008), and a sizable portion of the adult students within this population end up at a university. Although the knowledge base on the transfer transition process has grown, few researchers have focused on adult transfer students as a unique entity within the overall body of transfer research. When examining the academic and social adjustment process inherent in the transition from community college to the university in light of the aforementioned obstacles, research chronicling the adult student experience is virtually non-existent.

Problem Statement

The problem this research sought to address is the scarcity of knowledge regarding adult community college transfer students; particularly the impact of community college experiences on academic and social adjustment at the university. While research into the 18-24 year old transfer student population points to a variety of factors important in the community college to university transition process, the lack of research into the adult experience limits the effectiveness of researchers and practitioners in recognizing and addressing problems specific to this population.

In a review of years of research evidence, Pascarella and Terenzini (2005) concluded that " students seeking a bachelor's degree who begin their college careers in a 2-year public institution continue to be at a disadvantage in reaching their educational goals compared with similar students entering a four-year college" (p. 381). More recent

studies also suggest that community college transfers were significantly less likely to reach baccalaureate degree completion than those who began at the university. Alfonso (2006) found that students who begin at a community college have a probability of bachelor's degree attainment that is over 30% lower than comparable students who attend a 4-year college; the differential rate occurs when controlling for non-traditional patterns of enrollment "—i.e., interrupting enrollment, attending part-time, enrolling in remedial education, and delaying enrollment" (p. 891). Missing in some of these conclusions, however, is what specific factors influence vertical transfer students' matriculation at the university. Also missing are identifiable links, based in research evidence, among the adult transfer students' community college experience and the student's adjustment process at the university.

Transfer studies tend to focus on cognitive measures of academic performance and persistence. However, research has shown that cognitive measures alone are not the best predictors of academic performance and persistence (Duggan & Pickering, 2008). Researchers have not controlled for the unique characteristics of the adult transfer student population, and research lacks a focus on examining transfer students as subpopulations with common characteristics. Little is known about the adult community college transfer student, or the adult community college transfer student experience (Monroe, 2006), and researchers have called for more in-depth study of nontraditional transfer students (Flaga, 2006; Wawrzynski & Sedlacek, 2003). The problem, then, is that not much is known about adult transfer students' precollege characteristics, their goals at the community college, their experiences through the transfer process, or their academic and social adjustment at the university. This research would address the stated need for more

research on subgroups of transfer students (Woosley & Johnson, 2006) by expanding our knowledge of the adult community college transfer student experience.

Purpose of the Study

The purpose of this quantitative study is two-fold: (1) to provide a description of the adult transfer student population and (2) to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of adult community college transfer students at the university. Adult student adaptation to postsecondary education is a significant sub-theme in adult higher education research (Kasworm, 1990), and research on adult transfer adds to this theme by viewing the adaptation process through a different lens. The questions guiding this study are:

1. What is the descriptive profile of the adult community college transfer student population?
2. What precollege characteristics influence the academic and social adjustment process of adult vertical transfer students at the university?
3. What community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university?
4. Are the most influential variables demographic, academic (GPA), social, or environmental?

Framework

This study was informed by student involvement theory (Astin, 1984), Tinto's (1975) model of student departure, Bean and Metzner's (1985) conceptual model of nontraditional student persistence, and the concept of the connecting classroom (Graham,

Donaldson, Kasworm, & Dirkx, 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994) . As applied to the study of adult vertical transfer students, these theories and concepts presume that the independent constructs of precollege characteristics, community college experiences, and university experiences influence or explain the dependant variables academic and social adjustment at the university (see Figure 1.1 below). Student involvement theory and Tinto's model of student departure have been used extensively as a conceptual framework to guide studies on the process of student integration in their first year of college (Berger & Milem, 1999), yet their application to understanding the integration of transfer students at the university is warranted because these theories are also applicable to the integration process transfer students undergo transitioning from the community college to the university (Laanan, 2004).

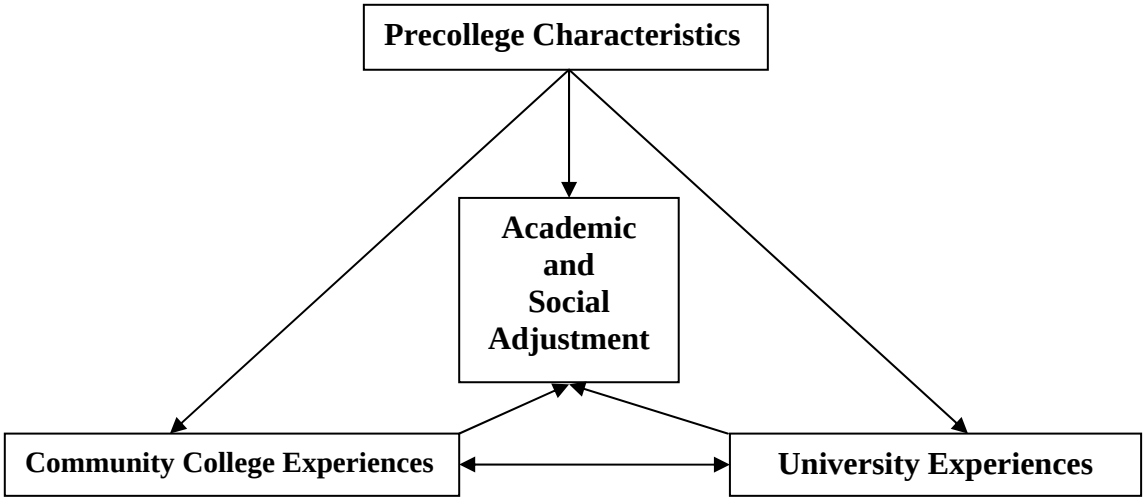

Figure 1.1 : Relationship of Constructs in the Vertical Transfer Process

In predicting transfer student adjustment and performance at the university, Astin's (1984) theory presumes that transfer students who exhibit high levels of social and academic involvement at the community college would be more likely to exhibit this behavior at the university (Laanan, 2007). According to Laanan (2004), the utility of

Astin's theory to the study of transfer students is evident: "If community college transfer students are involved in their social and academic activities at the two- and four-year levels, they will more likely experience a successful or positive academic and social adjustment at senior institutions" (p. 335).

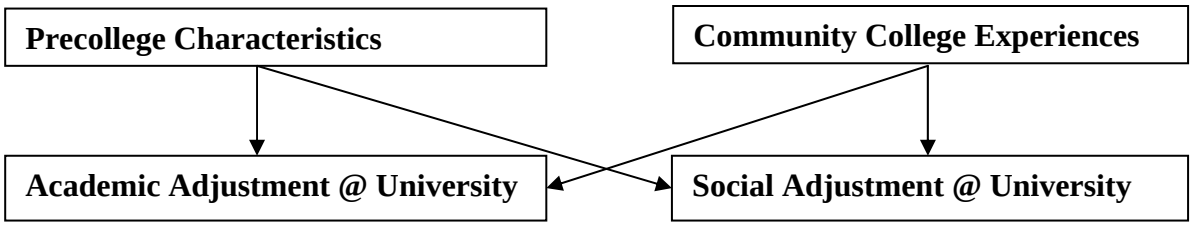

Figure 1.2: Relationships Investigated in Study

In addition, the theory of student involvement has implications for adult learners. Astin (1993) argues that students who become more involved in campus academic and social activities, and who make connections with faculty members outside of the classroom, are more likely to persist. Acknowledged in this hypothesis, however, is that the mental and physical energy of students is limited. Adult students generally have responsibilities beyond educational endeavors, including working full-time and parental responsibilities (Knowles, 1984; Merriam & Caffarella, 1999; Merriam, Caffarella, & Baumgartner, 2007), and oftentimes academics are not the top priority (Bean & Metzner, 1985; Berger & Maloney, 2003).

Vertical Transfer Constructs

Precollege characteristics. Pre-college characteristics are those characteristics that the student brings to college, including age, race, gender, and socioeconomic status (Ethington & Horn, 2007). To some extent, these characteristics play a role in bringing the student to college (Pace, 1984). Socioeconomic status can play a role in who transfers, as research indicates community colleges with higher transfer rates tend to have

students with higher socioeconomic status (Wassmer, Moore, & Shulock, 2004). In the Tinto (1975) and Bean and Metzner (1985) models, personal attributes and precollege experiences either directly or indirectly impact performance in college. According to Astin (1984), precollege characteristics have direct and indirect impacts on involvement.

Community college and university experiences. Community college and university experiences can be viewed from both an academic and social perspective. Community college and university experiences include GPA, building self-confidence, experiences with faculty, hours spent on campus, obtaining an associate's degree, participation in co- and extra-curricular activities, and in-class social integration (Laanan, 2007; Carlan, 2001; Carlan & Byxbe, 2000). These categories mirror academic and social variables, with experiences being more academic in nature and activities being social in nature. Academic components include GPA and major, reasons for attending university, and participating in transfer orientation or other transfer programs. Social components include experiences with faculty, involvement activities, course learning, and utilizing support services.

Academic and social adjustment. Dependent variables in this study will be determined from scores received on the testing instrument. Academic adjustment measures the student's adaptation to the educational demands of the university. Social adjustment measures the student's adaptation to the interpersonal experiences at the university (e.g., joining groups, involvement in social activities, making friends, classroom involvement).

Significance of the Study

Adult Education

A major critique in applying Tinto (1975, 1993) and Astin (1984) to adult students is the prominent role social integration plays in academic success and persistence (Ashar & Skenes, 1993; Bean & Metzner, 1985). If social integration as conceptualized by Tinto and Astin are foundational to understanding academic performance and persistence, then one might assume that adult students, who do not participate in extra and co-curricular activities at similar rates to younger students (Kasworm, 2003c; NSSE, 2008), would not perform as well academically in relation to their younger peers. However, adults tend to perform better academically (Justice & Dornan, 2001), calling in to question the importance of extra and co-curricular activities for the adult student.

In building on Tinto's (1975) theory and adapting it to the adult student, Bean and Metzner (1985) recognized this issue and limited the impact of social integration in their model of nontraditional student persistence. However, research applying Tinto's model found that social integration was important (Ashar and Skenes, 1993), just not in the way it is theorized by Tinto (1975, 1993) and Astin (1984). Ashar and Skenes (1993) found that classroom integration was highly important for the adult student. Additionally, Sorey and Duggan (2008) found that social integration had a greater influence on persistence for adult students than for traditional age students. The connecting classroom concept (Graham et al., 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994) bridges the gap between the theories of Tinto and Astin and their applicability to understanding the adult student experience.

The findings on social integration have significant implications for furthering our understanding of adult student persistence. By integrating the theories of Tinto (1975, 1993) and Astin (1984) with the concepts of Bean and Metzner (1985), and Kasworm (2003c), there is the potential to build a comprehensive understanding of the adult transfer student experience. Perhaps most important, the results from this research might lend further credence to the idea that the role of social integration must be reconceptualized to fit the specific needs of the adult student, and the adult transfer student.

Transfer Research

In reviewing the last 10 years of transfer research, it becomes apparent that there is a scarcity of literature that focuses specifically on adult transfer students. In the areas of academic and social integration of transfer students, Tinto (1975, 1993) has been used a great deal, and to a lesser extent Astin (1984), with no regard to the differences in academic and social integration among so-called traditional and nontraditional students. Of the limited research literature focused specifically on transfer students 25 years and older (Carlan, 2001; Monroe, 2006), neither employ a more comprehensive view of academic and social integration.

Research dealing specifically with adult transfer students might provide the field with what is perhaps the first collection of descriptive statistical information for a large group of adult community college transfer students. The findings from this research have the potential to change the way both community colleges and universities work with adult transfer students. Current services offered by community colleges might be enhanced by catering more to older, mostly part-time students with obligations outside of school. This

research is conceivably more important in informing policies and procedures at the university, as in general these institutions have yet to fully integrate support services for adults into their programs (Kasworm, Sandmann, & Sissel, 2000).

Definition of Terms

The following definitions were applied in this study:

Adaptation to college: how a student is handling the demands of a new college environment (Baker & Siryk, 1984). Term used interchangeably with adjustment to college.

Adult student: the adult student is defined as "those aged 25 and over, who are participating in some type of formal postsecondary instruction" (Paulson & Boeke, 2006, p. v). This is the standard definition of adult used in government education studies.

Community college: a public regionally accredited institution that typically awards an associate degree as its highest degree (Cohen & Brawer, 2003, 2008).

Community college credit hours: number of semester credits earned at the community college before transferring to the university.

Community college GPA: the grade point average a student earned during their time at the community college before transferring to the university.

Continuing-generation college student: students for whom at least one parent had earned a four-year degree or higher were classified as continuing-generation students (Giancola, Munz, & Trares, 2008).

Grade point average (GPA): the measurement used by the community college and university to illustrate the student's academic performance. The GPA is derived by

dividing the total number of grade points (A=4, B=3, C=2, D=1, F=0) earned by the total number of credits attempted. GPA scores can range from 0.0 to 4.0.

Native student: A student who begins his or her postsecondary education at the university and remains continuously enrolled in that institution from initial enrollment (Laanan, 2004).

Transfer credit: The number of semester credit hours earned at the community college and then accepted for credit at the university after transfer (Doyle, 2006).

Vertical transfer: The transfer pathway in which the student transfers from the community college to the university.

Vertical transfer student: a student who begins his or her postsecondary education at a community college and then transfers to a university (Laanan, 2004).

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this quantitative study is two-fold: (a) to provide a comprehensive description of the adult transfer student population and (b) to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of adult vertical transfer students at the university. The research questions guiding this study are:

1. What is the descriptive profile of the adult community college transfer student population?
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4. Are the most influential variables demographic, academic (GPA), social, or environmental?

This chapter presents a review of the relevant research literature pertaining to community college transfer, including the community college mission, the transfer function, research on vertical transfer, and the adult community college transfer student. More specifically, the review focuses on the following areas: (a) theories of retention, non-traditional student persistence, and involvement, (b) the role of the community college and the transfer function; (c) four predominant realms of transfer research,

including institutional, motivation, integration and adjustment, and academic; and (d) performance of adult community college transfer students.

The chapter begins with a review of student involvement theory, non-traditional student persistence theory, and the concept of the connecting classroom and their application to the study of students in transition and transfer students. This is then followed by an overview of the community college mission and a profile of the adult community college student. Lastly, a review of community college transfer research is provided, concluding with a review of research specific to the adult community college transfer student.

Search Methods

A literature search was conducted on ERIC, Academic Search Complete, and Education Research Complete using the following keywords: transfer, community college transfer, adult community college transfer, adult vertical transfer, transfer shock, and adult learner transition. Literature within the past 10 years was selected for this review. Those resources outside of the 10-year timeframe were included when: (a) the resource was a landmark study (the study was considered landmark it if was identified as such in the literature or if it was cited in 10 or more resources selected for this review); and/or (b) the resource was the most up-to-date on a specific topic. Only resources found in refereed, peer reviewed journals or published books were selected for this review.

Involvement, Persistence, and Integration

Involvement

Astin's (1975) theory of student involvement has its underpinnings in a longitudinal study of college student dropouts. In this study Astin found that factors

linked to student persistence suggested their involvement in college. Conversely, factors linked to student departure suggested a lack of involvement. Astin (1984) defined the construct of student involvement in the following way:

> Quite simply, student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience. Thus, a highly involved student is one who, for example, devotes considerable energy to studying, spends much time on campus, participates actively in student organizations, and interacts frequently with faculty members and other students. Conversely, a typical uninvolved student neglects studies, spends little time on campus, abstains from extracurricular activities, and has infrequent contact with faculty members or other students. (pp. 297-298)

Astin intended for the concept of involvement to be behavioral in meaning (Berger & Milem, 1999; Laanan, 2004). Astin (1984) suggested that is not "what the individual thinks" that defines involvement, but "what the individual does" (p. 298). In this same work Astin outlined a theoretical framework of involvement with five basic assumptions:

1. Involvement refers to the investment of physical and psychological energy in various objects.
2. Involvement occurs along a continuum; that is, different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times.

3. Involvement has both quantitative and qualitative features. The extent of a student's involvement in academic work, for instance, can be measured quantitatively and qualitatively.

4. The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.

5. The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement. (p. 298)

Student involvement theory has been used extensively as a conceptual framework to guide studies on the process of student integration in their first year of college (Berger & Milem, 1999), yet its application to understanding the integration of community college transfer students at the four-year college or university is warranted (Laanan, 2004, 2007). In predicting transfer student adjustment and performance at the university, Astin's (1984) theory presumed that transfer students who exhibit high levels of social and academic involvement at the community college would be more likely to exhibit this behavior at the university (Laanan, 2007). According to Laanan (2004), the utility of Astin's theory to the study of transfer students is evident: "If community college transfer students are involved in their social and academic activities at the two- and four-year levels, they will more likely experience a successful or positive academic and social adjustment at senior institutions" (p. 335).

In addition, the theory of student involvement has implications for adult learners. Astin (1993) suggested students who became more involved in campus academic and social activities, and who made connections with faculty members outside of the

classroom, were more likely to persist. Acknowledged in this hypothesis, however, was that the mental and physical energy of students was limited (Laanan, 2004, p. 334). Astin (1984) spoke of the "zero-sum game" of student involvement, implying that the time and energy a student spent on non-educational activities (family, friends, and job) reduced the amount of time and energy devoted to educational development. Adult students generally have responsibilities beyond educational endeavors, including working full-time and parental responsibilities (Knowles, 1984; Merriam & Caffarella, 1999; Merriam, Caffarella, & Baumgartner, 2007), and often times academics are not the top priority (Bean & Metzner, 1985; Berger & Malaney, 2003).

A second principle in student involvement theory suggested institutional policies and procedures can influence the ways in which students spend their time, thus impacting the amount of effort allocated to educational pursuits (Astin, 1984). Financial aid policies, types of extra-curricular activities, available support services, building locations, the curriculum, and instructional procedures were all examples of institutional characteristics that can affect involvement. Given the history of "hegemonic campus policies towards adult learners" (Sissel, Hansman, & Kasworm, 2001, p. 17) that favor full-time, residential, young students, this aspect of student involvement theory and its implications for adult student involvement is both vital and clear.

Tinto's (1975, 1993) model of student departure has become near-paradigmatic in examining undergraduate retention (Berger & Milem, 1999; Braxton, 2000). Tinto too supported the role of student involvement in effecting positive educational outcomes for college and university students. In particular, Tinto (1993) stressed the importance of a clearer understanding of the relationship of involvement and the impact of involvement

on persistence. According to Tinto (1993), the factors of student's educational experiences, goals, intentions, and level of commitment to the institution determined persistence.

Tinto (1975, 2003) outlined two realms of integration, academic and social, that were primary factors in determining a student's decision to persist. In fact, academic and social integration were essential conditions for retention. Lack of integration, academic or social, stemmed from incongruence and isolation. Tinto (1993) defined academic integration as the sharing of academic values, the congruence a student perceived between the student's intellectual capabilities, and goals and the intellectual climate of the institution. Social integration was seen "as interaction between the individual with given sets of characteristics (backgrounds, values, commitments, etc.) and other persons of varying characteristics within the college" (Tinto, 1975, p. 107).

Although Tinto's (1975, 1993) model has been tested and authenticated in numerous studies (Ashar & Skenes, 1993; Pascarella & Terenzini, 1991; Terenzini & Pascarella, 1980), questions remain regarding its applicability to an increasingly diverse student population (Braxton, 2000; Guiffrida, 2004; Tucker, 1999). Researchers applying Tinto's model to adult learners found it might have limited applicability (Rovai, 2003) as it was best designed for analysis of traditional undergraduate students (Rendon, Jalomo, & Nora, 2000). In one of the few research studies to test Tinto's model on adult students, Ashar and Skenes (1993) argued that Tinto's model can only be partially supported when applied to adult students. The researchers reported that social environment and integration had a significant and positive effect on adult learner retention. However, academic integration did not have such an effect.

Persistence

Building on Tinto's (1975, 1993) model of student departure, Bean and Metzner (1985) offered a model to explain attrition of nontraditional students. Bean and Metzner defined nontraditional students as those "older than 24, does not live in a campus residence, or is a part-time student, or some combination of these three factors; is not greatly influenced by the social environment of the institution, and is chiefly concerned with the institution's academic offerings" (p. 485). This model departed from Tinto's in that less emphasis was placed on socialization.

Bean and Metzner's (1985) conceptual model accounted for the reduced role social integration played in attrition for adult students (Summers, 2003). They argued that unlike younger students, adults' support structures (peers, friends, family, and work) were outside the institution, thus leading to limited interaction with groups within the institution. Instead of relying heavily on social integration to explain attrition, Bean and Metzner posited that the adult student's decision to drop out or persist was based on four variables: (a) academic performance as measured by grade point average; (b) intent to leave, which is influenced primarily by psychological outcomes and academic variables; (c) background and defining variables, primarily high school performance and educational goals; and (d) environmental variables, which are expected to have substantial direct effects on dropout decisions. Environmental variables were those variables over which the institution had little to no control, but that might pull the student from the institution. These might include family responsibilities, work hours, finances, and perceived opportunity to transfer.

Bean and Metzner (1985) also included two compensatory interaction effects in their model. An interaction effect is "the differing effect of one independent variable on the dependent variable, depending on the particular level of another independent variable" (Cozby, 1997, p. 314). The first was between “academic variables” and “environmental variables” and the second between “academic outcomes” and “psychological outcomes.” Bean and Metzner argued that adult students with low values for academic variables might persist if environmental variables were positive in direction. Similarly, an adult student would persist in the face of low academic outcomes if psychological outcomes were positive.

Many of the variables influencing persistence in Bean and Metzner’s (1985) model were beyond the sphere of institutional control. These variables, such as family responsibility, work, and commute, strained adult students’ time, resources, and energy. However, Metzner and Bean (1987) in a later publication posited that although social integration variables were not significant for adult students, “institutional commitment directly affected persistence through their impact on perceptions of a postsecondary education’s usefulness in gaining employment, satisfaction, and opportunity to transfer” (Rovai, 2003, p. 7). Institutional policies and procedures, like in Astin’s (1984) theory and Tinto’s (1975, 1993) model, directly impacted adult student persistence in Bean and Metzner’s model, perhaps even more so than younger students.

Various studies of both young and adult students supported Bean and Metzner’s (1985) persistence model. Jeffreys (2004) cited the importance of environmental variables identified by Bean and Metzner in understanding nursing student persistence. In a review of research using instruments derived from the model, Jeffreys observed that

environmental variables were more influential in their impact on retention than academic variables. Jeffreys also found that environmental variables influenced both traditional age and adult students, but the manner of impact was different.

There were two studies of note that demonstrated limitations of the Bean and Metzner (1985) model. Ashar and Skenes (1993), in a study applying Tinto's (1975) model to adult students, showed "that classes that were professionally more homogeneous, and thus socially more integrated, and smaller classes lost fewer students than less socially integrated and larger classes" (p. 96). The findings of this study demonstrated that social integration was significant, even for the adult student. Through structural equation modeling, Stahl and Pavel (1992) discovered that Bean and Metzner's model was a weak fit when assessing community college data. However, two weaknesses of the Stahl and Pavel study must be considered when assessing the researchers' conclusions. One, Stahl and Pavel provided no descriptive statistics, so it was difficult to determine if the age of subjects influenced the weak goodness of fit measure. Second, all participating subjects were White, calling into question the representativeness of the sample. However, studies pointing out limitations in Bean and Metzner's model illustrated the importance of using this model in conjunction with Tinto's in providing a more complete view of adult student persistence in community colleges and universities.

Re-conceptualizing Involvement and Social Integration for Adult Students

Tinto's (1975) model of student departure and Astin's (1984) theory of student involvement have made significant contributions to our understanding of postsecondary student persistence (Berger & Milem, 1999; Braxton, 2000). However, these

contributions are limited in application to adult students as they are based on younger, full-time, residential students (Bean & Metzner, 1985; Donaldson & Graham, 1999; Kasworm, 2003c; Kasworm & Blowers, 1994; Philibert et al., 2008). As viewed by these theories, adult students are high-risk, secondary, and not engaged in the college environment. Bean and Metzner (1985) recognized that social integration and involvement as conceptualized by Tinto and Astin were limited in their application to understanding adult persistence. However, Bean and Metzner simply reduced the role that social integration as defined by Tinto and Astin played in persistence for adult students. Although the nontraditional student persistence model rightly limits the effects of adult learner participation in extra-curricular activities on persistence, in so doing it wrongly portrayed that social integration is less important for the adult student. This is not the case.

Unlike traditional students, involvement in the classroom more accurately conceptualizes social integration for the adult student (Ashar & Skenes, 1993; Graham et al., 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994). For the study of adult transfer students, social integration into the university would be related not only to involvement in extra-curricular activities, but also involvement and engagement in the classroom environment. The concept of the "connecting classroom" (Graham et al., 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994) provides a useful lens by which the works of Tinto (1975) and Astin (1984), along with the Bean and Metzner (1985) model, might be bridged to better understand the academic and social integration of adult transfer students at the university.

Connecting classroom. Adults generally spend less time on campus and are thus less involved in extra-curricular activities compared to their younger peers (Donaldson & Graham, 1999; Kuh, 1993; National Survey of Student Engagement [NSSE], 2008). The central path for social engagement and for negotiating meaning for learning is the classroom (Philibert et al., 2008, p. 586). In a comprehensive study of patterns of learning involvement for adult undergraduate students, Kasworm and Blowers (1994) found that only a select few adult students valued participation in traditional on-campus activities, whereas for the majority of adults the classroom was the root of the collegiate experience. The concept of the connecting classroom suggests that adult learners utilize the classroom as the fulcrum of the collegiate experience. Classroom related learning and in-class related relationships with faculty and peers are significantly important for adult learners. Additionally, evidence suggests that adult students value community within the classroom (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999, Justice & Dornan, 2001; Rovai, 2002).

Types of connecting. Adults develop a sense of connection in the classroom in one of two ways. Connection can be characterized as developing community through in-class relationships with faculty and peers. Connection can also be characterized as encompassing the relationship of the student's academic knowledge with life-world knowledge structures (Graham et al., 2000; Kasworm, 2003a, 2003c, 2008; Kasworm & Blowers, 1994). The life-world knowledge structures include work, family, and community settings, or the different contexts in which adults live and work (Philibert et al., 2008, p. 586; Kasworm, 2003c). Both understandings possess a social and academic

component, and each can positively or negatively impact adult learner involvement and persistence.

Whereas immersion in a campus community is important socially and academically for traditional students (Astin, 1984; Tinto, 1975, 1993), involvement in a classroom community is important for the adult student. Adults oftentimes utilize the classroom differently than traditional students. Adult learners can be more verbal, lead in group activities, are more task-oriented in class projects, and relish in-class interaction with faculty and peers (Kasworm & Blowers, 1994), thereby using the classroom to fulfill the need for social interaction and involvement. Although social integration beyond the classroom is important for the adult learner (Sandler, 2000), in-class relationships through a connecting classroom truly defines involvement and integration for the adult student.

Connecting the adult learner's academic world to life-world knowledge structures is another facet of the connecting classroom. Adult learning theory has long acknowledged the importance of connecting classroom learning to previous life experiences (Dewey, 1948; Knowles, 1984; Marienau & Fiddler, 2002). Education for the adult learner requires active participation and a connection to the entirety of life's experiences (Knowles, 1984). Practical application of learning is also important as adults tend to connect what they are learning in the classroom to future life roles (Donaldson & Graham, 1999; Merriam & Caffarella, 1999; Tweedell, 2000). Adults too prefer teaching methods that are experiential and practical in nature (Cross, 1981; Knowles, 1984; Kolb, 1984; Merriam & Caffarella, 1999). A suitable classroom environment for adult learner

involvement, then, is one that facilitates the connection of the academic and life-world knowledge structures of the adult student.

Knowledge voice. Kasworm (1995, 2003c) identified five belief structures of meaning making in the classroom, called knowledge voices, that embody adult students' understanding of the nature of learning and knowledge "in relation to the classroom and their adult lives" (2003c, p. 15). Involvement in the classroom is reflected through these knowledge voices. Adult learner beliefs about communities of learning are connected to judgments of how they engage, or do not engage, in academic learning in relation to their life-world knowledge. Learners who do not experience congruence between real world knowledge and academic knowledge are not as involved in academic-related learning communities (Kasworm, 1995). This is reminiscent of the congruence a student perceives between the student's intellectual capabilities, and goals and the intellectual climate of the institution (Tinto, 1975), yet here the classroom for the adult student is a microcosm of the overall institutional campus. Built into the premise of knowledge voices is the dichotomous nature of knowledge, with academic and real world knowledge being two distinct forms of learning and knowing.

The five knowledge voices Kasworm (1995, 2003c) identified are: (a) entry voice; (b) outside voice; (c) cynical voice; (d) straddling voice; and (e) inclusion voice. The meaning structures of the entry voice are based on involvement and engagement for learning about how to be successful in the classroom. Entry voice students have a dominant concern about learning how to successfully pursue academic knowledge to the exclusion of their life-world knowledge and adult life engagements. For these students,

developing community in the classroom would be advantageous only if incorporated classroom activities aid them in attaining academic success.

The outside and cynical voices represent students situated in real world knowledge who view knowledge and action through the lens of their current adult life roles. These individuals make a clear distinction between practical learning for effective application in their life-world of knowledge and adult roles and required learning for a grade. Academic knowledge does not guide the learning and engagement of these students. For these students, involvement and engagement in a classroom learning community is dependent upon how reflective the learning community is to their current adult roles, such as a computer programmer that would only value a learning community with similar individuals. Those cynical voice adult students are "dismissive of any engagement in the collegiate world beyond the minimum presence to survive and complete coursework" (Kasworm, 2003c, p. 17).

A straddling voice student continues to have a dichotomous view of knowledge and learning, yet they enhance their life-world meaning structures when they are able to apply academic knowledge to what they know from life experience (Kasworm, 1995, 2003c). Conversely, these students draw on life experience to enhance academic knowledge. The straddling voice student appreciates both types of knowledge and sees the relationship between the two realms of knowledge. The inclusion voice student sees no distinction between real world and academic knowledge. These students believe all knowledge is integrated, using both real world and academic knowledge to form a broader, unified perspective. Both straddling and inclusion voice students value and are

involved in collegiate activities that provide opportunity to collaborate with peers and faculty members.

Each of the knowledge voices provide a glimpse into how the belief structures of adult students impact involvement in the classroom, how involvement might be facilitated, and how to better understand involvement based on individual approaches to knowledge. This also demonstrates the complexity of in class involvement for the adult student, showing that it is not as simple as group work and discussion. Involvement goes deeper than that. Involvement for the adult student is not only a behavioral concept, as proposed by Astin (1984), but is psychological and social in that the adult student's life role(s) and notions of types and value of knowledge influence the value placed on classroom community (Donaldson & Graham, 1999, Philibert et al., 2008).

Few research studies examine the application of the connecting classroom concept to understanding the importance of classroom experiences of the adult undergraduate student. Drawing on the earlier work of Kasworm and Blowers (1994) and Kasworm (1997), Donaldson and Graham (1999) operationalized the connecting classroom concept as the central component of their Model of College Outcomes for Adults. In testing the model, Philibert (2005) and Philibert et al., (2008) found that adult students do utilize classroom experiences differently than their younger peers and that evidence suggested the classroom was the focal point of the adult undergraduates' college experience.

Situated learning and the connecting classroom concept. Although research specific to applying the connecting classroom concept is scarce, research on situated learning (Lave & Wenger, 1991) and communities of practice (Lave & Wenger, 1991; Wenger, 1998; Wenger, McDermott, & Snyder, 2002) shows the importance of this

concept of involvement for the adult student. According to Graham et al., (2000), learning from the connecting classroom perspective is viewed as both contextual and situated. This perspective suggests that important adult life contexts of family, work, and community interact with collegiate learning experiences as enhancers or detractors of learning. Graham et al. also contend that the connecting classroom concept suggests adult learning experiences are generative and reconstructive, modifying the learner's knowledge base, but also "impact[ing] their sense of self, of action in the world, and of their connection to the broader cultural context" (p. 10).

The concept of the connecting classroom is socio-cultural in nature (Graham et al., 2000). For the adult learner, then, the classroom might act as a practice community, and it is through this practice community that knowledge can be generated and reconstructed. As indicated by the knowledge voices listed above, knowledge interpretation and application at the individual, psychological level influences and is influenced by the social context within which the adult student operates. Thus, knowledge construction in the connecting classroom concept draws from the understanding of situated learning in that social roles and relationships, the adult's life roles, shape classroom learning and impact the involvement level of adults in the classroom. Learning is not solely defined through the roles of expert and learner, but "rather it is learning in community in social participation (Graham et al., 2000, p. 13).

In a three part study to identify the critical characteristics of a situated learning environment, Herrington and Oliver (2000) proposed nine classroom design elements that foster learning environments best suited to transfer usable knowledge, including (a) authentic contexts, (b) authentic activities, (c) access to expert performances, (d) multiple

roles and perspectives, (e) collaborative construction of knowledge, (f) reflection, (g) articulation, (h) coaching and scaffolding, and (i) authentic assessment (p. 25-26). These design elements can be found within the four key components Graham et al. (2000) put forward in describing the connecting classroom: (a) adult-oriented environment, (b) learning of expertise, (c) nature of the teaching and learning process, and (d) multicultural learning.

Much of the research literature on situated learning and communities of practice deals specifically with workplace learning. However, in critiquing Lave and Wenger's work, Fuller, Hodkinson, Hodkinson, and Unwin (2005) applied the community of practice concept to formal educational settings. Avis and Fisher (2006) argue that community of practice development in formal educational settings can lead to the transformation of identity, which is the intent of the connecting classroom (Graham et al., 2000; Kasworm, 2003; Kasworm & Blowers, 1994). The connecting classroom concept is in part grounded in the concepts of situated learning and can be more clearly understood through this lens.

The Community College

The Community College Student

Enrollment in community colleges has significantly increased over the last four decades. From 1965 to 2005, community college enrollment grew from over one million students to over six million (National Center for Education Statistics [NCES], 2007). Community colleges now serve nearly 50% of all students enrolled in public higher education (Cohen & Brawer, 2003, 2008; Laanan, 2001). This trend of a growing student

population shows no sign of slowing as community college enrollment is projected to reach 7.5 million by 2018 (Planty et al., 2009, p. 22).

Community colleges not only serve a large student population, but a diverse one as well. Community colleges enroll students with a wide variety of educational needs (AACC, 2011), and from various racial, gender, cultural, and socio-economic backgrounds, including 47% of African American students, 56% of Hispanic students, and 57% of the Native American students enrolled in higher education in the United States (AACC; Geigerich, 2006). The community college student is more likely to be female, Black or Hispanic, and from a low-income family (Horn & Nevill, 2006). In terms of total enrollment status, 59% of students are enrolled part-time compared to 41% full-time (AACC).

Roughly 60% of adults enrolled in undergraduate coursework are enrolled in 2-year colleges, including community colleges (Laanan, 2003). The average age of the community college student is 28 (AACC, 2011). Over 43% of community college students are 25 years old or over, with 12.2% 25-29 years old, 8.7% 30-34 years old, and 22.5% above the age of 35 (Phillippe & Sullivan, 2005, p. 33; Planty et al., 2009). Older adults make up a growing student demographic in the community college. Approximately 15% of adults 40 years and above are enrolled in community colleges (Laanan).

The literature reveals several factors that have led to the increasing number of adult students. Compton, Cox, and Laanan (2006) identified three major factors that have led to an increase in adult enrollments: (a) many regions of the United States have decreasing high school graduates, making adult students a market to be tapped; (b) the

decline of the blue-collar sector of the economy; and (c) the changing norms in society, which was considered the single most important contributor increasing the number of adult women who have enrolled in post-secondary education (p. 74).

Hardin (2008) argued many adult students enroll in community colleges for their first experience in higher education because community colleges provided the "access, affordability, and convenience adults require" (p. 49). In addition, adult students with a degree enrolled to enhance skills, change careers, or partake in leisure or lifelong learning. Hardin also identified characteristics that put adult students at risk of being unsuccessful. These characteristics included: (a) delaying enrollment into higher education until adulthood; (b) enrolling part time; (c) working full time; (d) being financially independent; (e) being financially responsible for others; (f) having family responsibilities; (g) having academic deficiencies (p. 50).

Evolving Mission of the Community College

The community college has been a major influence in expanding higher education opportunities to historically underserved segments of the population (Townsend, 2009). Cohen and Brawer (2008) defined the community college as "any institution regionally accredited to award the associate in arts or the associate in science degree as its highest degree" (p. 5). There are a total 1,195 community colleges operating in all 50 states in the United States serving over 11.5 million students; this number includes 987 public institutions, 177 independent institutions, and 31 tribal colleges (AACC, 2011). Community college systems vary greatly from state to state in structure, program, and size, from California having the largest system consisting of over 100 institutions, to states like Rhode Island and Vermont with one community college each. The nation's

community colleges play an essential role in U.S. higher education by offering a variety of educational opportunities for a diverse student body (Laanan, 2003).

It is important to review the history and development of the community college to understand the institution, and to grasp its impact on U.S. higher education. The initial function of the community college was to provide a liberal arts education to working class students, or those with limited means, for the purpose of transfer to a university for further study (Cohen & Brawer, 2008; Diener, 1986; Dougherty & Kienzl, 2006; Gardner, 1996). The role of the community college then expanded to provide developmental education, vocational/technical training, continuing education courses, and other educational needs of the community (Cohen & Brawer, 2008).

Ratcliff (1994) described the evolution of the community college as "seven streams of educational innovation" (p. 4). The author argued that each community college today has its underpinning in several streams, which has led to confusion over institutional mission and classification as a junior or community college. The seven streams Ratcliff posited were (a) local community boosterism, (b) the rise of the research university, (c) the restructuring and expansion of the public educational system, (d) the professionalization of teacher education, (e) vocational education, (f) the rise of adult, continuing, and community education, and (g) open public access to higher education.

Community boosterism and the rise of the research university were both early streams in community college development. Many early colleges were established to provide evidence of cultural stature for communities. Communities would work together to build colleges, and if that community were predominantly of one religious affiliation, the college might also follow this religious affiliation. Community colleges, or junior

colleges, were also instituted and propagated by research universities as a means to relinquish the responsibility of educating freshman and sophomore students. Later in the evolution of community colleges, restructuring of the education system and the need for professional education drove the proliferation of more community colleges and to greater diversity of programs. Providing community services such as adult and continuing education, as well as open access to traditionally underserved populations marked the last stream in community college development. The confusion in mission and nomenclature, then, stemmed from the establishment of a variety of community colleges, junior colleges, technical colleges, and professional institutes, each constructed within specific streams of community college development, but not in a systematic, uniform way (Ratcliff, 1994).

Deegan and Tillery (1985) classified four generations in the evolution of the community college. These generations span from the 1900's to the 1980's and encompass major developmental milestones in community college history. The generations were as follows: Generation I: Extension of the High School (1900 – 1930); Generation II: The Junior College (1930-1950); Generation III: The Community College (1950-1970); and Generation IV: The Comprehensive Community College (1970 – present). Similarly, Diener (1986) identified four distinct stages, or parts, in the development of the community college: a) Challenging the Educational Status Quo; b) Early Junior College Developments; c) From Junior to Community College; and d) Recurring Issues.

Challenging the educational status quo. In *A Documentary History of the Junior and Community College Movement,* Diener (1986) compiled and presented documents authored by or about influential individuals who cultivated an era of reform

for U.S. higher education. In the late 19th and early 20th centuries, education and business leaders began to question the effectiveness of secondary and postsecondary education in the U.S. In challenging the educational status quo, Henry Tappan, then president of the University of Michigan, argued for a tiered education system in which colleges would prepare individuals for the university. The colleges were "necessary in that they serve[d] to identify, screen, and prepare" students for a rigorous university education (Diener, 1986, p. 19). Administrators at pre-Civil War University of Georgia reorganized to separate the responsibilities of preparing minds, or general education, and pursuing knowledge. A college institute was designed to offer what might now be considered general education studies. Although many credit the institutionalized distinction between the junior and senior colleges to William Rainey Harper (Monk-Turner, 1998), this move at the University of Georgia, according to Diener, was a precursor to the junior college-senior college configuration later instituted by the University of Chicago.

In an 1871 special report on the condition and improvement of public schools in Washington, D.C., Henry Barnard, the first U.S. Commissioner of Education, recommended public education include schools which would take up the first two years of college general education and vocational and professional training. The focus on vocational and technical aspects of a two year college was also championed by businessperson Alan C. Lewis, the founder of one of the first junior colleges in the U.S. However, Lewis felt that there must be a balance between general and vocational education, and a good collegiate program would prepare students in both (Diener, 1986, p. 43). Lewis was not only innovative in his approach to higher education, he also wanted to expand higher education to those not afforded access by the system at that

time, particularly women. Lewis was quoted as saying he deplored "the lack of training that leaves young women, in so many instances, utterly without resources" (Carman, 1903, as cited in Diener, p. 44).

Early junior college developments. William R. Harper, president of the University of Chicago, along with Stanford University President David Jordan, brought about the next wave of innovations in early junior college developments. Like Tappan, Harper and Jordan were more believers in the prominence of the university than proponents of the junior college. Harper saw the junior college as a way to separate youthful, immature freshman and sophomores from the more mature juniors and seniors that belonged in the university (Diener, 1986). In addition to dividing the upper and lower divisions, Harper saw the development of dual institutions as a means to limit access to upper division coursework from those he felt did not belong in the university (Cain, 1999).

Harper's overarching goal was to construct a system of independent 2-year colleges that were affiliated with universities by preparing freshman and sophomore students for university study. He also saw the 2-year system as a means of strengthening some of the failing universities of the time; Harper recommended struggling universities become 2-year junior colleges and focus on preparing students for the next level. Two years prior to Harper's recommendation of transforming struggling universities into 2-year colleges the Reverend J.M. Carroll, president of Baylor University, proposed smaller Baptist universities reduce their curriculum to general education and Baylor would accept their students to provide upper division work (Ratcliff, 1994).

A.F. Lange, director of the University of California School of Education, argued that university presidents such as Harper were practicing a "kind of educational chauvinism" by manipulating the community colleges to meet their own narrow interests (Diener, 1986, p. 67). Lange instead wanted community colleges to be a capstone part of secondary education, from junior high to high school to junior college. Leonard Koos, professor of education at the universities of Washington, Minnesota, and Chicago, also felt that 2-year colleges were best made part of public, secondary education and not fall within the higher education system. Koos felt that junior colleges could serve a dual purpose of providing college-level general education courses and the beginnings of professional education.

From junior to community college. Eventually the idea of the 2-year college being part of higher education won out, partly because identification with the high school caused the junior college to be perceived as substandard, and schools began abandoning the high school model to form a collegiate identity (Cain, 1999). By the 1930's and 1940's, junior colleges increased in numbers and variation. The economic turmoil of the 1930's led to the development of emergency junior colleges meant to focus on meeting the needs of individual communities, a unique quality of the 2-year college (Diener, 1986). The decades from 1940 to 1960 saw even further expansion of the junior college and more so the community college, a comprehensive, low-cost institution.

The federal government played a large role in the evolution from the junior to community college (Diener, 1986, Ratcliff, 1994). After World War II, the Truman administration formed the Commission on Higher Education, which highly recommended the public 2-year community college. The Truman Commission Report called for the

creation of a network of locally controlled, low-cost public institutions that would serve as cultural centers provide comprehensive program offerings with an emphasis on serving the areas in which they were located (U.S. President's Commission on Higher Education, 1947). It was also recommended that the new 2-year community college should "break away from its almost total fascination with preparing students for transfer to senior colleges. It should develop a series of 2-year or terminal programs, preparing students for lives of citizenship and work" (Diener, 1986, p 131).

The term junior college began to apply more to lower division arms of private universities or independent 2-year colleges, whereas community colleges were publically supported institutions that offered various programs (Cohen & Brawer, 2003; Gleazer, 1994). The comprehensive community college became the focal point for access to higher education in this time period. The GI Bill of Rights was passed to provide assistance to World War II veterans who hoped to pursue higher education. The GI Bill provided federal aid to students on a large scale, which in turn began to eliminate the economic and social barriers to attending college (Vaughn, 2000). The Facilities Act of 1963 allowed local communities the opportunity to build new college campuses and/or expand current facilities. The new comprehensive mission of the community college not only provided opportunities for liberal arts education, but expanded the availability of vocational, remedial, and adult education programs (Wassemer, Moore, & Shulock, 2004).

Recurring issues. According to Diener (1986), the golden age of the community college arrived in the 1960's and lasted into the early 1980's. The number of institutions increased from hundreds to thousands and the number of students served expanded from

thousands to millions. However, there continued to be issues associated with the community college, most notably the issue of access. Intertwined in the community college ideal of open access to all was, and still is, the community college transfer function. College transfer was one of the first issues facing junior colleges in the late 19th century and persists as a major issue today (Diener, 1986; Cohen & Brawer, 2008; Eaton, 1994). Expanding educational opportunity and attainment in the U.S. in large part depends upon upward mobility among institutions, institutional cooperation, and policies and procedures that aid and support the transfer of credits among colleges and universities (Diener, 1986).

The Transfer Function

In a review of 30 years of research evidence, Pascarella and Terenzini (2005) concluded that " students seeking a bachelor's degree who begin their college careers in a 2-year public institution continue to be at a disadvantage in reaching their educational goals compared with similar students entering a four-year college" (p. 381). However, more recent research showed that the negative impact of being a transfer student did not exist, and lower graduation rates were more a function of the individual, not the institution (Melguizo, 2009). Attempts to comprehend the multifaceted issue of community college transfer are obscured by the diversity of transfer patterns (Townsend, 2001). Movement from one institution to another can no longer be defined as a singularly vertical process (Tobolowsky, 1998). There are two predominant categories of transfer to identify when considering the movement of students relative to the community college, reverse and vertical transfer. Reverse transfer is defined as students that begin their education at a university but later transfer to a community college (Wassemer,

Moore, & Shulock, 2004). Vertical transfer, the more "traditional" pattern of movement for community college students, is defined as student movement from one community college to one university (Kozeracki, 2001, p. 66). Although the amount of reverse transfer students is on the rise (Wassemer et al.), the focus of this review is on vertical transfer.

The vertical transfer pathway remains one of the primary functions of the community college (Cohen & Brawer, 2008; de la Torre, 2007; Tatum, Hayward, & Monzon, 2006; Wellman, 2002). According to Cohen and Brawer (2008) the academic transfer function was intended to fulfill three institutional purposes: (a) a popularizing role, (b) a democratizing pursuit, and (c) a function of conducting lower-division general education courses for universities (p. 22). The popularizing role was to have the result of promoting the benefits of higher education to the individual, thus encouraging more people to enroll. The democratizing role established the community college as the entry point to higher education, and eventually the baccalaureate degree, for many individuals, including a disproportionate amount from groups underrepresented in higher education. Offering lower-division general education courses did not relieve universities of the responsibility of working with freshman and sophomore students, as was originally intended by some early junior college advocates (Diener, 1986), but it did allow universities to maintain selective admissions requirements and only work with those freshman and sophomores that they wanted.

Literature about transfer students can be categorized into four main areas: (a) academic outcomes, (b) institutional variables, (c) student involvement, and d) academic/social integration (Woosley & Johnson, 2006, p. 25). Much of the academic

research focuses on transfer shock, an appreciable decline in GPA transfer students experience in their first semester at the university (Hills, 1965). Additional research on academics examines outcomes, such as persistence, graduation rates, and the likelihood to transfer. Research on institutional variables tends to focus on faculty involvement, institutional environment, and administrative policies. Student involvement and adjustment research examines the impact of student engagement and psychological and social integration of transfer students at the university.

Academic Performance

Transfer shock phenomenon. The largest body of research on community college transfer students focuses on academic performance as measured by GPA, and usually compares transfer students to native students, those that begin their studies at the university. Most of the early research focused on the transfer shock phenomenon, a drop in GPA in the first semester after transfer. Hills (1965) reviewed research from 1928 through 1964 on the success of junior college transfers and found that transfer students experienced an appreciable drop in GPA in their first semester at the university. Hills found that 44 out of the 46 studies reviewed revealed transfer shock, and that many studies showed native students performed better academically, and that transfer students took longer to graduate than their native counterparts.

Keeley and House (1993) examined transfer shock in a different manner than previous studies, looking at transfer students as a heterogeneous group instead of homogeneous. Keeley and House sought to examine the occurrence of transfer shock, and if the occurrence and extent of transfer shock differed among variables such as class level, gender, ethnicity, college major, residence status, and age. The researchers also

took a longitudinal approach, examining a cohort of sophomore and junior transfers who entered Northern Illinois University in fall of 1989 and were enrolled through spring 1991. The study examined GPA at five points in time and explored the aforementioned variables as explanatory in the degree of transfer shock experienced.

Keeley and House (1993) found that age was an important factor in academic success and avoidance of transfer shock. Transfer students aged 25 years and above experienced little transfer shock. Sophomore transfers aged 25 and above actually experienced an increase in GPA, sometimes referred to as transfer *ecstasy*. Adult transfer students with junior status entered the institution with a mean GPA of 3.334 and by their fourth term held a mean GPA of 3.322. Although this study showed that adult community college transfer students were successful at the senior institution, and in this case more successful than traditional aged students, there was no indication of what happened in the adjustment process.

Persistence and graduation rates. Additional research did not point to age as a significant factor in academic performance at the university as measured by persistence. Length of time to graduate was one means by which researchers were able to analyze the academic performance of transfer students. Glass and Bunn (1998) used length of time to graduate to examine the academic performance of community college transfers at 12 senior institutions in North Carolina. The researchers surveyed 173 transfer students. Of the sample, 33.1% lived with a spouse and were classified by the researchers as indicative of adults with major responsibilities outside of academics. Glass and Bunn did not find a significant relationship between age and time to graduate.

Glass and Bunn (1998) did find a significant relationship between employment status and time to graduate. This was an interesting assessment as it stands to reason that a majority of transfer students employed full-time were classified as adults by the researchers. It was not clear if the researchers controlled for age when analyzing employment status. It was also not clear if the researchers controlled for employment status when analyzing age. Consequently, there was no indication of the strength of relationship between employment and time to graduate with age controlled, or if the relationship changed with age as a contributing factor.

Zhai and Newcomb (2000) identified factors related to the academic performance and retention of transfer students at universities. Using descriptive and correlation statistics to examine data collected via questionnaires from existing records, they found that academic deficiency was a major reason why transfer students did not persist. The researchers also found that younger transfer students tended to persists to a greater degree than older students. The best indicator of persistence was academic performance at the university.

Because GPA was a strong indicator of persistence, Zhai and Newcomb (2000) examined what factors were related to GPA. The researchers found that certain demographic characteristics, including age, were not significantly related to GPA earned at the university. Although Zhai and Newcomb concluded that younger transfer students were more likely to persist, they did not mention if any significant relationship existed between age and persistence. This study contradicted previous research that showed age was an indicator of academic success, both at the community college and university

(Keeley & House, 1993), but did corroborate other findings that older transfer students did not persist at the same rate as younger students (Ishitani, 2008).

Gao, Hughes, Michael, and Fendley (2002) developed structural equation models to examine differences between transfer and native students in terms of persistence to graduation and retention rates. The effects of first term GPA, second term GPA and cumulative GPA, and demographic background information on gender, ethnicity, age, and residency on graduation and retention were examined. The researchers found that transfers had significantly higher graduation rates than did native students, a contradictory finding to other research comparing transfers to native students.

Gao et al. (2002) did not find student ethnicity, gender, or age to have a significant effect on graduation or retention rates. Similar to Glass and Bunn (1998), other factors such as amount of credits, which were potentially a function of being an older student, were found to have a significant impact on graduation and retention. Gao et al. discussed in detail the positive impact GPA had on graduation and retention, but did not discuss academic performance in terms of GPA for students based on demographic factors like ethnicity or age. It would be worthwhile to investigate if older transfer students in this sample performed on par with or better than native students as other studies have found (Keeley & House, 1993), and if this relationship was obscured by the high level of significance between GPA and graduation and retention rates.

Utilizing an institutional data set and event history modeling, Ishitani (2008) conducted a longitudinal study examining persistence behavior for transfer students who matriculated during different academic years. Event history modeling is a form of study in which a socially significant event (change in marital status, loss of a loved one, or

other significant life event) is the unit of inquiry instead of the individual. Specifically, Ishitani looked at the impact of GPA over time to see if there was a consistent affect on persistence. The data revealed that transfer students aged 21 to 25 years were 1.9 times more likely to drop out than traditional aged transfer students in the first semester, and 2.6 times more likely to drop out in the third semester (p. 412). Those students aged 26 years and over experienced an even higher risk of departure than the 21 to 25 age group. Ishitani argued that older students, those aged 26 years and above, were most vulnerable to departure in the third semester. They were 3.8 times more likely to drop out than traditional aged students in the same semester.

This study was limited in that it did not account for what happened to students after their first departure (Ishitani, 2008). There was no differentiation made between those students that dropped out and those that stopout, meaning the student had a break in enrollment but returned to the institution. Although students that stopout, especially those early in their college career, tend to be at a higher risk of not persisting (Johnson, 2006) there was no way of knowing the true persistence rates of this sample because reentries were not included. As adult students tend to follow nontraditional enrollment patterns (Council for Adult and Experiential Learning [CAEL], 2000) and stopout behavior is characteristic of nontraditional aged students (Hagedorn, 2005, p. 27), it was plausible that the participants in this study might have reenrolled, therefore leading to an increased persistence measure. Additional investigation of this sample was warranted to reveal if older transfer students had a tendency to reenter and continue on the path to degree completion.

Likelihood to transfer. Hagedorn, Cypers, and Lester (2008) combined the theories of rational choice, integration, and student departure as a framework to retrospectively examine the factors that influence community college transfer students' success in transferring to a university. The sample was drawn from 5,000 students from the Los Angeles Community College District, with transcript analysis and a questionnaire used to gather data. This study broke from previous studies in that community college students were compared to reveal differences in students who transfer from those who do not. All students in the sample had indicated a desire to transfer when entering the community college.

Hagedorn et al. (2008) discovered that transfer is highly related to age. Even though older students perform better academically at the community college, they were less likely to transfer to a university. This was consistent with other research that found that older students performed better academically (Hagedorn, 2004; Laanan, 2003), but were less likely to transfer (Dougherty & Kienzl, 2006; Peter & Forrest Cataldi, 2005). If degree aspirations of traditional and nontraditional aged students in this sample were equal, then the question remains as to why adults transferred at lesser rates. One limitation, however, was that transfer possible students were identified as those students who expressed a desire to transfer (Hagedorn et al., p. 659), but student actions were not considered in making this designation.

Adult students academic performance at the undergraduate level is on par or better when compared to their traditional aged peers (Justice & Dornan, 2001; Moffatt, 1993), and although they express a desire to transfer, adult students are not as likely as their traditional aged peers to realize that goal (Dougherty & Kienzl, 2006; Peter &

Forrest Cataldi, 2005). Once at the university, adult transfer students are less likely to experience transfer shock and outperform their traditional aged transfer student and native student peers (Keeley & House, 1993). There was conflicting evidence as to whether age was significant in persistence to graduation for transfer students. Adult transfer students were at high risk of dropping out, with those aged above 26 experiencing the highest dropout risk (Ishitani, 2008). However, some studies indicated age was not significant in its effect on GPA or persistence to graduation (Gao et al., 2002; Zhai & Newcomb, 2000). A focus broader than academics is justified in understanding the adult transfer student experience.

Institutional Variables

Research on the impact of institutional variables on the transfer process and transfer student success has various implications for this study. The findings and recommendations of these studies provide a contextual framework from which the perceptions, experiences, and performance of adult transfer students can be illuminated. It is important to understand faculty collaboration, involvement, and knowledge when asking questions about adult transfer student experiences with faculty at the community college and university. So too is it important to review administrators' perceptions regarding the policies set for transfer students at their own institutions. It is fundamental to grasp institutional policies and procedures when seeking to understand institutional support, or lack thereof, and its impact on the adjustment process and academic performance of adult transfer students. Each institution shows signs of a unique culture, whether it is a transfer or non-transfer oriented community college or a teaching or research centered university. In addition, some institutions may be better equipped to

support adult learners. Adult transfer students traverse these separate, oftentimes differing cultures, which makes institutional impacts vital in examining the adult transfer student experience.

Faculty and transfer. Much of the research on institutional impacts on transfer students focused on faculty. Cejda (1994), in a study examining the effects of faculty collaboration on transfer shock, a first semester drop in grade point average (GPA) at the university, found that collaboration between departmental faculty at the community college and receiving institution significantly decreased the likelihood of transfer students experiencing transfer shock. Data were collected and examined from two groups of students, education majors and majors other than education, from the same community college. Education majors transferred in a field of study in which faculty collaboration existed. Faculty collaboration did not occur between institutions for other majors.

Although Cejda's (1994) findings revealed transfer shock in both groups, the decrease in GPA for education majors was significantly less than the decline for other majors. Education majors experienced a mean GPA decline of .04315 with other majors experiencing a GPA decline of .36175. Faculty collaboration was also found to influence persistence. Nineteen of 20 education majors graduated or remained enrolled compared to three out of the 12 in other majors. Based on the findings of this study, Cejda argued that faculty collaboration should be encouraged as a means to reduce or eliminate transfer shock. In addition, the author proposed administrators support faculty collaboration to improve the transfer process, assess transfer effectiveness, and to facilitate baccalaureate degree attainment by community college beginners (p. 197).

Cejda (1994) did not consider the type or amount of faculty collaboration, or if the collaboration was an institutionalized process or something more informal. In addition, subsequent research on the relationship of transfer shock to college major has shown that education majors tend to perform better than those students in majors such as business, mathematics, and science (Carlan & Byxbe, 2000). This called into question whether the results in Cejda's (1994) study were a function of faculty collaboration, a function of college major, or somewhere in between.

In a case study utilizing transfer student perceptions to examine the transfer process itself and the academic environment into which students transfer, Townsend (1995) also found that community college and university faculty members might affect transfer student performance at the university. Townsend interviewed 44 students that had begun their studies at a community college. Seven students had graduated from the university, 16 were no longer attending the university, and 21 were still enrolled. The sample for this study was diverse racially and ethnically, but there was no mention of the age of participants. Townsend found that the student-centered approach employed by some community college faculty members as a means to raise self-esteem added to the shock transfer students experienced in facing differing academic standards at the four-year level. Transfer students described university faculty as having a "survival of the fittest" attitude. Some experienced faculty that were reluctant to provide students direct assistance if they did not possess the appropriate academic skills.

Townsend (1995) offered a few recommendations for how both community college and university faculty might better serve transfer students. First, community college faculty might consider increasing writing assignments and essay test to better

prepare students for the academic rigors of the university. In addition, community college faculty should more openly discuss the probability of a more rigorous academic environment at the university. Townsend argued for university faculty members to reevaluate their role and responsibility to the teaching process. Additionally, university administrators should reexamine institutional commitment to assisting students whose academic background may be lacking in specific content areas.

Tatum, Hayward, and Monzon (2006) employed a mixed-methods study to collect information from community college faculty regarding their knowledge of and involvement in the transfer process. The study involved a two-phase process: (a) administering a questionnaire to obtain data on faculty knowledge and support activities regarding the transfer function, and (b) a focus group exercise that generated a model of the faculty role in the transfer process. A total of 141 respondents took part in this study. The researchers found that the amount of faculty involvement in the transfer process was low. A typical faculty member spent only 30 minutes per semester of class time discussing transfer. In addition, the average faculty member spoke with five students per semester, three sessions per student, about transfer. Most faculty members got involved with helping students transfer because of a sense of responsibility and the satisfaction of being helpful.

Perhaps most disconcerting was the lack of knowledge of the transfer process faculty members exhibited in this study. The average person answered less than half of the knowledge items on the questionnaire correctly. Faculty members most knowledgeable of the transfer process were in the English and computer science departments and possessed doctoral degrees.

Tatum, Hayward, and Monzon (2006) suggested that institutions encourage faculty members to be more involved in the transfer process. In addition, institutions could create an orientation program for new faculty that encourages a transfer culture, create a faculty support system to increase knowledge of the transfer process, and provide incentives to faculty who promote transfer. A serious limitation of this study, however, was that the researchers did not link faculty knowledge or involvement to the actual transfer rates of the institution. Therefore, there was no evidence based support for their recommendations, especially if the transfer rates at the institution involved in the study were high.

Institutional environment. Additional research points to the nurturing environment of the community college, or institutional culture, as being disadvantageous to transfer students. Included in this idea of nurture is the possibility of grade inflation (Rachal, 1984) to increase student self-esteem. In a comparison of native and transfer students' academic performance at a major university in the southern U.S., Carlan and Byxbe (2000) concluded that their findings support the possibility of inflation in community college grading practices. The researchers used regression analysis to examine/compare data from a large participant sample (n = 717) including 487 transfer students. Over 54% of the transfer student sample in the Carlan and Byxbe (2000) study were aged 25 years or over.

Carlan and Byxbe (2000) found that transfer students earned similar GPAs in lower division coursework to their native counterparts. However, transfer students had considerably lower ACT scores (mean = 18.76) compared to native students (mean = 21.56). This finding was problematic if one acknowledges research findings that support

the ACT and SAT as accurate predictors of early college performance. Carlan and Byxbe suggested a combination of change to a less nurturing environment at the university and grade inflation at the community college was responsible for the poorer academic performance of transfer students. The researchers offered recommendations for the community college and university to better serve transfer students. Community colleges should explore more effective ways to better prepare students to meet the academic requirements in their chosen major at the university. Similar to Cejda (1994), Carlan and Byxbe proposed more collaboration between community college and university faculty to coordinate transfer strategies and improve academic performance.

Policy and administration. At both at the community college and university there are policies and procedures that manifest this institutional culture and institutional disposition towards transfer students. Arnold (2000) conducted a large study for the Oregon University System (OUS) to track the progress of transfer students with the intent of identifying practical actions for policy makers and institutional practitioners to enhance the transfer function. Arnold used longitudinal data collected jointly by the OUS and the Oregon Department of Community Colleges and Workforce Development (CCWD). By matching social security numbers, the researcher was able to compare enrollment records of the OUS and CCWD and extract those students that had transitioned between the two. Arnold then examined the enrollment patterns, transcripts, and persistence and graduation rates of these students.

Arnold (2000) proposed policy implications for community college and university practitioners in the following areas: (a) transfer rates and enrollment patterns and (b) credit transfer. Arnold suggested that data-collection be expanded to better understand

transfer rates and enrollment patterns. This might include gathering information on students that completed a community college transfer degree but did not attend a university, students simultaneously enrolled in community college and university, and follow-ups on students focusing on academic major pursued at the university. These recommendations were prompted by the inability of the data available to explain the non-linear pattern of student movement, as well as the finding that slightly over 50% of transfer degree recipients in Oregon enrolled at an OUS campus the year following degree completion.

Arnold (2000) found that credit acceptance was a prime concern in the transfer process. Information from the data-match process revealed that students transferring with a transfer specific degree (AA/OT) lost between 8 and 10 credits in the transfer process. The credit loss could be even greater when applying credits to a specific major. Arnold argued that institutions bear some responsibility for this credit loss and should work on articulation agreements, as well as provide students with well-informed advisers. Institutions should also expand advising information services, such as the development and implementation of electronic/ web-based advising centers.

In an effort to examine the impact of state mandated increases to standards of institutional accountability, Poch and Wolverton (2006) explored the effect of community college transfers on the ability of universities to meet state requirements for graduation efficiency. As part of the study, the researchers interviewed administrators from the study institutions regarding their perceptions of the appropriateness of the mandated graduation efficiency indexes. During this process, administrators were asked about what their institutions did to support transfer students. The responses were troubling, yet not

altogether surprising. On administrator admitted, "Not a helluva a lot," while the general consensus was, "we could do a lot better" (Poch & Wolverton, p. 243). Another administrator stated, "Administratively, transfer students are harder. We can predict the needs of freshmen. Transfer students are not as similar to each other, so we leave them alone" (Poch & Wolverton, p. 243).

These responses are troubling as they demonstrate a lack of understanding and ability on behalf of university administrators to assist transfer students. Poch and Wolverton (2006) found that many administrators had problems dealing with transfer students because they are not a homogenous group. One administrator noted that transfer students "have different needs, look at the world differently, and generally are much more diverse than similar" (p. 243). Unlike freshmen, who tend to be more homogenous at these institutions, transfer students brought with them a diversity of pre-college characteristics, including race, ethnicity, socioeconomic status, and age.

Involvement and Adjustment

Liu and Liu (2000) reported that student academic integration into an institution significantly influenced student persistence behavior. Adjustment to a new academic and social environment is an influential factor in the transition process of transfer students. For adult students, the adjustment process can be quite complex and identifiably different from the adjustment process of traditional aged students (Bean & Metzner, 1985). Adult transfer students, therefore, experience a complex adjustment process to postsecondary education, and unlike students that begin and complete their baccalaureate degree at a single institution, must undergo this transition process at multiple institutions. Chartrand (1992), in an analysis of the Bean and Metzner (1984) model, defined the adjustment

process of nontraditional students as encompassing institutional commitment and the absence of psychological distress.

Transfer student involvement. In a study comparing transfer and nontransfer residence hall students, Woosley and Johnson (2006) observed how residence hall native students and transfer students differ with regard to their academic experiences and involvement. The researchers utilized four years of data, collected in the form of a paper survey from 2001 through 2004, on sophomores at a predominantly residential university and found that transfer students reported less time spent engaging in student activities than did their nontransfer peers (p. 27). Additionally, transfer students demonstrated lower levels of satisfaction with student activities. Transfer students also indicated lower levels of self-perceived progress than did native students.

Interestingly, the subjects in this study all resided on campus, so despite opportunities for involvement, transfer students did not participate at similar levels to native students. This indicated that transfer students were not fully benefitting from the college experience (Woosley & Johnson, 2006, p. 29). The results of this study may not be generalizable to other populations of transfer students, including older transfer students who tend to live off campus, as this sample was homogenous in residence status and prominently homogenous in social demographics. However, this research supported other findings in that transfer students were not as engaged in the academic and social life of the receiving institution, nor were transfer students satisfied with activities at the receiving institution.

Engaging fully in and benefiting from the college experience can lead to students to an attachment with their institution. Transfer students who perceive they have less

interaction with the college are more apt to drop out than those who perceive higher levels of interaction (Zhai & Newcomb, 2000, p. 7). Institutional commitment indicates the "importance students attribute to attending one particular institution" (Bean & Metzner, 1985, p. 528). Students develop institutional commitment in a variety of ways, one of which is student engagement. Student engagement, however, is lacking among community college transfer students. In the latest National Survey of Student Engagement (NSSE, 2008) transfer students were less engaged in four out of five engagement benchmarks. After controlling for precollege characteristics and institutional type, transfer status was negatively associated with active and collaborative learning, student-faculty interaction, and enriching educational experiences. Transfer students also viewed their campus environments as less supportive (p. 15). The sample of transfer students in this study were older than their non-transfer peers, were less likely to live on campus, were more likely to work off campus, and typically cared for dependents.

Transfer student adjustment. Berger and Malaney (2003) examined how precollege characteristics and post-transfer experiences influenced the adjustment of community college transfer students to life on a university campus as measured by academic performance and satisfaction with various aspects of the university experience. Based on interview data from a random sample of 392 students who had transferred to the University of Massachusetts Amherst, Berger and Malaney found that students who worked more hours off campus and spent more time focused on family commitments, typical characteristics of older transfer students, were not as likely to be satisfied with their university experience (p. 12). Older students, however, were more likely to be satisfied with academic advising and faculty availability on campus, and have higher

GPAs. Unlike the NSSE (2008) findings, Berger and Malaney suggested that older students might spend more time working with faculty and be better equipped to utilize academic advising.

Berger and Malaney (2003) did not provide descriptive statistics for their sample, so it was difficult to ascertain what they mean by "older" student. However, the description of older students as being more likely to work off campus and have greater family commitments matched those characteristics attributed to adult students. Another drawback of the Berger and Malaney study was that the researchers failed to consider community college GPA in their analysis of academic performance and its influence on academic and social adjustment at the university. Some findings attributed to age, higher GPA for example, may well be a factor of community college GPA and not related to precollege characteristics.

In a study designed to understand the perceptions, attitudes, and college experiences of urban community college transfer students, Starobin (2004) found that mature students, the average age of participants in this study was 26, were more likely to have a successful adjustment process if they knew someone who was willing to support their educational efforts. Help could come not only from university faculty and staff, but also from relatives, friends, or acquaintances from the community college and university. Starobin also noticed that prior experiences at the community college had both positive and negative influences on transfer students' overall adjustment to the new culture of the receiving institution.

In addition to collecting quantitative data through the use of a questionnaire, Starobin (2004) collected qualitative data through open ended questions. Two themes

that emerged from the open ended questions were the importance of campus involvement in activities, and interactions with advisors, friends, and relatives at the university. This study demonstrated the importance of engagement in the academic and social opportunities offered at the university for adult transfer students.

Laanan (2007) surveyed a group of 727 transfer students, of which 38% were aged 25 years and above, to investigate the performance and experiences of community college transfer students at a university. In particular, this study moved beyond the transfer shock concept (a review of GPA decline in the first year at the university) and focused on academic and social adjustment at the university. Laanan's findings split from those of other studies in that no social demographic variables, including age, were significant predictors of student's social adjustment at the university. Likewise, Laanan reported that social demographic variables were not determinants of academic adjustment.

Laanan (2007) concluded that age and other demographic variables played a role in who attended college, but were not of use in predicting students' adjustment. Laanan further clarified this position by arguing that "what a student brings to the college environment will have an impact on their academic and social experiences," but it is what students *do* once they arrive on the four-year campus that will determine the extent to which successful academic and social adjustment are achieved (Laanan, 2007, p. 55). This conclusion was in line with Astin's (1984) view of student involvement, that what one puts into college impacts what one gets out of college. However, it might be overly simplistic when applying this thought to adult students. When considering adult transfer students, the proper view might not be what students put into college, but how students'

non-academic responsibilities impact their ability to put forth maximum effort toward academic and social endeavors. Although Laanan's (2007) statistical analysis controls for such things, the results did not seem congruent with what is known of the adult student experience.

Townsend and Wilson (2006) used a qualitative research design to understand variables affecting the academic and social integration of community college transfer students at a large university. Of the 19 participants in this study, five were aged above 24 years. The researchers found that for the adult transfer students in their study, the lack of older undergraduates at the university affected their ability to make social connections. Older transfer students found social integration much easier at the community college. One student explained when talking about the differences between the two- and four-year experience, "In the community college there were a lot more people like myself that were either working and going to school or coming back to school after a long break. I feel very old and out of place here sometimes" (Townsend & Wilson, p. 448). Adjusting socially for traditional-aged transfer students was difficult, but being older seemed to exacerbate the problem.

Academic adjustment was also difficult for non-traditional aged students. Many of the statements made by non-traditional aged students regarding academic adjustment revolved around the differences in faculty. Typical comments highlighted the notion that community college faculty were more helpful and available, whereas university faculty were either more interested in research or nonexistent (TA's teaching class). Additionally, older transfer students perceived the reduced number of homework assignments and regular progress evaluations at the university level as limiting the

amount of involvement they had with faculty (Townsend & Wilson, 2006, p. 447). Perhaps the most distressing viewpoint exhibited by more than one of the non-traditional aged participants when discussing their place in the university was best summed up by these words offered by a non-traditional aged, female student, "Here they don't care if you're there or not [in class], I mean, it's, it's unfortunate but . . . you're just a number" (p.447).

Save for one study, a pattern develops when looking at the recent research on adjustment and integration of adult community college transfer students; successful academic and social adjustment was dependent upon the amount of a student's academic and social engagement. This expounds a potential problem when applied to adult transfer students as adults typically have less time to dedicate to becoming fully engaged academically and socially (Glass Jr. & Bunn, 1998). A logical conclusion would be that many adult transfer students do not become fully integrated academically or socially at the university and therefore do not successfully adjust to their new institutional environment. This lack of adjustment then leads to reduced performance academically as measured by low GPA and/or persistence.

Adult Specific Transfer Research

The research reviewed up to this point has laid a foundation for understanding the adult transfer student experience. Yet each shares a major limitation, especially those that examine academic and social adjustment; none focus specifically on the adult student. Recent research has identified the need for more investigation into subgroups of transfer students (Woosley & Johnson, 2006), and additional literature has come available in recent years. More is now known about the effect of racial and ethnic

composition on transfer rates (Melguizo, 2009; Wassemer et al., 2004), gender differences in the transfer student experience (Surette, 2001; Wawrzynski & Sedlacek, 2003), the transfer experience of foreign-born community college students (Bailey & Weininger, 2002), and the experiences of African American women community college transfers (Shaw & Coleman, 2000). Although the call has been made to learn more about the experiences of adult transfer students (Flaga, 2006), there is little research literature available on the topic (Monroe, 2006, p. 33).

Carlan (2001) examined the university academic performance of adult students who started their studies at a community college. Using multiple regression and covariate analyses, Carlan extracted transcript data from 717 students to analyze, predict, and explain academic performance. Descriptive statistics showed that the adult students in this study were primarily enrolled full-time, White, and female. Results indicated that adult transfer students' academic performance, as measured by GPA, was similar to the performance of native adult students and better than traditional aged transfer students. Unlike the Keeley and House (1993) study, Carlan found that adult transfer students experienced transfer shock, and the level of transfer shock was dependent upon four-year college major. Adult students majoring in education and psychology had lower levels of transfer shock than those in business, science, and technology.

Carlan (2001) found five variables that were significant predictors of upper division GPA: (a) associate degree attainment, (b) lower division credit hours, (c) gender, (d) lower division GPA, and (e) college of major. The combination of associate degree attainment, lower division credit hours, and gender accounted for only 4% of the total 38% variance in the model. Although significant, these variables were not practically

useful or important. College of major accounted for 23% of the variance in the model and lower division GPA 11%. Carlan's model indicated that for adult students, lower division GPA was by far a stronger predictor of academic success at the university than was amount of credit hours transferred, thus calling into question the utility of earning an associate's degree for adult students. Also important to adult student academic performance at the university was choice of major.

Three variables were significant in predicting persistence to graduation: (a) lower division GPA, (b) college of major, and (c) lower division credit hours (Carlan, 2001). Combined, these variables accounted for 14% of the variance in the model. As with upper division GPA, college of major demonstrated the most power in predicting graduation. Education and psychology majors were more likely to graduate than any other major, 27% more likely than science and technology majors and 50% more likely than arts majors.

In an effort to expound the attrition process of nontraditional students, Monroe (2006) conducted an in-depth interview with an adult transfer student who decided to leave the university. Although Monroe chose to interview only one student, the researcher was able to highlight salient issues that potentially impact a significant portion of adult transfer students. Those issues were categorized as past experiences and current expectations, personal issues, institutional fit, and academic integration.

The informant in Monroe's (2006) case study, Clara, brought with her experiences that shaped her expectations of what would occur at the university. She had experienced what she referred to as "games" at a previous institution and this shaped her seemingly unpleasant interactions with faculty and staff at the university. In addition to

past experiences, Clara had to contend with personal issues, such as family and work, throughout the transfer transition process. She often referred to "family issues" pulling her away from school. Clara moved away from home and her husband, who stayed home because of work, to attend school and lacked family support. The emotional and geographical separation were compounding factors in her decision to leave.

Clara's difficulty with faculty and her personal issues influenced her academic integration and fit with the institution. Clara consistently perceived that she was misinformed on institutional policies, which lead to her decision to leave. The institution did not provide what she needed. The lack of fit Clara perceived with the institution diminished her institutional commitment, thus impacting her academic integration into the university. This perception was a byproduct of negative interaction experiences and lack of support from faculty and staff.

Monroe's (2006) study was limited in that the findings were based on in-depth interviews with only one student. However, much of what Clara experienced can be corroborated by additional research. The importance of faculty knowledge and support (Tatum et al., 2006; Townsend, 1995), institutional fit (Tinto, 1975), and academic integration (Laanan, 2007; Townsend & Wilson, 2006) were well established in the research literature. Furthermore, Hagedorn (2005) observed that lack of adequate information about transfer options, job, and family were three key barriers in adults attaining their educational goals. In spite of its limitations, Monroe's study nonetheless humanized the distinctive issues and needs of adult transfer students.

Chapter Summary

This chapter presented a review of the relevant research literature related to adult community college transfer students. Theoretical perspectives were reviewed regarding student involvement and integration (Astin, 1975; Kasworm, 2003c; Tinto, 1975, 1993), and nontraditional student attrition (Bean & Metzner, 1985). The community college student, the evolving mission of the community college, and the transfer function were then examined. Particular attention was focused on the academic performance of adult community college transfer students at the two- and four-year level, institutional impacts on the adult community college transfer student, and adult transfer student involvement and adjustment. Academic performance of the adult transfer student included a review of the transfer shock phenomenon, persistence to degree, and likelihood to transfer. Institutional impacts examined faculty knowledge, institutional environment, and policies and procedures. Student involvement and adjustment focused on adult transfer student involvement at the two- and four-year level and adjustment to the university. The review concluded with an evaluation of research literature specifically examining the adult community college transfer student.

Key findings from the review of literature included: (a) the typical transfer student was aged 26 years, was likely to be non-White, had a weaker academic background, and was less confident about their ability to complete a degree; (b) adult transfer students at the community college level performed better academically than their peers, but transferred at a lesser rate; (c) adult transfer students perceived the community college environment to be nurturing. Findings for adult community college transfer student at the university included; (a) adult transfers were less likely than their younger

peers to persist to degree completion; (b) adult transfers were less engaged with faculty and did not perceive institutional policies as supportive; (c) academic and social adjustment were difficult for adult transfers, but the difficulty could be lessened if the adult student had a support from family, friends, and/or faculty; and (d) there was conflicting evidence regarding adult student academic performance as measured by GPA.

Despite the wide body of past and emerging research literature on community college transfer, there were obvious gaps. Much of the research on community college transfer treated transfer students as a homogenous group. Considering that the average age of a community college transfer student is 26 years (Fredrickson, 1998), there was a surprising scarcity of research literature focused specifically on adult transfer students, particularly in the areas of academic and social integration. This research would address the stated need for more research on subgroups of transfer students (Woosley & Johnson, 2006) by expanding our knowledge of the adult community college transfer student experience.

CHAPTER 3

METHODOLOGY

The purpose of this quantitative study was two-fold: (a) to provide a comprehensive description of the adult transfer student population and (b) to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of adult vertical transfer students at the university. The research questions guiding this study are:

1. What is the descriptive profile of the adult community college transfer student population?
2. What precollege characteristics influence the academic and social adjustment process of adult vertical transfer students at the university?
3. What community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university?
4. Are the most influential variables demographic, academic (GPA), social, or environmental?

This chapter is organized into the sections describing this study's framework, instrumentation, sample selection, data collection, data preparation, data analysis, and limitations.

Framework

Unfortunately, there were no theories specific to vertical transfer from which to draw in developing the framework for this study. To develop the framework for this

study on the vertical transfer experiences of adult students with community college beginnings, the researcher utilized multiple theories and concepts important in the transfer experience. Through a review of transfer research, two major concepts were identified as fundamental to the transition and adjustment process: (a) persistence and (b) involvement.

Persistence

Models of student persistence focus on several assertions regarding the relationship between students, postsecondary institutions, and educational outcomes (Strauss & Volkwein, 2002). These assertions include the positive relationship between student integration and academic persistence (Tinto, 1975, 1986, 1993), the positive relationship between campus climate and student adjustment (Astin 1984, 1993a; Kuh, 1993; Pace, 1984; Tinto, 1975, 1993), and the relationship between precollege characteristics and academic persistence (Astin, 1997; Astin, Tsui, & Avalos, 1996; Braxton, Sullivan, & Johnson, 1997; Pace, 1984).

Tinto's (1975) model of student departure originates from the basic assumptions of Spady's (1970, 1971) model of the process of student dropout. The basic premise behind the model of student departure is that students come to college with certain precollege characteristics and commitments that shape how the student fits into the academic and social environment of the postsecondary institution. Tinto's (1975, 1993) model includes three stages through which a student must progress to reach degree completion. For transfer students, academic and social integration occurs while transitioning from the community college into the university (Flaga, 2006; Hagedorn, 2005; Ishitani, 2008; Laanan, 2004, 2007; Monroe, 2006; Surette, 2001).

Bean and Metzner (1985) recognized the limitations of Tinto's (1975) persistence model when applied to adult students. Building on Tinto's (1975) model of student departure, Bean and Metzner's (1985) conceptual model accounted for the reduced role social integration played in attrition for adult students (Summers, 2003). Most pertinent to this study of adult transfer was Bean and Metzner's (1985) position on nontraditional student academic and social integration. Where Bean and Metzner broke from Tinto (1975) was in identifying the major difference in persistence between traditional and nontraditional students, the reduced role of social integration. Insights from Bean and Metzner helped generate a better understanding of those adult transfer students who successfully integrate socially into the university, but exhibit no actions of social integration as conceptualized by Tinto, such as participating in clubs and organizations.

Involvement

In developing the theory of student involvement, Astin (1975) found that factors linked to student persistence suggested their involvement in college. Conversely, factors linked to student departure suggested a lack of involvement. Astin (1984) intended for the concept of involvement to be behavioral in meaning (Berger & Milem, 1999; Laanan, 2004), suggesting that is not "what the individual thinks" that defines involvement, but "what the individual does" (Astin, 1984, p. 298). The traditional view of involvement being extra-curricular activities outside of the classroom may misrepresent involvement for the adult student (Donaldson & Graham, 1999; Kasworm, 2003c; Philibert, Allen, & Elleven, 2008). A significant number of adults successfully transition into postsecondary education without reporting high levels of involvement (Justice & Dornan, 2001), thus making a case for an alternate concept of involvement for the adult student. For many

adults, the classroom experience is the college experience (Donaldson, 1999; Kasworm, 2003c), with key in-class relationships with faculty, staff, and peers facilitating involvement (Bean & Metzner, 1985; Dill & Henley, 1998; Kasworm, 1997; Rovai, 2002).

The central path for adult learner social engagement and for negotiating meaning for learning is the classroom (Philibert et al., 2008, p. 586). In a comprehensive study of patterns of learning involvement for adult undergraduate students, Kasworm and Blowers (1994) found that only a select few adult students valued participation in traditional on-campus activities, whereas for the majority of adults the classroom was the root of the collegiate experience. The concept of the connecting classroom suggests that adult learners utilize the classroom as the fulcrum of the collegiate experience. Classroom related learning and in-class related relationships with faculty and peers are significantly important for adult learners. Additionally, evidence suggests that adult students value community within the classroom (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999, Justice & Dornan, 2001; Rovai, 2002).

Relationship among Theoretical/Conceptual Constructs

For the purpose of this study, academic and social adjustment at the university were examined in relation to two constructs: (a) precollege characteristics and (b) community college experiences. Precollege characteristics are those characteristics that the student brings to college, including age, race, gender, and socioeconomic status (Ethington & Horn, 2007). Community college experiences influence both the transition process and university experiences (Starobin, 2004), and can be viewed from both an academic and social perspective. Academic components include GPA and major, reasons

for attending university, and participating in transfer orientation or other transfer programs. Social components include experiences with faculty, peer interaction, involvement activities, and course learning.

There are additional relationships among constructs (see Figure 1.1). These include the effect of precollege characteristics on community college experiences, the effect of academic adjustment at the university on social adjustment at the university, and the effect of social adjustment at the university on academic adjustment at the university. These relationships are significant in the vertical transfer process, but were not included in this study. Figure 3.1 demonstrates pictorially the relationships among major constructs investigated in this study.

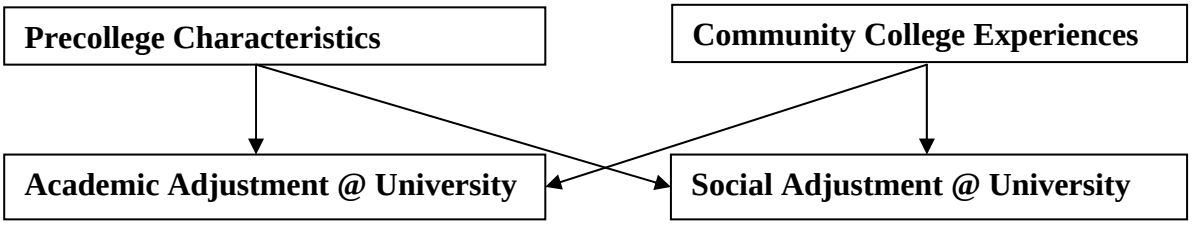


Figure 3. 1 : Conceptual Model of Study

Academic and social adjustment can be defined differently depending on the academic and social context of the individual and the institution. In one study of the academic and social adjustment process of transfer students, the following items on a questionnaire comprised the academic adjustment factor: (a) adjusting to the academic standards has been difficult; (b) I experienced a dip in grades during the first and second semester; (c) my level of stress increased when I started the university; and (d) there is a sense of competition between and among students that is not found in community colleges (Laanan, 2007, p. 43). In the same study Laanan identified the following items for social adjustment: (a) adjusting to the environment has been easy; (b) I am meeting as

many people and making as many friends as I would like at SU; (c) it is easy to make friends; (d) and I am very involved in social activities (p. 43). For this study, academic adjustment was determined using the Self-Efficacy for Broad Academic Milestones Scale (SE-Broad Scale) (Lent et al., 1997), along with university GPA, and social adjustment using the Perceived Cohesion Scale (PC-Scale) (Bollen & Hoyle, 1990).

Instrumentation

Initially the use of an existing questionnaire for this study was considered. Among the questionnaires considered were the Laanan Transfer Student Questionnaire (L-TSQ) (Laanan, 1998); the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1984), the Student Transition Questionnaire (STQ) (Gibson, Brennan, Brown, & Multon, 1989), and the College Student Experiences Questionnaire (CSEQ) (Pace, 1990). The STQ (Gibson, Brennan, Brown, & Multon, 1989) was not available for use because there were no longer digital or paper copies of the instrument in existence. Neither the SACQ (Baker & Siryk, 1984) nor the CSEQ (Pace, 1990) in full were designed to measure the specific relationships proposed in this study, yet the SACQ possessed two subscales that were pertinent to this study. The L-TSQ, used in two previous studies (Laanan, 2007; Starobin, 2004) was theoretically and conceptually based on the work of Astin (1984), and Pace's (1980, 1984) concept of "Quality of Effort" (QE). Although this instrument shared theoretical and conceptual similarities to the current study, there were problems with its application.

Table 3.1

Definition of Vertical Transfer Constructs

Construct Name	Definition
Precollege Characteristics	Those characteristics that the student brings to college, including age, race, gender, and socioeconomic status.
Community College Experiences	Community college experiences can be viewed from both an academic and social perspective. Community college experiences include grade point average, building self-confidence, experiences with faculty, hours spent on campus, obtaining an associate's degree, participation in co- and extra-curricular activities, and in-class social integration.
Academic Adjustment	Motivation for being in college and for doing academic work, academic effort, efficacy of effort in various aspects of performance, and satisfaction with academic environment.
Social Adjustment	Extent and success of social involvement in general, relationships with other persons on campus, and satisfaction with the social aspects of college environment.

The L-TSQ is a 304-item survey instrument, and while the L-TSQ is thorough, it was determined its length would dissuade subjects from participating. The L-TSQ is also principally informed by student involvement theory (Astin, 1984), and therefore decidedly tilted to the 18-24 year old transfer student population. This is most evident in subscales measuring social adjustment at the university. Social adjustment as conceptualized and measured by Laanan (1998) consisted primarily of extra-curricular involvement indicators. However, the traditional view of involvement and engagement being out-of-class relationships between student and faculty, as well as co- and extra-curricular activities, might misrepresent what involvement and engagement are to the adult student (Kasworm, 2003c).

A review of recent research literature, as well as 85 dissertations authored since 2008 focused specifically on vertical transfer, yielded no appropriate instrument to measure all the constructs identified in the vertical transfer process of adult community college students. The majority of the quantitative studies, with the exception of those using the L-TSQ (Laanan, 2007; Starobin, 2004), utilized secondary data for analysis (demographic information, GPA) and examined few predictor variables in the transfer experience. The lone quantitative study focusing specifically on adult students (Carlan, 2001) was limited to the examination of academic variables (GPA, college major) in relation to academic performance and persistence at the university.

No existing instrument was suitable for measuring the constructs identified in this study. Therefore, a researcher-designed instrument that incorporated scales of existing instruments was developed for the purpose of examining the relationships among constructs in the vertical transfer process of adult community college students. The instrument utilized a combination of items measuring academic variables at the community college and university, social variables at the community college and university, including a scale to measure in-class involvement (Philibert, 2005), environmental variables at the community college, and scales measuring academic adjustment (Lent, Brown, & Gore, 1997) and social adjustment (Bollen & Hoyle, 1990) at the university. Following is a discussion of the development process for the instrumentation used in this study.

Development of Questionnaire

The following section contains an outline of the steps taken to create an instrument specific to examine the relationships among constructs in the vertical transfer process of adult community college transfer students. These steps include construct clarification, identification of individual testing items, response scale, identification of variables, and selecting demographic information.

Construct clarification. No instrument existed to provide a comprehensive examination of the vertical transfer process, especially for the adult student. Clarification of the key constructs in the vertical transfer process, with specificity for adult undergraduates, was important in the design of an accurate measurement instrument. Constructs mentioned in the previous sections were developed by means of a literature review on transfer and adult undergraduates, and through discussions with transfer advisors at the community college level and support staff at the university.

The review of literature identified various ways in which researchers approached the transition experiences of transfer students. The largest body of research on vertical transfer students focused on academic performance as measured by GPA, and usually compared transfer students to native students, those that begin their studies at the university. In influential early works (Cejda, 1994, 1997; Hills, 1965), researchers examined the transition experience as a function of academic adjustment at the university, and identified the "transfer shock" phenomenon, a discernable dip in GPA in the first few semesters at the university. Later works identified adjustment to academic standards at the university (Laanan, 2007; Townsend, 1995) stress levels of the academic transition (Bean & Metzner, 1985; Laanan, 2007; Tinto, 1975), and the different

academic environment of the university (Carlan & Byxbe, 2000; Laanan, 2007; Starobin, 2004; Townsend, 1995) as key variables in the academic adjustment of community college students at the university. These variables indicated academic adjustment at the university, and the levels at which the adult student experienced these variables determined successful or unsuccessful academic adjustment.

The importance of social adjustment at the university was overlooked in early transfer research. More recent research has demonstrated the importance of social adjustment to the overall success of transfer students, including the importance of institutional fit (Monroe, 2006), connecting on an interpersonal level with people at the university (Laanan, 1998, 2007; Monroe, 2006, Starobin, 2004, Townsend & Wilson, 2006), and the importance of extracurricular and in class involvement for both adult and transfer students (Kasworm, 2003; Laanan, 2007; Philibert, Allen, & Elleven, 2008). Social adjustment at the institution influences academic adjustment, and can indicate the adult learner's likelihood to persistence to degree completion.

Findings from the literature review indicated the remaining constructs of precollege characteristics, community college experiences, and university experiences were linked to the constructs of academic and social adjustment in that positive academic and social adjustment were dependent upon these constructs. Each of these constructs was subdivided into important variables identified in the literature to impact the transfer process. For precollege characteristics, the variables of socioeconomic status (Wassmer, Moore, & Shulock, 2004), age (Ishitani, 2008; Zhai & Newcomb, 2000), gender (Carlan, 2001; Surette, 2001), and race (Wawrzynski & Sedlacek, 2003) were found to influence academic and social adjustment at the university.

The construct of community college experiences can be subdivided into three groups of variables: (a) academic, (b) social, and (c) environmental. Each of these variables was best explained by potential barriers adult transfer students face through the course of the transition process. These four barriers included: (a) institutional, (b) situational/environmental, (c) psychological, and (d) educational/academic (CAEL, 2000; Compton, Cox, & Laanan, 2006; Hardin, 2008).

Identifying items to measure constructs. Table 3.2 delineates the process of instrument development and validation. The testing instrument measured the areas of academic and social adjustment at the university and their relationship to the constructs of precollege characteristics and community college experiences. Specifically, the instrument was used to collect data to analyze the differences in precollege characteristics and community college experiences among study respondents. Determining a reliable and valid measure of academic and social adjustment were fundamental in designing the testing instrument.

Table 3.2

Instrument Development

Step	Method	Results
1. Item Pool and Construct Development	a. Literature Review b. Content Experts	135 items
2. Item Refinement	Researcher conducted	75 items
3. Content Validity	Expert Survey	64 items
4. Critique Session	Expert/Peer Survey	61 items
5. Pilot Survey	Questionnaire (Web)	61 items

In designing the testing instrument, it was determined that several existing scales would work well in measuring the following areas: (a) academic adjustment, (b) social adjustment, and (c) involvement (connecting classroom). In addition to collecting self-report data on academic performance at the university (GPA, credit hours earned), the SE-Broad Scale (Lent, Brown, & Gore, 1997) was selected as an appropriate measure of academic adjustment. Academic self-efficacy has been empirically linked to both academic performance and persistence (Bong, 2001; Hsieh, Sullivan, & Guerra, 2007; Lent, Brown, & Larkin, 1984; Soldberg, O'Brien, Villareal, Kennel, & Davis, 1993). The SE-Broad has been used previously in transfer studies as a method to determine academic adjustment at the university (Whorton, 2009).

The PC-Scale (Bollen & Hoyle, 1990) was selected to measure the adult student's sense of belonging at the university, which acts as a proxy for social adjustment. The importance of perceived cohesion and fit was predominant in the literature on adjustment (Astin, 1984, Bean & Metzner, 1985; Tinto, 1975, 1993). The PC-Scale has also been used in previous transfer students to determine social adjustment (Whorton, 2009).

Involvement in classroom activities was determined to be an integral social aspect of the higher education experience for adult students. Whereas immersion in a campus community was important socially and academically for traditional aged students (Astin, 1984; Tinto, 1975, 1993), involvement in a classroom community was important for the adult student (Kasworm & Blowers, 1994; Kasworm, 2003). Adult learners can be more verbal, lead in group activities, are more task-oriented in class projects, and relish in-class interaction with faculty and peers (Kasworm & Blowers, 1994), thereby using the classroom to fulfill the need for social interaction and involvement. Although social

integration beyond the classroom was important for the adult learner (Sandler, 2000), in-class relationships through a connecting classroom truly defined involvement and integration for the adult student.

Existing instruments for examining social adjustment, such as the L-TSQ (Laanan, 1998), the SACQ (Baker & Siryk, 1984), and the CSEQ (Pace, 1984), were based on the concept of involvement as purely an extracurricular phenomenon. The Connecting Classroom Scale (CC-Scale) (Philibert, 2005) was selected as a measure of adult student in-class social interaction and engagement at the community college. Permission to use the CC-Scale was given by Dr. Philibert during a phone conversation about the scale. Items in this scale focused on classroom related relationships with faculty and peers. Additionally, the relationships of the student's academic knowledge with life-world knowledge structures were addressed. Two items were added to the CC-SCALE to better reflect the four key elements of the connecting classroom concept: (a) ethos of an adult-oriented environment and (b) nature of the teaching, learning process (Graham et al., 2000).

Additional testing items were written based on a comprehensive reading of vertical transfer literature and the researcher's professional experience working with adult transfer students in the field. These items were primarily addressing environmental variables at the community college; some additional items related to academic variables at the community college were also added. The original list of 135 items was refined to a list of 61 items that were related to the four constructs. Removed items were either redundant (existed in one of the selected scales) or could not be clearly linked to one of the four constructs. To ensure that the most relevant items were used, the prototype

questionnaire was presented to experts in community college transfer and adult education, and critiqued.

Response scale. The SE-Broad Scale (Lent, Brown, & Gore, 1997) utilizes a 9-point Likert-type, while the other scales, PC-Scale (Bollen & Hoyle, 1990) and the CC-SCALE (Philibert, 2005), utilize a 5-point Likert of 1 (Strongly Disagree) to 5 (Strongly Agree). The researcher determined that the best course of action was to homogenize the scales and use a 5-point Likert Scale ranging from "Strongly Disagree" to "Strongly Agree" for the PC-Scale and CC-Scale. The SE-Broad was reduced to a 5-point scale, but retained the "No Confidence" to "Complete Confidence" intervals. The SE-Broad Scale functions well with a reduced response range and has scored higher reliability scores in such usage (Whorton, 2009).

Variables. Data were gathered on adult student demographic variables for this study, as well as proxy data for the variables academic adjustment and social adjustment. Table 3.3 provides the variables and descriptors used in this study.

Demographic variables. A review of the literature, personal experience, and discussions with experts revealed the following demographic characteristics as integral in the transfer transition process: (a) age (Ishitani, 2008; Zhai & Newcomb, 2000), (b) gender (Carlan, 2001; Surette, 2001), (c) ethnicity (Wawrzynski & Sedlacek, 2003), (d) socioeconomic status (Wassmer, Moore, & Shulock, 2004), and (e) first-generation college student status.

Table 3.3

Variables and Descriptors

Type	Descriptor	Item on Instrument
Precollege Characteristics (Independent Variable)	Age, Gender, Race/Ethnicity, Socioeconomic Status, 1st Generation	57, 58, 59, 60, 61
Community College Experiences (Independent Variable)	Academic – Major, GPA, Credit Hours, Associate's Degree, Type of Community College, Credits Transferred	1, 2, 3, 4, 5, 6, 37
	Social (Extracurricular)	7
	Class Involvement – Connected Classroom Scale	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 24, 25
	Environmental: Non-curricular variables of family, financial, and work responsibility	26, 27, 28, 29, 30, 31, 32, 33, 34, 35
Academic Adjustment (Dependent Variable)	Academic - Credits Earned, GPA	36, 38
	SE-Broad Scale	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50
Social Adjustment (Dependent Variable)	Perceived Cohesion Scale	51, 52, 53, 54, 55, 56

Community college experiences. Community college experiences were subdivided into academic, social, and environmental variables. Academic variables were derived from the research literature that showed GPA (Hills, 1965; Goa et al, 2002; Keeley & House, 1993; Laanan, 2007; Zhai & Newcomb, 2000), earning an Associate's degree and credit hours accepted at the university (Arnold, 2000; Carlan, 2001; Carlan &

Byxbe, 2000), and participation in transfer services (Laanan, 2007; Whorton, 2009) key factors in the transfer process.

Social variables were divided into two separate concepts to fully account for the experiences of adult transfer students. The fact that extracurricular activities were important social experiences for all students was well documented in the literature (Astin, 1984; Baker & Siryk, 1984; Pace, 1984; Tinto, 1975, 1993), as well as the specific importance for transfer students (Graham & Long Gisi, 2000; Laanan, 2007; Starobin, 2004; Townsend, 1995; Townsend & Wilson, 2006). The involvement concept was added to account for the differing patters of social interaction for the adult student. The traditional view of involvement being extra-curricular activities outside of the classroom may misrepresent involvement for the adult student (Donaldson & Graham, 1999; Kasworm, 2003c; Philibert, Allen, & Elleven, 2008). The connecting classroom concept (Graham et al., 2000; Kasworm, 2003c; Kasworm & Blowers, 1984), measured by the CC-SCALE (Philibert, 2005), made the social variables more adult-centric.

The CC-Scale (Philibert, 2005) was modified for this study into an 18-item scale. The response scale for each item ranged from "Strongly Disagree" to "Strongly Agree." The lowest possible score for the CC-Scale was 18. The highest possible score was 108.

Environmental variables were identified in most of the literature specific to adult students. Bean and Metzner (1985) postulated that environmental variables (e.g., financial responsibility, work responsibility, family responsibility) were in some contexts more important than social or academic variables. Jeffreys (2004) observed that environmental variables were more influential in their impact on retention than academic variables. Jeffreys also found that environmental variables influenced both traditional

aged and adult students, but the manner of impact was different. Family responsibilities were identified as consistent distracters in the transition process of adults to postsecondary education (Bean & Metzner, 1985; Berger & Malaney; 2003; Genco, 2007; Kasworm, et al., 2002; Rovai, 2003; Scanlon, 2009).

The researcher designed the Environmental Variable Scale (EV-Scale) to measure two key environmental variables, work and family responsibilities. For the EV-Scale, participants are asked to rate their perception of the degree to which these two variables influenced their ability to participate in academic and social activities at the institution. The scale consisted of 10 items. The lowest possible score was 10, indicating minimal influence of environmental variables. The highest score was 60, indicating a high degree of influence of environmental variables.

Academic adjustment. The dependent variable academic adjustment was determined by an existing scale and self-reported GPA. Academic adjustment was measured by the SE-Broad (Lent et al, 1997), which measures academic self-efficacy, and self-reported university GPA. Self-efficacy beliefs are beliefs individuals' have in their ability or skill to reach a desired outcome (Bandura, 1977, 1986). Academic self-efficacy has been empirically linked to both academic performance and persistence (Lent et al., 1997). Additionally, multiple research findings alluded to the positive relationship between GPA and academic self-efficacy (Bong 2001; Hsieh, Sullivan, & Guerra, 2007). The SE-Broad Scale consisted of 12 items signifying various academic outcomes and milestones. Participants were asked to rate their confidence levels for reaching these academic outcomes.

Table 3.4

Items on Self-Efficacy for Broad Academic Milestones Scale (SE-Broad)

Item Number	Short Description
1	Written communication courses
2	Arts and humanities courses
3	Natural and mathematical sciences
4	Social and behavioral sciences
5	Academic performance in two years
6	Academic performance in three years
7	Admission to 1st choice academic major
8	Complete academic major requirements
9	Excel next term
10	Excel two terms
11	Excel three terms
12	Graduate

Whorton (2009, p. 59)

In the original scale, each item utilized a 9-point Likert scale with responses corresponding to varying degrees of confidence. The response scale for this study was changed to a 6-point Likert scale to ensure uniformity across measuring items. In past studies, the SE-Broad Scale performed well with varying response scales (Elias & Loomis, 2000). The original scoring included zero for the lowest possible score and 108 for the highest. In this study, the 72 was the high score while the lowest possible score was 12.

Social adjustment. Social adjustment was measured by the PC-Scale (Bollen & Hoyle, 1990), a six-item scale that measures the sense of belonging participants feel to the institutional community and feelings of morale related to belonging to the institutional community. Tinto (1975, 1993) theorized that belongingness and social integration are related, and that social integration influenced persistence.

According to Tinto (1975), a student's commitment to an institution, among other factors, explained student persistence. The level of a student's commitment to the

institution was influenced by the degree to which a student was both academically and socially integrated into the institution. When levels of academic and social integration were high the student's commitment to the institution increased, thereby resulting in continued persistence. For social integration, the extent to which a student felt connected to the institution, through peer relationships or relationships with faculty, influenced decisions to leave or remain at the institution.

The original PC-Scale utilized a 7-point Likert response from "strongly disagree" to "strongly agree." To ensure a consistent measurement set, the response scale for this study was changed to a 6-point response scale. Specific items corresponded to feelings of belongingness or morale. Scores of each of the items were totaled to determine a total perceived cohesion score. The maximum score possible, indicating the highest level of cohesion, was 36.

Table 3.5

Items on the Perceived Cohesion Scale

Item Number	Short Description
1	Sense of belonging
2	Enthusiastic
3	Member
4	Happy
5	Part of
6	Best school

Whorton (2009, p. 61)

Additional Steps in Instrument Development

Additional steps were taken to ensure the development of a comprehensive testing instrument. The instrument underwent an expert review. Additionally, a pilot study was conducted for finalization of the testing instrument.

Expert review. After making the needed grammatical and typographical changes to the survey instrument, the researcher requested the assistance of several experts in community college transfer and adult education in reviewing the content of the survey instrument. An introductory email was sent to five individuals outlining the purpose and scope of the research study and requesting their participation in a content review. Of the initial experts selected to participate in the review, only two agreed and no responses were received from the other three. The researcher attempted to contact the three non-respondents two additional times, first with another email and then via telephone. The additional attempts at contact yielded no additional responses. Two experts in the study of transfer students agreed to review the survey instrument.

The survey instrument for this study consisted of items designed by the researcher, as well as items included in three pre-existing scales: (a) the CC-Scale (Philibert, 2005), (b) the SE-Broad Scale (Lent et al, 1997), and (c) the PC-Scale (Bollen & Hoyle, 1990). As these three scales had been utilized to varying degrees in past research studies, and had been previously tested for both content and construct validity, the researcher made the decision to seek feedback on only those items newly designed. It was the researcher's hope that requesting feedback on fewer items, and therefore asking for less of a time commitment, would encourage experts to review the document. The researcher then identified four more individuals, three of whom provided feedback on the survey instrument.

Five content experts, two in the study of transfer students and three in adult education, reviewed the testing instrument. Most of the content experts questioned the items related to extra-curricular activities at the community college, considering that the

target population was students above 25 years of age. Additionally, questions were raised about two items and what information these items were intended to elicit. These items (*I enjoyed my time at the community college* and *I made friends through my social activities at the community college*) were considered either confusing or too broad. No other significant questions were raised concerning items or constructs on the testing instrument.

Critique session. Following the expert review, the researcher set up a web-based critique session for an item-by-item critique for content, wording, and overall suggestions about the questionnaire format. The researcher extended invitations to review the document via SurveyMonkey®, the web-based survey tool used for this study, to 15 participants. The 15 participants included fellow doctoral students and academic professionals who work with transfer students at the community college and university level. Fourteen individuals participated in the critique session.

The critique session helped identify several issues with the questionnaire. In addition to raising concerns similar to those revealed in the expert review, the following issues were identified as needing attention: (1) questionnaire length; (2) differentiating between quarter and semester hour credits; (3) type of community college; (4) use of positive and negative items; and (5) item wording.

The expert review and critique session led to the removal of multiple items concerning extra-curricular activities and replacing these with a single item. This change better fit the study conceptually, as extra-curricular activities have been shown as less important in understanding the social aspects of adult students' experiences in post-secondary education. Additionally, items were added to address concerns with credit

hours and type of community college (urban, suburban, rural). Several items were consistently identified as unclear and recommended changes were made to simplify question wording. Most participants questioned the use of both positive and negative items throughout the questionnaire. Most of these items were part of existing scales, but were changed to limit confusion. Going into the critique session, the questionnaire consisted of 67 items. After the recommended edits, the questionnaire consisted of 61 items.

Pilot study. As per the suggestion of the doctoral committee, a pilot study was conducted. The purpose of the pilot was to test and refine the questionnaire and collection procedures. A pilot study was used to collect data from a small sample of adult vertical transfer students similar to those would be included in the actual study. This data was used to conduct reliability testing and refine the testing instrument. The pilot study was conducted to address the following concerns: (1) does the instrument posses sufficient measures of reliability; (2) is the instrument technically sufficient; (3) does the data collection method work; and (4) is there sufficient variability among outcomes.

Prior to conducting the pilot study, changes to the questionnaire based on the expert review and critique session were completed and forwarded to the Human Subjects Office for approval. The documents were approved by the IRB. Upon receiving the approval from the Human Subjects Office the pilot study was launched in November 2010, using the web-based survey tool SurveyMonkey®.

The study sample constituted a convenience sample of adult vertical transfer students enrolled at a public university in the southeast region of the United States. The

original sample was to consist of students from two universities, but on the doctoral committee's recommendation at the time of the prospectus defense, only one university was used. The adult transfer student population at the selected institution consisted of approximately 2300 students at the time of the pilot study. The average age was 31, with a low of 25, median of 28, and high of 77. Of this population, 40 subjects were randomly selected to participate in the pilot study. The subjects in the pilot study sample had an average age of 31, with a low of 25, median of 27, and high of 52.

A request to participate email was sent to 40 email addresses on November 12, 2010. An email containing the link to the survey was sent on November 15, 2010. Three subsequent reminders were sent, each conveying a higher sense of urgency in completing the survey. The pilot study ended on January 3, 2011. The full study took place over a four week period. Although it is desirable to have the pilot study mirror the full study as much as possible, the timeline for the pilot study was extended. The pilot study was extended because the Fall and Winter breaks fell within the pilot study period. These two weeks were considered "off" weeks, leading to the addition of time at the end of the study.

Pilot study results. The response results of the pilot study are found in Table 3.7. The single and most concerning problem was the non-response rate. There were several reasons proposed that could have led to the low response rate. A major reason was that the testing period contained two substantial holiday periods. Another factor was that the researcher only had access to participants' school administered email address. Many students do not utilize their school administered email, and probably did not receive the survey notification. Additionally, the pilot study utilized a very small sample size.

Table 3.6

Pilot Study Contact Schedule

Date	Nature of Contact
November 12	Initial Contact: Introductory email including notification of survey.
November 22	Survey: Cover email with survey link sent to all participants
November 29	Follow-up 1: Reminder sent to non-respondents
December 13	Follow-up 2: Reminder sent to non-respondents
December 20	Follow-up 3: Reminder sent to non-respondents

Perhaps the most significant reason for a low response rate was the accuracy of contact information provided by the institution. After the contact information for pilot study participants was received and used, the institution conducted a data purge. The purpose of this purge was to remove outdated and/or incorrect student information for the institution's student database. The impact of this purge on this study population was sizable. Originally, the institution had indicated a total population of approximately 3700 adult vertical transfer students. After the purge, that number had dwindled to 2247. Many of the student email addresses for the pilot study, an exact figure was not able to be determined, were purged from the institutional system because they were no longer accurate.

To improve the response rate of the full study several actions were taken. First the recruitment material was revised to build a greater sense of connection to the research. This included wording to inspire a feeling of belongingness to a group, specifically membership in a group of adult transfer students. Dillman (2007) found this sense of belonging increased one's desire to participate. Additionally, the researcher requested the use of primary email addresses instead of those that are school

administered, but institutional lawyers determined the institution could not legally provide that information. Lastly, increasing the overall amount of questionnaires distributed from 40 to 1967 led to a better response.

Table 3.7

Pilot Study Response Rate

Participants	Responded Complete	Responded Partial	Undeliverable/ Unable to Contact	Opted Out	Response Rate
40	5	1	0	0	15 %

Although not ideal and in need of improvement, the pilot non-response rate was not atypical for this type of study. According to Fink (2003), it is not uncommon to receive a response rate of 20% for unsolicited web-based surveys. Other sources on web-based surveys indicate and adequate range to be anywhere from 15% (Dillman, 2007; Dillman, Smyth, & Christian, 2008) to 30% (Instructional Assessment Resource, 2007). The sample size for the full study was approximately 1967 students. A response rate of 15 – 30% would yield from 337 – 674 respondents. The purpose of this study was to identify precollege characteristics and community college variables linked to the academic and social adjustment process of adult vertical transfer students at the university. A response rate above 15% in this research context would yield useful and statistically significant results.

A review of the limited pilot study data revealed one item of concern. This was with the item including the word "learning." The statement, "Learning only took place within the walls of the classroom" led to uncharacteristically varied responses among participants. At this point in the study it was not possible to determine if "learning" was

interpreted differently by different individuals or if the respondents' experiences were really that different. This item was part of the CC-Scale (Philibert, 2005). A review of Philibert's dissertation revealed no issues with this item in the scale, nor did a review of another research article utilizing the scale (Philibert et al., 2008). It was determined to include the item in the full study. The five responses from the pilot study did not yield sufficient enough evidence to warrant a change.

The response items for the SE-Broad Scale (Lent, Brown, & Gore, 1997) were changed from a 5-point response scale to a 6-point response scale. This was done to ensure uniformity among scales.

There were positive aspects revealed in the pilot study. The survey instrument was found to be technically adequate. In a review of the limited data, there were no missing data in the complete responses and no suspicious entries. Of all participants who opened the survey, all but one completed the questionnaire. Additionally, respondents to the pilot study did not identify any problems with the questionnaire. The questionnaire content and format were viewed as satisfactory by the pilot study participants.

The data from the pilot study was included in the full research study. The questionnaire was not changed significantly, making the pilot study data usable in the full study. The informed consent document was incorporated in the pilot study and the pilot study participants were informed that their responses would potentially be used in the full study. Participants who did not respond to the pilot study were included in the full study contact list.

Reliability and Validity of Testing Instrument

Quantitative methods, particularly statistical analysis, were the primary means of data analysis for this study. The use of statistical analysis was congruent with both the theoretical and conceptual frameworks of this study. Astin (1984) suggested that is not "what the individual thinks" that defines involvement, but "what the individual does" (p. 298). One of the primary functions of the questionnaire to be designed for use in this study was to *measure* adult vertical transfer students' attitudes, values, and actions in specific areas

Reliability

Internal consistency reliability measures the consistency across the parts of a measuring instrument, with the parts being either individual questions or groups/subsets of questions. This answers the question to what extent do the individual items that go together to make up a test consistently measure the same underlying characteristics. In essence, internal consistency measures the degree of uniformity among items in a testing instrument. The first step in measuring internal consistency was to administer the questionnaire a single time to a group of individuals. Next the items were scored, after which a statistical procedure was applied to the data.

The method for assessing internal consistency used in this study was Cronbach's alpha, or alpha. Cronbach's alpha worked well for the questionnaire in this study because "it can be used with instruments made up of items that can be scored with three or more possible values" (Huck, 2008, p. 81). Cronbach's alpha was appropriate for attitude instruments similar to that being used for this study and other measures (Likert and Likert-type questions, for example) that contain a range of answers for each item

(Laanan, 2004, p. 340). The score one receives from calculating alpha, known as coefficient alpha, normally range between 0 and 1, although there is no lower limit to the score (Gliem & Gliem, 2003). For practical purposes, negative scores for coefficient alpha were considered 0. Scores closer to 1 indicated the greater internal consistency of items in the scale.

It was essential to reassess the questionnaire being developed for this study for any variations in scoring due to the combination of instruments. According to Creswell (2004), when a researcher modifies or combines instruments, the original reliability might not hold for the new instrument (p. 150). The instrument used in this study made use of scales from other questionnaires with well documented scores for both test-retest reliability and internal consistency. These include the SE-Broad Scale (Len et al, 1997), the PC-Scale (Bollen & Hoyle, 1990), and the CC-Scale (Philibert, 2005).

Prior administration of the SE-Broad Scale yielded coefficient alphas of .88 (Lent et al., 1997), .92 (Whorton, 2009), and .94 (Elias & Loomis, 2000). Whorton (2009) reported Cronbach alpha of .92 for the PC-Scale, while Chin et al. (1999) reported Cronbach alphas for the belongingness and morale constructs of .95 and .87 respectively. Philibert (2005) and Philibert et al. (2008) reported Cronbach alpha of .71 for the CC-Scale.

Internal consistency measures. Following are the Cronbach alpha scores for the four subscales used in this study. The CC-Scale consisted of 18 items ($\alpha = .78$). The EV-Scale consisted of 10 items ($\alpha = .88$). The SE-Broad Scale consisted of 12 items ($\alpha = .93$). The PC-Scale consisted of 6 items ($\alpha = .94$). See Appendices Q through T for a

corresponding inter-item correlation matrix for each scale. All scale measures exhibited adequate internal consistency reliability.

Validity

Validity is best captured by the word accuracy (Huck, 2008, p. 88). Research data are valid to the extent that measurement results are accurate; that is, does the instrument measure what it is intended to measure. It is possible for a testing instrument to be highly reliable, yet lack sufficient validity. However, the production of scores that are accurate implies reliability; accuracy requires consistency. Validity is not a property of the testing instrument that applies in all cases, but a measurement of accuracy of the instrument in measuring what is intended to measure for a particular group of participants in a particular context (Johnson & Christensen, 2008, p. 151). Two procedures were used to measure validity for the questionnaire to be used in this study: (a) content validity and (b) construct validity.

Content validity. Content validity involves making a judgment regarding the degree to which research based evidence suggests that items, scales, and questions on a test sufficiently embody the area of interest. According to Johnson and Christensen (2008), there are three steps in determining content validity. First, the researcher should thoroughly understand how the construct is defined and the content domain items should represent. This was accomplished by the researcher conducting an extensive review of research literature relevant to the topic area. Second, the content of the specific test should be examined. The questionnaire developed for this study was examined by experts in the content area. Experts in community college transfer, adult education, and fields of student adjustment and persistence were asked to examine the questionnaire and

give feedback pertaining to whether the test adequately represents the construct. After the researcher received the subjective opinions of experts and considered those opinions in relation to findings from the extensive literature review, a decision was made that the instrument demonstrated sufficient content validity.

Construct validity. Construct validity is defined by Babbie (2008) as "the degree to which a measure relates to other variables as expected within a system of theoretical relationships" (p. 514). This form or measure of validity is considered the most valuable, yet most difficult way of assessing a survey instrument (Litwin, 2003, p. 43). Construct validity is difficult because it is tested over time to validate a theory, and there are several ways to test for the validity of a construct. Huck (2008) outlined two ways in which construct validity might be determined for the questionnaire used in this study. One method was to provide correlation evidence illustrating that the constructs had a strong relationship with specific measured variables and a weak relationship with others. According to Huck, the relationships should be in a logical manner based on the conceptual framework of the testing instrument.

Factor analysis was conducted on scores from the testing instrument. This is a statistical procedure that analyzes correlations among test items and reveals the number of factors present; it also reveals if a test is uni- or multi-dimensional (Johnson & Christensen, 2008, p. 154). Factor analysis allowed the researcher to determine if different sets of items were related to different constructs, or different components of a broad construct. Exploratory Factor Analysis (EFA) was conducted on the CC-Scale, EV-Scale, SE-Broad, and PC-Scale scores. The purpose of this factor analysis was to establish construct validity. Although the construct validity of the CC-Scale, SE-Broad,

and PC-Scale had been established in past research studies, validity must be established for each individual use of a test (Shepard, 1993).

EFA was conducted on the CC-Scale, EV-Scale, SE-Broad, and PC-Scale. This statistical method distinguished factors that might be used to embody relationships among sets of interrelated variables. The extraction technique used was Principal Components Analysis (PCA). PCA forms linear combinations of observed variables and identifies a solution that accounts for the maximum amount of variance in the variables (Pett et al., 2003). Varimax rotation (Kaiser, 1958), an orthogonal rotation technique, was used to obtain a diverse as possible pattern of loadings on each factor, thereby assisting in interpretation. Factor loadings of .40 or higher were kept in the analysis because this is the standard level of acceptability (Propp & Rhodes, 2006).

Connecting Classroom Scale. Appendix U shows the mean and standard deviation for each CC-Scale item. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the CC-Scale was .84. This score is rated as great (Hutcheson & Sofroniou, 1999). The alpha reliability coefficient was .75. The results of the PCA revealed five factors explaining 61.4% of the total variance in the data. Only factors with eigenvalues above one were included. Table 3.8 displays the five factors that emerged from the CC-Scale.

Factor I, KNOWINT, included three items with factor loadings ranging from .77 to .89. The content of the items loading on Factor I represented knowledge interaction of the classroom environment. Items loading on Factor I reflected respondents' preferences for being exposed to new ideas, differing opinions, and open exchanges of ideas among

faculty and peers. Factor I accounted for 27.5% of variance in the data. The initial eigenvalue of Factor I was 4.96; after varimax rotation the eigenvalue was 4.79.

Table 3.8

Reliability Coefficients of Connecting Classroom Factors

Factor name	Description	Alpha	# of items
KNOWINT	Interaction of individual and knowledge	.85	3
CCLEARN	Connection of individual and learning content	.73	4
INVOLVEMENT	Classroom cornerstone of experience	.66	3
KNOWVALUE	Knowledge value	.57	3
PEERINT	Peer interaction	.65	3

Factor II, CCLEARN, included four items with factor loadings ranging from .57 to .71. The content of the items loading on Factor II represented the connection of the individual to learning content. Items loading on Factor II reflected respondents' perception of the connection of course content to their lives outside of school, including application of life knowledge in a classroom context, applying course learning directly to work, and life experiences being welcome in the classroom. Factor II accounted for 12.66% of variance in the data. The initial eigenvalue of Factor II was 2.28; after varimax rotation the eigenvalue was 2.46.

Factor III, INVOLVEMENT, included three items with factor loadings ranging from .71 to .87. The content of the items loading on Factor III represented the overarching concept of the connecting classroom. Items loading on Factor III reflected respondents' perceptions of the classroom being the fulcrum of the college experience. Factor III accounted for 8.75% of variance in the data. Factor III had an initial eigenvalue of 1.58 and an eigenvalue of 2.28 after varimax rotation.

Factor IV, KNOWVALUE, included three items with factor loadings ranging from .63 to .76. The content of the items loading on Factor IV represented knowledge value. Items loading on Factor IV reflected respondents' perceptions of types of valuable knowledge and judgments on knowledge dissemination. Factor IV accounted for 6.5% of variance in the data. Factor IV had an initial eigenvalue of 1.17 and an eigenvalue of 1.86 after varimax rotation.

Factor V, PEERINT, included three items with factor loadings ranging from .46 to .80. The content of the items loading on Factor V represented peer interaction. Items loading on Factor V representing respondents' attitudes toward peer interaction. Factor V accounted for 5.95% of variance in the data. Factor V had an initial eigenvalue of 1.07 and an eigenvalue of 1.65 after varimax rotation.

The five factors clearly defined the underlying premise of the concept of the connecting classroom. This concept presumes that for adult students, the classroom is the focal point of the college experience (Kasworm & Blowers, 1994; Kasworm, 2003). Within this college experience, adult learners' perceptions of knowledge, both in applicability to their lives outside of school and in acceptance of their outside knowledge inside the walls of the classroom, is principally important. Also important are the interactions adult learners have with peers and faculty in the classroom environment. The output of the factor analysis revealed five basic tenets of the connecting classroom concept, thereby strengthening the construct validity of this scale.

Environmental Variable Scale. Appendix V shows the mean and standard deviation for all items that comprise the EV-Scale. The KMO measure of sampling adequacy for the EV-Scale was .81. This score is rated as great (Hutcheson & Sofroniou,

1999). The alpha reliability coefficient was .88. The results of the PCA revealed two factors explaining 69.7% of variance in the data. Table 3.9 displays the two factors that emerged from the EV-Scale.

Table 3.9

Reliability Coefficients of the Environmental Variable Factors

Factor name	Description	Alpha	# of items
FAMILY	Family responsibility	.88	5
WORK	Work responsibility	.92	4

Factor I, FAMILY, included five items with factor loadings ranging from .71 to .86. The content of the items loading on Factor I represent respondents' family responsibility. Items loading on Factor I reflected respondents' perceptions of family responsibilities in relation to their ability to meet with advisors and faculty, study, and participate in social activities. Factor I accounted for 50.42% of variance in the data. Factor I had an initial eigenvalue of 5.04 and an eigenvalue of 3.45 after varimax rotation.

Factor II, WORK, included four items with factor loadings ranging from .78 to .90. The content of the items loading on Factor II represented respondents' work responsibility. Items loading on Factor II reflected respondents' perceptions of work responsibilities in relation to their ability to meet with advisors and faculty, study, and participate in social activities. Factor II accounted for 19.3% of variance in the data. Factor II had an initial eigenvalue of 1.99 and an eigenvalue of 3.42 after varimax rotation.

The explanations of factors for the CC-Scale and the EV-Scale were provided in great detail as these scales have not been used extensively in past research. It was

important to present as much information as possible to establish the construct validity of these two scale measurements. The SE-Broad and PC-Scale have been used extensively in past research. The construct validity of both scale measures has been well established in the literature (Bollen & Hoyle, 1990; Chin et al, 1999; Elias & Loomis, 2000; Lent et al, 1984; Lent et al, 1997; Whorton, 2009). Although it is important to establish construct validity for each administration of a scale measurement (Cronbach, 1951; Shepard, 1993), a more condensed overview of the EFA outputs for the SE-Broad and PC-Scale are presented below.

SE-Broad Scale. Appendix W shows the mean and standard deviation for all items that comprise the SE-Broad Scale. The KMO measure of sampling adequacy for the SE-Broad Scale was .60. This score is rated as mediocre (Hutcheson & Sofroniou, 1999). The alpha reliability coefficient was .92. The results of the PCA revealed three factors explaining 80.09% of variance in the data. Table 3.10 displays the three factors that emerged from the SE-Broad Scale.

Factor I, EXCEL, included five items with factor loadings ranging from .49 to .94. The initial eigenvalue for Factor I was 7.06 and after varimax rotation was 4.53. Factor I accounted for 58.83% of variance in the data. Factor II, COURSEWORK, included five items with factor loadings ranging from .48 to .90. The initial eigenvalue for Factor II was 1.49 and after varimax rotation was 3.63. Factor II accounted for 12.42% of variance in the data. Factor III, GPA, included two items with factor loadings ranging from .62 to .94. Factor III had an initial eigenvalue of 1.06 and an eigenvalue of 1.45 after varimax rotation.

Table 3.10

Reliability Coefficients of the SE-Broad Factors

Factor name	Description	Alpha	# of items
EXCEL	Confidence to excel over time	.91	5
COURSEWORK	Confidence to complete coursework	.91	5
GPA	Confidence in GPA	.61	2

Perceived Cohesion Scale. Appendix X shows the mean and standard deviation for all items that comprise the PC-Scale. The KMO measure of sampling adequacy for the SE-Broad Scale was .87. This score is rated as great (Hutcheson & Sofroniou, 1999). The alpha reliability coefficient was .94. The results of the PCA revealed only one factor with an eigenvalue greater that one. This factor accounted for 77.5% of variance in the data. Factor I included all six items that comprised the scale measurement. The factor loadings ranged from .79 to .91. The initial eigenvalue of Factor I was 4.63. No rotation method was utilized as only one factor was extracted.

Study Population

According to the Office of Institutional Research at the research site for this study, approximately 2019 adult students were considered vertical transfer students at the beginning of the full research study. This figure included adult vertical transfer students who had transferred in less than 12 credit hours from a community college, a group not included in the research study. Of the approximately 2019 adult vertical transfer students, 53.3% were female (n=1067) and 46.7% male (n=943). The mean age was 31.1 years (SD=7.7) with a low of 25 and a high of 70. The median age was 28. The study population constituted a convenience sample of adult vertical transfer students enrolled at a select public university in a southeastern state. Convenience sampling is regarded as

the weakest of all sampling procedures, but is warranted in situations in which this type of sampling is all that is available to the researcher (Ary, Jacobs, & Sorensen, 2010, p. 156). There is no way of estimating the error introduced through convenience sampling, so results must be interpreted with extreme caution and are not generalizable.

Selection criteria for participants in this study were based on the objectives of the study. Participants included in this study met the following criteria: (a) aged 25 years or above at the time of test administration; (b) be designated as having undergraduate status; (c) were enrolled in undergraduate coursework at the institution for a minimum of two months; and (d) have completed the equivalent of 12 semester hours or above of community college coursework with the intent of transferring credits to a university. Although broad, this set of selection criteria allowed for a diversity of participants, including those who were new transfers and those who had completed a semester or more at the university, part-time and full-time students, a variety of age ranges, and variation of credits earned and time spent at the community college.

Institution

The participating institution was selected based on the following criteria: (1) offered directed services to transfer students and (2) offered directed services to adult learners. There was a dual rationale behind selecting an institution that offered directed services to adult *and* transfer students. The institution was more likely to have detailed records pertaining to these subsets of students, including a database of contact information for these specific students. An institution that allocates financial resources to providing services to adult students and transfer students has a vested interest in overall performance of these students. This indicated both a willingness to be highly supportive

and involved in research that has the potential to be beneficial for the institution, and perhaps alluded to both a pro-transfer and pro-adult culture at the institution.

An institution from a southeastern state was selected that met the above outlined criteria, Metro Urban University (MUU). A pseudonym was used to help maintain participant anonymity. MUU is a selective, public, land-grant university located in a large southeastern city with an enrollment of approximately 20,000 students. MUU is a research intensive university and has a Carnegie classification of a High Transfer-In (HTI) institution (Carnegie Foundation for the Advancement of Teaching website, n.d.).

Study Design

Research questions influence the research design, data collection, and data analysis (Crotty, 1998; Merriam & Simpson, 2000). The researcher made use of data from a survey research design for this study because data required to investigate the specific research problems could not be acquired through an experimental process. When research problems cannot be addressed experimentally, a survey design is the most appropriate method (Creswell, 2009, Kerlinger & Lee, 2000, Merriam & Simpson, 2000). Survey methodology, particularly the use of questionnaires, are widely used in social research (Babbie, 2008, p. 278) and provide a systematic means by which a researcher collects data from a sample population for the purposes of analysis (Creswell, 2003).

Adult vertical transfer students were defined as students 25 years of age and above who transferred a minimum of 12 credit hours from a community college to a university for the purpose of completing a 4-year degree. Adult vertical transfer student demographic data, including age, racial/ethnic identification, gender, household income, and first-generation status was self-reported by participants on a questionnaire. The use

of self-report data has inherent limitations, including social desirability response bias. Social desirability response bias is defined as "the tendency for people to present a favorable image of themselves" when responding to questions, which has the potential to confound research results by leading to false or obscured relationships among variables (van de Mortel, 2008, p. 40). Information pertaining to academic and social adjustment was likewise obtained through the use of a questionnaire. The use of a survey research design was warranted because the researcher was collecting data regarding participants' attitudes, beliefs, or perceptions (Creswell, 2003; Kerlinger & Lee, 2000).

The majority of studies on college transfer are quantitative, utilizing existing data gathered by an institution or survey data compiled by a researcher(s) (Kozeracki, 2001, p. 63). Quantitative methods, particularly statistical analysis, were the primary means of data analysis for this study. Question one, what is the descriptive profile of the adult community college transfer student population, requires descriptive research, "a type of quantitative research that involves making careful descriptions of educational phenomenon" (Gall, Borg, & Gall, 1996, p. 374). Here descriptive statistics were useful in that the researcher employed strategies for "exploring, organizing, and describing data using … numerical summaries" (Moore, 2007, p. xxviii). The use of descriptive statistics was appropriate for the overall study because little is known about the adult community college transfer student population in any research context, as this has not yet been studied in-depth. The descriptive analysis of adult vertical transfer students unique to this research context provides a foundational understanding from which additional analysis might then be conducted.

The use of statistical analysis was also congruent with both the theoretical and conceptual frameworks of this study. Astin (1984) suggested that is not "what the individual thinks" that defines involvement, but "what the individual does" (p. 298). One of the primary functions of the questionnaire designed for use in this study was to *measure* adult vertical transfer students' attitudes, values, and actions in specific areas. According to Astin (1984), the theory of student involvement has both qualitative and quantitative features.

Data Collection

Dillman's (2007) guidelines for creating web-based surveys were followed in the design and delivery of the survey instrument. The guidelines include the following: (a) using social exchange elements such as developing trust; (b) utilizing follow-up requests; (c) making completion of the survey seem essential; (d) developing an easy-to-follow layout; (e) posing clear, simply worded questions; (f) making the survey easy to navigate; (g) strategic use of shading to separate questions and/or categories; (h) consistently placing a radio button before each possible response.

Prior to data collection the following activities were completed: (a) obtained permission from the authors/administrators to use the SE-Broad Scale (Lent, Brown, & Gore, 1997) (Appendix K), PC-Scale (Bollen & Hoyle, 1990) (Appendix L), and the CC-Scale (Philibert, 2005); (b) received permission from the university President or other responsible official to administer the survey instrument at the participating institution (Appendix E); and (c) received permission from the Institutional Review Board and Human Subjects Office of the University of Georgia to conduct the research (Appendix D).

Dillman's (2007) total design method was used as a guiding framework for the survey data collection process. Prior to the administration of the survey, all participants were sent an electronic announcement about the survey. A copy of the announcement used for the study is provided in Appendix G. The purpose of the announcement was to build trust between the researcher and the participants, as well as facilitate participants' sense of connection to the research. After an announcement was sent, all participants received an invitation to complete the survey along with a link to the survey instrument. Participants were informed that participation was voluntary and were notified of any risks associated with participation. Lastly, follow up invitations were sent to encourage non-respondents to complete the survey and to thank those participants that completed the survey instrument.

Table 3.11

Full Study Timeframe

Action	Time
Conduct Pilot Study	November – December 2010
Analysis of Pilot Study Data	Late December 2010 – January 2011
Conduct Full Study	February 2011 – March 2011
Data Analysis	March 2011
Writing	March – May 2011

Data collection took place over a 30 day period beginning on February 23, 2011. The survey was closed on March 21, 2011. The timeframe was ideal as it allowed sufficient time for Fall 2010 transfers to have completed one semester at the university. Transfer students who were at or near completion of their degree were more likely than not to be enrolled in the Spring 2011 semester and be on course for a May 2011 graduation date. This timeframe ensured capturing a variety of respondents relating to length of time at the university.

Survey Administration

Online survey response rates fall below those of mail surveys (Fink, 2003). According to Fink, it is not uncommon to receive a response rate of 20% for unsolicited surveys. There are ways in which a researcher might increase response rates for an online survey. Sue and Ritter (2007) suggest the first way to increase response rates is to use a web-based survey, such as those found on sites like SurveyMonkey®. SurveyMonkey® was used in this study. Additionally, follow-up invitations via email and incentives have been shown to increase response rates. Göritz, (2006) found that incentives motivate people to start a web survey. Incentives both increased the likelihood an individual would start a survey by 19% and that an individual would complete a survey by 27%. Interestingly, both material and nonmaterial incentives increased response rates. Offering a data summary and convincing respondents that participation would be fun were two effective nonmaterial incentives.

On February 23, 2011, a link to the survey instrument was sent to each participants' institution provided email address (*N=1900)*. A total of 318 participants responded to the first survey invitation. This translated to a response rate of 16.73%. One week later on March 2, 2011, the researcher sent a follow-up reminder to participants who had not responded to the original invitation and to those that had only partially completed the questionnaire. An additional 126 participants responded, bringing the response rate to 23.37%. A final reminder was sent on March 14, 2011. At this point, the responses totaled 499 for an unadjusted response rate of 26.3%.

Adjusting the Response Rate

During the course of the data collection process, nine participants emailed the researcher directly requesting to be removed from the mailing list because they did not meet the requirements to participate. Of the nine respondents, eight were not transfer students; the other respondent was not a degree seeking student. The contact information for these participants was removed from the survey database. The researcher received two out-of-office return email responses from participants who had recently graduated and were forwarding their student email to a non-student account. These two individuals were also removed from the database. An additional 19 individuals opted out of participating in the survey. (An opt-out link is required on all emails sent through SurveyMonkey®.) At this point, the survey population totaled 1870 leading to an adjusted response rate of 26.7%.

After initial adjustment of the response rate, the researcher began analyzing the data. Of the 467 collected responses, 37 participants (not including the nine who sent emails to the researcher) answered no to at least one of the two filter questions. By definition, these individuals were not eligible to participate in the survey and were removed from the contact database. This step reduced the size of the survey population to 1833. The number of responses dropped from 499 to 432. These changes led to an adjusted response rate of 25.2%.

Considering the number of individuals responding negatively to the filter questions and the problems with contact information experienced in the pilot study, the researcher contacted the participating institution to request another set of contact data with new filters applied. The researcher then compared the new contact list with the

contact list used in the study. This step uncovered an additional 67 individuals included in the study who were not on the new contact list. This reduced the survey population database to 1766 individuals. After working with the participating institution, it was determined that these individuals had not met the credits transferred in requirement to be included in the survey. The new adjusted response rate was now 25%.

A final review of the survey data led to the removal of 43 surveys because the respondents did not answer the majority of the survey questions. The result of this step reduced the number of usable surveys to 419. The final response rate achieved for this study was 25%.

Demographic Information for Study Respondents

The mean age of respondents was 33.3 with ages ranging from a low of 25 to a high of 71. There was a nearly identical distribution of female to male respondents with 51.9% to 48.1% respectively. A majority of the respondents self-identified as White (62.9%). African-American respondents accounted for 16% of survey participants, Hispanics 5.1%, Asian-Americans 3.7%, and 12.2% Other.

Participants who attended an urban community college accounted for 45.3% of survey participants, 29.5% attended a suburban community college, 13.6% attended a rural community college, and 11.6% attended multiple institutions. The mean grade point average of respondents was 3.35 with a minimum of 1.7 and maximum of 4.0. The mean of credits earned at the community college was 59.35 and 66% of respondents had earned an Associate's degree. Only 36.6% of respondents utilized the services of a transfer advising center. Table (3.12) provides a summary of the personal characteristics of the individuals who provided usable responses to the survey.

Table 3.12

Summary of Survey Respondent Characteristics

Variable	*N*	Value
Age	367	M = 33.30, SD = 8.08
Gender (*N* = 375)		
Female	194	51.9%
Male	181	48.1%
Race/Ethnicity (*N* = 374)		
African American	60	16.0%
Asian American	14	3.7%
White	235	62.9%
Hispanic	19	5.1%
Other	46	12.2%
Household Income (*N* = 363)		
Less than $29,999	180	49.4%
$30,000 to $49,999	83	23.0%
$50,000 and above	100	27.6%
Type of Community College (*N* = 412)		
Urban	187	45.4%
Suburban	121	29.4%
Rural	56	13.6%
Multiple	48	11.7%
Associate's Degree (*N* = 411)		
Yes	272	66.2%
No	139	33.8%

Data Preparation

After the data collection process ended, the researcher performed the necessary steps in data preparation for statistical analysis to address the research questions guiding the study. The data were: (a) prepared, cleaned, and scrutinized to merge files if necessary, (b) checked for missing data, and (c) recoded and scaled variables. These steps were necessary as SPSS® 19.0 was the main computer program by which the statistical analysis was conducted. The labeling of all nominal, ordinal, and categorical data was also be used to ensure the proper functioning of SPSS® 19.0.

Initial Data Preparation

The researcher downloaded questionnaire data from SurveyMonkey® into a Microsoft Excel® spreadsheet. The purpose of this step was to format the data in such a way as to make analysis possible in SPSS® 19.0. The first two rows of the Microsoft Excel® spreadsheet consisted of headers inserted by SurveyMonkey®. The first row included item number and the second row the verbatim wording of the item. The researcher deleted the second row, but kept the first header row. SurveyMonkey® also included six columns under the headings of Responder, Collector ID, StartDate, EndDate, IP Address, and Email Address. These columns, some of which were empty because the researcher set the data collection settings to anonymous in SurveyMonkey®, were deleted. The researcher then deleted the rows associated with respondents who answered no to the filter questions inserted at the beginning of the survey and the rows of data without usable responses.

Three items on the questionnaire allowed for multiple responses. The items were "Type of Community College," "I participated in the following extra-curricular activities while attending the community college," and "Ethnicity." Each of the items had been separated into columns corresponding to each answer choice. Therefore, the item for community college type was separated into three separate columns, the item for extra-curricular activities was separated into eight separate columns, and the item for ethnicity was separated into eight columns. Additionally, specific answer selections within each item had a corresponding numerical value associated with it. For example, if a respondent had chosen "Academic Clubs" and "Student Government" under the extra-curricular item, two columns would be populated with differing numerical values. The

column under “Academic Clubs” was populated with a one because “Academic Clubs” was the first answer choice. The column under “Student Government” was populated with a four because “Student Government” was the fourth answer choice.

This type of data entry was not conducive to the data analysis techniques used after importing the Microsoft Excel® spreadsheet into SPSS® 19.0. The researcher determined that instead of importing the data as is, it was more appropriate to change the specific numerical representations within each column with a standard value of one denoting an affirmative answer choice. The researcher used the find and replace function of Microsoft Excel® to convert the specific numeric representations to the standard value of one for an affirmative choice. This step was conducted for all columns of the multiple selection items. After importing into SPSS® 19.0, the values were coded so that a value of one represented a “Yes” response and a value of zero represented a “No” response for these items.

Missing and Incorrect Data

The first question guiding this study addressed a descriptive profile of the adult vertical transfer student in this research setting. Many items on the survey instrument specifically address this question and were located throughout the questionnaire, with multiple items located at the start of the questionnaire. In many instances, a respondent answered the items at the beginning of the questionnaire, but did not fully complete it. As a result, there were some respondents included in the data set addressing the first question guiding this study, but were not included in subsequent analysis addressing questions two through four. The data set used to address question one had an

approximate value of n = 409, whereas the data set addressing questions two through four had an approximate value of n = 377.

After the data were imported in to SPSS®19.0, the researcher searched for missing data in each of the items making up the CC-Scale (Philibert, 2005), EV-Scale, SE Broad Scale (Lent et al, 1997), and the PC-Scale (Bollen & Hoyle, 1990). This was carried out using the "Transform" menu in SPSS®19.0. First, the researcher computed a new variable from each scale using the "Nmiss" function within the "Compute" screen. The "Nmiss" command returns a count of arguments that have missing values in a variable form. The new variables, named CCMissing, EnvVarMissing, SEMissing, and PerCohMissing by the researcher, were then run using a frequency distribution. The output of the frequency distribution contains the amount of respondents that have a specific amount of missing entries.

The missing entry counts were as follows. Twenty out of 378 respondents failed to respond to one of the items in the CC-Scale. With 18 items on the scale and 378 respondents, there were 6804 total possible item responses. Missing data represented .003% of total possible item responses in the scale. Of the 375 respondents in the EV-Scale, eight respondents failed to respond to one of the items. With 10 items on the scale and 375 respondents, there were 3750 total possible item responses. Missing data represented .002% of total possible item responses in the scale. Twelve respondents failed to respond to one of the items in the SE-Broad Scale. With 12 items on the scale and 375 respondents, there were 4500 total possible item responses. Missing data represented .003% of total possible item responses in the scale. Five respondents failed to respond to one of the items in the PC-Scale. With six items on the scale and 375

respondents, there were 2250 total possible item responses. Missing data represented .002% of total possible item responses in the scale. A review of the missing items revealed no issues specific to a singular item on the questionnaire. One respondent from each the CC-Scale and the SE-Broad scale failed to respond to two items. These respondents were not calculated into the scale scores for these measurements.

To account for missing data in the scaled scores from each scale measurement, the researcher used mean replacement. For those respondents with one missing value within each scale, the mean of all other responses in the scale were used to replace the missing value. Each scale measurement measures a construct, with the sum of each item used to measure the construct more reliably than would be possible if only one item were used. In these types of cases, it is recommended to use this type of mean replacement if the number of missing data is small (Schwab, 1999). This procedure was conducted for each scale measurement, and after specific items on the CC-Scale were reversed coded.

One participant failed to respond to the item regarding Associate's Degree completion. A review of items related to social demographics revealed one missing response for gender, one for first-generation college status, 13 for household income, 10 for age, and two for ethnicity. Missing items for all social demographic categories were replaced with a "Decline to State" response.

Incorrect Data. When running the regression analyses, the researcher utilized Cook's (1979) distance to identify any outliers, specifically those that had a large degree of influence on the regression models. During this process, one entry for university GPA was identified as an outlier. The researcher utilized the output of SPSS® 19 to locate the

outlier as an entry of 38 for GPA. The researcher determined that it was highly likely the respondent failed to enter a decimal point and changed the GPA entry to 3.8.

Recoding of Variables and Scaled Scoring

Three items within the CC-Scale were reverse coded. The items were: (a) I just wanted to memorize facts; (b) I liked studying alone while attending community college; (c) I wanted faculty to tell me what I needed to learn and then I would learn that. Theoretically, these three items were directionally different from the remaining 15 items that were part of the composite scale. Each item had a negative connotation within this scale, necessitating reverse coding prior to computing a scale score. A new variable was computed for the three items in which each score was reversed. Thus, a score of one in the original variable was replaced with a score of six and a score of six in the original variable was replaced with a score of one. This new assignment of scores was also applied to two and five, and three and four.

Connecting Classroom and Perceived Cohesion Scales. After recoding variables, the researcher computed the composite scores for all response scales. The CC-Scale was comprised of 18 individual items with a possible score ranging from one (Strongly Disagree) to six (Strongly Agree). The lowest possible combined CC-Scale score was 18 and the highest possible combined score was 108. The PC-Scale was comprised of six individual items with a possible item score ranging from one (Strongly Disagree) to six (Strongly Agree). The lowest possible combined score was six and the highest possible combined score was 36.

SE-Broad Scale. The SE-Broad scale was comprised of 12 individual items with a possible score ranging from one (No Confidence) to six (Complete Confidence). As

originally designed, the SE-Broad had a lowest possible combined score of zero, but for this study a "No Confidence" response was given a score of one. This change in measurement was for consistency in data analysis. The lowest possible combined score for the SE-Broad in this study was 12 and the highest possible combined score for the SE-Broad scale was 72.

Two issues arose in using the SE-Broad in this research study. Like similar testing instruments, the SE-Broad was designed for traditional-aged students who were somewhat new to higher education. Many of the participants in this study had already completed two years of higher education coursework, a byproduct of being a vertical transfer student. Therefore, some of the response items might not apply. The first four items of the SE-Broad in particular, which address confidence in satisfactorily completing general education coursework, had no relevance to a transfer student who had already completed an Associate's degree. Typically, those who earn an Associate's degree have already completed their general education degree requirements. To determine the implications of this limitation on future data analysis, the researcher conducted tests to determine whether there were significant differences in academic self-efficacy between respondents who had completed an Associate's degree and those who had not.

The academic self-efficacy data were tested for normality to determine if the assumptions for a *t*-test were met. The assumptions of a *t*-test include: (a) randomly selected sample; (b) normal distribution of dependent variable; and (c) independence (Gliner, Morgan, & Leech, 2009). The SE-Broad data were not normally distributed

(Appendix N). When the assumptions of the *t*-test are violated, it is common to use a Mann-Whitney *U* test to analyze the data (Comrey & Lee, 2007).

The Mann-Whitney *U* test is a nonparametric method of comparing two population distributions and is used when comparing the distributions of two independent groups. If the result of the test is significant, it is indicative of a significant difference between to two sample medians (Sheskin, 2007). The corresponding *Z*-score is used to determine whether there is a significant difference in the ranks of scores between the two groups.

Table 3.13

Comparison of Mean Levels of Academic Self-Efficacy between Associate's Degree Completer and Non-Completer Respondents

	Academic Self-Efficacy	
	Mean	Mean Ranks
Associate's Degree	62.72	187.60
No Associates Degree	61.75	187.30

Test of significance: $Z = .02$, $p = .98$

A Mann-Whitney *U* test was conducted to compare the distributions of academic self-efficacy scores of respondents based on Associate's degree status (Table 3.13). The distribution of the ranks of academic self-efficacy for respondents with an Associate's degree and those without an Associate's degree did not differ significantly ($Z = .02$, $p = .98$). These results suggested that the academic self-efficacy scores of Associate's degree completer and non-completer responses did not come from different distributions, and that there was not a significant difference in the levels of academic self-efficacy between Associate's degree completers and non-completers.

The diversity of survey respondents necessitated the addition of a "N/A" selection for items that sought confidence levels over long periods of time. This was understandable as many participants in this study had already completed an Associate's degree and were not expecting to remain at the university for an additional three years. Others had already earned multiple credits at the university and were potentially in their last semester prior to earning a Bachelor's degree. Of the 375 respondents, 11 chose the "N/A" selection for the SE-Broad item regarding confidence in earning a 2.0 cumulative GPA after three years of study. The "N/A" selection corresponded to a value of 7 in SPSS® 19.0. In rare cases, respondents had the potential to score higher than the maximum score for the SE-Broad.

Table 3.14

Comparison Mean Levels of Academic Self-Efficacy between N/A Survey Respondents and Non-N/A Survey Respondents on SE-Broad Item Six (N/A = 7)

	Academic Self-Efficacy	
	Mean	Mean Ranks
N/A Selection	66.55	239.79
Non-N/A Selection	61.75	187.30

Test of significance: $Z = -5.03$, $p = .00$)

It was determined that the academic self-efficacy data for this set were not normally distributed (Appendix O). A Mann-Whitney *U* test was conducted to compare the distributions of academic self-efficacy scores of respondents who selected the "N/A" option ($n = 11$) and those who selected one of the other six options ($n = 364$) to ascertain the impact of a value of 7 for "N/A" responses. The distribution of the ranks of academic self-efficacy scores for "N/A" and Non-"N/A" survey respondents did differ significantly ($Z = -5.03$, $p = .00$). These results indicated that there was a significant difference in the levels of academic self-efficacy scores of the "N/A" and Non-"N/A" survey respondents.

The researcher further examined the data to uncover whether or not the "N/A" respondents had already completed enough credits to potentially graduate within three years, and if those credits had been completed while maintaining a minimum GPA of 2.0. To do this, the researcher computed a new variable that included the sum of credits earned at the university and credits transferred in from the community college. Based specifically on credit hours, the eleven respondents who chose the "N/A" option were all conceivably within three years of completing a Bachelor's degree. "N/A" respondents had a mean total of 84 credits, with a low of 42 and a high of 120. The mean GPA for "N/A" respondents was 3.6, with a high of 4.0 and a low of 3.3.

All "N/A" respondents were conceivably within three years of earning a Bachelor's degree and none had a GPA lower than 2.0. In theory, all would have complete confidence in their ability to earn a minimum GPA of 2.0 over the time span detailed in the scale item because they had already done so. However, as this item did not apply, the "N/A" selection was treated as a score of zero.

Table 3.15

Comparison Mean Levels of Academic Self-Efficacy between N/A Survey Respondents and Non-N/A Survey Respondents on SE-Broad Item Six (N/A = 0)

	Academic Self-Efficacy	
	Mean	Mean Ranks
N/A Selection	62.72	187.60
Non- N/A Selection	61.75	187.30

Test of significance: $Z = -1.69$, $p = .09$

A Mann-Whitney *U* test was conducted to compare the distributions of academic self-efficacy scores for "N/A" and Non-"N/A" respondents when "N/A" responses were given a value of zero (Table 3.15). The distribution of the ranks of academic self-efficacy scores for "N/A" and Non-"N/A" respondents when "N/A" responses were given

a value of zero did not differ significantly (Z = -1.69, p = .09). These results indicated that there was not a significant difference in the levels of academic self-efficacy for "N/A" and Non-"N/A" respondents when "N/A" responses were given a value of zero.

Environmental Variable Scale. The EV-Scale consisted of 10 items with response choices ranging from one (Strongly Disagree) to six (Strongly Agree). The lowest possible combined score was 10 and the highest possible combined score was 60. Similar to the SE-Broad, the EV-Scale utilized four items regarding employment influences that contained a "N/A" response selection to account for those individuals who were not employed while attending the community college. Of the 375 respondents on the EV-Scale, 10 respondents select "N/A" for all employment related items. As with the SE-Broad "N/A" responses, the researcher gave the "N/A" responses for the EV-Scale a score of zero.

Table 3.16

Comparison Mean Levels of Environmental Influence between N/A Survey Respondents and Non-N/A Survey Respondents on Environmental Variable Scale Items 7 - 10: N/A = 0

	Environmental Influence	
	Mean	Mean Ranks
N/A Selection	23	85.45
Non-N/A Selection	33.63	191.32

Test of significance: Z = -3.04, p = .002

The environmental influence data were not normally distributed (Appendix P). A Mann-Whitney U test was conducted to compare the distributions of environmental influence scores of "N/A" and Non-"N/A" survey respondents for items seven through 10 of the EV-Scale (Table 3.16). The distribution of the ranks of environmental influence scores for "N/A" and Non-"N/A" survey respondents differed significantly (Z = -3.04, p

= .00). These results suggested that there was a significant difference in the levels of environmental influence between "N/A" and Non-"N/A" survey respondents.

To correct this issue, the researcher treated the "N/A" response selections as missing data. When computing the scale score for the EV-Scale, only those respondents with one missing item of data were included. Therefore, the 10 respondents who selected "N/A" for items seven through 10 on the EV-Scale were excluded from any data analysis using the composite score of the EV-Scale.

Data Analysis Plan

Quantitative methods, particularly statistical analysis, were the primary means of data analysis for this study. The researcher used SPSS® 19.0 for all data analysis. To address the first guiding question of this study the researcher utilized descriptive research, "a type of quantitative research that involves making careful descriptions of educational phenomenon" (Gall, Borg, & Gall, 1996, p. 374). Descriptive statistics for this study included means, standard deviations, and frequencies. The researcher recoded the age and community college GPA variables into age ranges for specific data analysis. The household income variable was coded into a dichotomous variable indicating respondents who reporting household incomes of above and below $29,999. Two dichotomous variables were also created to differentiate respondents who did work and those who did not, and to differentiate those who had family responsibilities and those who did not.

Analysis of variance (ANOVA), simple linear regression, and multiple linear regression were used to address questions two, three, and four. Simple linear regression and multiple linear regression provided information on which precollege characteristics

and community college variables, if any, affected or influenced participants' academic and social adjustment at the university. In cases of multiple nominal variables, variables were recoded into dichotomous dummy variables. This was true for community college type, household income, extra-curricular activities, and ethnicity. Ethnicity, for example, was coded into a dichotomous dummy variable of White and Non-White for use in subsequent linear regression models.

Simple coding was also used for the ethnicity variable. Simple coding allowed each level of a variable to be compared to a reference level. For this step, ethnicity was coded into three variables corresponding to African American, White, and Other. These three variables were then dummy coded into two dichotomous variables for use in initial regression analysis on precollege characteristics. In regression analysis, categorical variables with *k* levels are transformed into *k-1* variables, each with two levels (Bruin, 2006). In this case, ethnicity was coded into variables corresponding to African American and Other, with White being the reference category.

The fourth question guiding this research study was also addressed using ANOVA and multiple linear regression. The rationale for utilizing multiple linear regression was to identify those variables most influential in the academic and social adjustment process of adult vertical transfer students at the university. Variables were entered into the regression equation in the assumed order in which they were believed to be experienced by the student; this process was utilized in a similar study on traditional aged vertical transfer students (Laanan, 2007). Precollege characteristics were the first group to enter the model, followed by community college experiences. For this step some variables, including extracurricular activities, were dummy coded into dichotomous

variables. In some instances, variables with many dimensions, such as ethnicity, were both dummy coded into a dichotomous variable and simple coded.

Limitations

This study utilized a convenience, non-random sample of adult community college transfer students at a single university. Convenience sampling is considered a weak sampling technique (Ary, Jacobs, Razavieh, & Sorenson, 2010, p. 156) and no statistical inferences can be drawn from this study. Any generalizations made were based only on data collected from the immediate sample. Non-response error was another sampling related limitation of this study, especially in light of a response rate below 30%. There was the potential that significant differences between those who did respond to the survey and those who did not were present. Data gathering utilized a questionnaire, so the willingness and ability of participants to reply to all questions in a timely manner and to respond accurately could not be totally controlled by the researcher.

This study employed a cross-sectional survey research design. Because of this methodology, all findings were limited and bounded by this design. Cross-sectional research designs are less robust than longitudinal designs (Astin & Lee, 2003). Measuring any change in participants over time was not possible in this type of research design. Lastly, there was the potential for unobservable characteristics or variables to impact the constructs being investigated that could not be detected by the statistical analysis employed in this study.

The vertical transfer pathway is complex and multi-faceted. As mentioned previously, there are three components that influence successful academic and social adjustment at the university: (a) precollege characteristics; (b) community college

experiences; and (c) university experiences. Within these constructs are a multifaceted group of variable types, including social, academic, environmental, cultural, and institutional. In order to make this study more manageable, certain components and variables were intentionally omitted, most obvious the omission of university experiences.

The purpose of this study was to investigate only precollege characteristics and community college experiences to reveal variables that influence the academic and social adjustment process of adult vertical transfer students at the university. The importance of university experiences in this process is evident. Social, academic, and institutional variables at the university clearly impact academic and social adjustment of adult vertical transfer students. However, these factors were out of the purview of this study. Excluding university experiences from this equation was an apparent but necessary limitation.

CHAPTER 4

RESEARCH FINDINGS

This study focused on the vertical transfer pathway for adult students. More specifically, the purpose of this research study was to provide a descriptive profile of the adult vertical transfer student, and to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of adult vertical transfer students at the university. Four questions guided this research study:

1. What is the descriptive profile of the adult vertical transfer student population?
2. What precollege characteristics influence the academic and social adjustment process of adult vertical transfer students at the university?
3. What community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university?
4. Are the most influential variables demographic, academic (GPA), social, or environmental?

This chapter presents the results of the statistical analysis for each of the research questions. It is divided into four sections; each section addresses one of the four questions.

Research Question #1: What is the descriptive profile of the adult community college transfer student population?

The first research question guiding this study addressed the descriptive profile of the adult vertical transfer student population. Leading with a descriptive question was warranted for this study because adult vertical transfer students have not yet been studied in-depth. This descriptive approach allowed the researcher to establish an initial understanding of the adult vertical transfer population unique to this research setting. Two descriptive profiles are presented. First, a brief profile of the population attending the institution used for this study is presented. Second, an in-depth descriptive profile of respondents is discussed.

Profile of Adult Vertical Transfers Attending MUU

The researcher utilized institutional data to outline an initial profile of the adult vertical transfer student at the participating institution. MUU is a selective, public, land-grant university located in a large southeastern city with an enrollment of approximately 20,000 students. MUU is a research intensive university and has a Carnegie classification of a High Transfer-In (HTI) institution (Carnegie Foundation for the Advancement of Teaching website, n.d.). The following information is based on *all* adult vertical transfer students enrolled at MUU.

According to the Office of Institutional Research at MUU, approximately 2019 adult students were considered vertical transfer students at the beginning of this research study. This figure included adult vertical transfer students who had transferred in less than 12 credit hours from a community college, a group not included in the research study. Of the approximately 2019 adult vertical transfer students, 53.3% were female

(*n*=1067) and 46.7% male (*n*=943). The mean age was 31.1 years (*SD*=7.7) with a low of 25 and a high of 70. The median age was 28.

In terms of ethnicity, 61% identified as White. African American students accounted for 18% of adult vertical transfer students, while Hispanic and Asian American students made up 6% and 5% respectively. Six percent of students did not identify with a racial/ethnic category, while 1% of students self-identified as bi/multi racial. The remaining population included 2% International, 1% Native American, and less than 1% Pacific Islander students.

Table 4.1

Descriptive Statistics of Institutional Population

	M	*SD*	Low	High
Age (*N* = 2019)	*31.1*	7.7	25	70
Race/Ethnicity			% of population	
African American			18	
Asian American			5	
Hispanic			6	
International			2	
Native American			1	
Pacific Islander			>1	
White			61	
Race/Ethnicity Not Listed			6	
Gender				
Male (*N* = 943)			46.7	
Female (*N* = 1067)			53.3	

Profile of Study Respondents

The questionnaire used for this study was sent to vertical transfer students at the participating institution. Criteria for selection of the study sample included vertical transfer students who (a) were aged 25 years or above during the time frame of the study and (b) had transferred in a minimum of 12 credit hours from a community college.

Applying these criteria resulted in a sample of 409 participants who supplied usable data for this study. Descriptive data were collected on age, race/ethnicity, household income, first-generation status, type of community college attended, and Associate's degree status. Table 4.2 presents descriptive statistics for the study participants.

Table 4.2

Descriptive Statistics of Survey Respondents

Variable	*N*	% of sample
Age (*N* = 376)		
25 – 34	245	65.2
35 – 44	79	21.0
45 – 54	36	9.6
55+	6	1.6
Decline to State	10	2.7
Gender (*N* = 375)		
Female	194	51.7
Male	181	48.3
Race/Ethnicity (*N* = 374)		
African American	60	16.0
Asian American	14	3.7
White	235	62.8
Hispanic	19	5.1
Native American	2	.5
Bi/Multi Racial	23	6.1
Other	8	2.1
Decline to State	13	3.5
Household Income (*N* = 363)		
Less than $29,999	180	49.4
$30,000 to $49,999	83	23.0
$50,000 to $89,000	69	19.0
$90,000 and above	31	8.6
First-generation Status (*N* = 375)		
Yes	114	30.4
No	261	69.6

Demographic Data

Age. The mean age of respondents was 33.3 (SD=8.1) with ages ranging from a low of 25 to a high of 71. The median age was 31. The largest group of respondents (*n*=245), 66.9%, fell within the 25-34 year old age range. Twenty-one percent of respondents (*n*=79) were within the 35 – 44 year old age range. Those respondents aged 45 and above (*n*=42) made up the remaining 11.4% of respondents.

The range of ages for adult vertical transfer students began at 25 and ended at 71, producing an age range of 46 years. The median value of 31.0 combined with the mode of 25 demonstrated the young adult nature of the adult vertical transfer student body. The large range of ages and the percentages of those participants in higher age brackets demonstrated the diverse nature of this group in relation to age.

Gender and ethnicity. Female respondents (*n*=194) outnumbered male respondents (*n*=181) 51.7% to 48.3% respectively. In terms of ethnicity, 62.8% identified as White. African American students accounted for 16% of adult vertical transfer students, while Hispanic and Asian American students made up 5.1% and 3.7% respectively. Native American respondents made up .5% of the study sample. Participants who self-identified as bi/multi racial accounted for 6.1% of respondents. Those who chose Other made up 2.1%, and those who declined to self-identify with any option made up 3.5%.

Table 4.3 presents data on the racial/ethnic demographics of subjects. Of the study respondents, White males made up the largest group (*n*=126). White females (*n*=109) were the next largest group, followed by African American females (*n*=42), then African American males, (*n*=18). White males accounted for 33.7% of survey

respondents, White females 29.1%, African American females 11.2%, and African American males 4.8%.

Household income and first-generation status. Of all respondents, 49.4%, came from families with a yearly household income below $29,999 (*n*=180). Respondents with household incomes between $30,000 and $49,999 (*n*=83) accounted for 23.0% of survey respondents. Nineteen percent of survey respondents had a yearly household income of between $50,000 and $89,000 (*n*=69), while 8.6% of respondents (*n*=31) had yearly household incomes of $90,000 and above. Respondents who were first-generation college students (*n*=114) accounted for 30.4% of participants.

Table 4.3

Ethnic Demographics of Respondents

	Gender		
	Female	Male	Total
Ethnicity			
African American	42	18	60
Asian American	4	10	14
White	109	126	235
Hispanic	12	7	19
Native American	1	1	2
Bi/Multi Racial	15	8	23
Other	4	4	8
Decline to State	7	6	13
Total	194	180	374

Community College Descriptive Data

Table 4.4 presents specific academic and social data at the community college. These include type of community college attended, extra-curricular activities, credits earned, Associate's degree status, and use of a transfer advising center.

Community college type. Of all respondents, 45.4% attended an urban community college (*n*=187). Just under 30% of respondents (*n*=121) completed coursework at a suburban community college. Transfer students from rural community colleges (*n*=56) represented 13.6% of the sample. Respondents who attended multiple types of institutions (*n*=48) accounted for 11.7% of the sample.

Associate's degree status and credits earned. The majority of respondents in this sample (*n*=272) had earned an Associate's degree prior to transferring to the university. This is also reflected in the amount of credits earned at the community college. For the entire sample (*n*=402), the mean credits earned was 59.4 (*SD*=20.2), with a low of 12 and a high of 100. The median credits earned was 64 credit hours, which is approximately the total credit hours needed to earn an Associate's degree. The majority of students (*n*=307) transferred in 45 credits or more, accounting for 77.5% of the population.

Means were calculated for credits earned by gender, age range, and ethnicity. Means and standard deviations for GPA are presented in table 4.5. The data revealed female respondents had a mean value for earned credits of 61.3 (*SD*=21.7) compared to 58.8 (SD=18.9) for male respondents. The range of mean values for credits earned by age, from a high of 62.3 for respondents aged 35 – 44 to a low of 58.9 for respondents aged 45 – 54, was well within the standard deviation of those scores. Similarly, a review

of the mean value of credits earned by ethnicity demonstrated slight differences among values.

Table 4.4

Community College Descriptive Data

	N	% of sample
Type of Community College (*N*=412)		
Urban	187	45.4
Suburban	121	29.4
Rural	56	13.6
Multiple	48	11.7
Associate's Degree Status (*N*=411)		
Yes	272	66.2
No	139	33.8
Credits Earned (N=398, *M*=59.4, *SD*=20.2)		
12 – 24	23	5.8
25 – 44	66	16.7
45 and above	307	77.5
GPA (*N*=411, *M*=3.36, *SD*=.5)		
Less than 2.0	4	1.0
2.1 to 3.0	120	30.1
3.1 to 4.0	275	68.9
Transfer Center Use (*N*=407)		
Yes	149	33.6
No	258	63.4
Extracurricular Activities (*N*=409)		
Academic Clubs	29	.1
Social Clubs	16	.04
Student Organization	73	18
Student Government	12	.03
Intramural Sports	6	.01
Official Sports	3	.01
Other	30	.1
Did Not Participate	289	71

Community college GPA. In addition to transferring in an average of 59.4 credit hours, the respondents to this questionnaire self-reported high GPAs. The mean GPA for this sample (*n*=409) was 3.36 (*SD*=.5), with a low of 1.7 and a high of 4.0. Participants with a GPA of 3.1 or above (*n*=275) accounted for nearly 69% of all respondents. Transfer students with GPAs ranging from 2.1 to 3.0 (*n*=120) accounted for 30.1% of respondents. One percent of respondents self-reported a GPA below 2.0 (*n*=4).

Table 4.5

Mean Community College Credits Earned by Gender, Age Range, and Ethnicity

	Mean Credits Earned	SD
Gender		
Male	59.0	18.0
Female	61.3	21.7
Age Range		
25 – 34	59.6	19.4
35 - 44	62.5	21.6
45 – 54	58.9	20.6
55+	59.8	26.1
Ethnicity		
African American	60.6	21.5
White	59.5	19.3
Other	61.8	21.2

Means were calculated for GPA based on gender, age range, and ethnicity. Means and standard deviations for GPA are presented in table 4.6. The data showed similar GPAs across all participants. Female participants had a slightly higher GPA than male participants. Older participants, those in the 55 and above category, had the highest mean GPA, 3.94, and those in the youngest category, 25 – 34, had the lowest mean GPA. White participants had a slightly higher mean GPA, 3.43, than African American and Other participants at 3.28 and 3.22 respectively. The data on GPA by gender, age range,

and ethnicity reveal that all participants self-reported high GPA values. In most cases, the high and low GPA by category were separated by less than one standard deviation.

Table 4.6

Mean GPA by Gender, Age Range, and Ethnicity

	Mean GPA	SD
Gender		
Male	3.28	.5
Female	3.44	.5
Age Range		
25 – 34	3.29	.5
35 - 44	3.49	.5
45 – 54	3.59	.5
55+	3.94	.1
Ethnicity		
African American	3.28	.4
White	3.43	.5
Other	3.22	.5

Extra-curricular activities. For extra-curricular activities, those who did not participate (*n*=289) made up 71% of all respondents. For those who chose to participate in some type of extra-curricular activity, student organizations was selected most (*n*=73), followed by academic clubs (*n*=29), social clubs (*n*=16) and student government (*n*=12). Thirty respondents chose "Other" under extra-curricular activities, which accounted for .1% of the sample. In terms of participation level, 17.2% of respondents participated in one extra-curricular activity (*n*=80). Twenty-three respondents participated in two types of extra-curricular activity. Of all respondents who participated in some type of extra-curricular activity, 14 participated in three or more.

Table 4.7 presents the percentage of participation by gender, age range, and ethnicity. The data revealed that female respondents engaged in extra-curricular

activities at a slightly higher rate (.2%) than male respondents (.1%). Respondents aged 35 – 44 years participated at a higher rate (.1%) than any other age group. White respondents participated at a rate of .2%, slightly higher than rates of those classified as Other (.1%) and African American (>.1%) respondents.

Table 4.7

Extra-Curricular Participation by Gender, Age Range, and Ethnicity

	No	Yes	*% Participation*
Gender (*N* = 375)			
Male	131	50	.1
Female	133	61	.2
Age Range (*N* = 366)			
25 – 34	174	71	.2
35 – 44	54	25	.1
45 – 54	25	11	>.1
55+	5	1	>.1
Ethnicity (*N* = 374)			
African American	43	17	>.1
White	166	69	.2
Other	54	25	.1

Work and family responsibility. Items seven through 10 of the Environmental Variable Scale (EV-Scale) worked as a proxy for participant employment status while attending the community college. Those respondents who selected the "N/A" option for those items were considered to be without employment during their time at the community college. Of all respondents, 97.1% were employed either full- or part-time (*N*=365) while completing coursework. Slightly less than 3% were not employed (*N*=11).

Item two of the EV-Scale worked as a proxy for family responsibility. Respondents who chose any of the agree options were considered to have financial

dependents. Those who chose any of the disagree options were considered to be without financial dependents. The data revealed that the majority of respondents, 58.2%, were not financially responsible for others (*N*=219). Those who were financially responsible for others (*N*=157) accounted for the remaining 41.8% of respondents.

Means were calculated for GPA by work responsibility and financial responsibility. Means and standard deviations for GPA are presented in table 4.8. The data revealed that those respondents who were financially responsible for others (*N*=157) self-reported a mean GPA of 3.44 (*SD*=.5). Respondents who were not financially responsible for others (*N*=219) had a lower mean GPA of 3.31 (*SD*=.47). Respondents who worked either full- or part-time while attending the community college (*N*=365) reported a mean GPA of 3.35 (*SD*=.5). Not surprisingly, the data revealed that those who were not employed while attending the community college (*N*=11) reported a higher mean GPA of 3.79.

Table 4.8

Mean GPA by Work and Family Responsibility

	Mean GPA	SD
Family Responsibility		
Yes	3.44	.5
No	3.31	.5
Work Responsibility		
Yes	3.35	.5
No	3.79	.4

Connecting Classroom Scale. According to Kasworm (2003), the classroom plays a pivotal role in involvement for the adult student. The Connecting Classroom Scale (CC-Scale) was used to determine a quantifiable level of classroom connection for

each participant. Table 4.9 presents mean scores and standard deviations by gender, age range, and ethnicity.

The data revealed similar mean scores based on gender, age range, and ethnicity. The mean score for female respondents, 76.1 (*SD*=9.5), was slightly lower than that for male respondents (*M*=76.8, *SD*=8.8). For age range, respondents aged 45 – 54 had the highest mean value for involvement (*M*=78.8, *SD*=7.7), while respondents aged 55 and over had the lowest mean score (*M*=75, *SD*=5.7). The range for mean score among groups was greatest for age range, producing a value of 3.8.

Those included under the label of Other for ethnicity had the highest within group mean score for involvement (*M*=77.9, *SD*=8.8). White respondents had the next highest level (*M*=76.1, *SD*=8.2) followed by African American respondents (*M*=75.8, *SD*=12.6). Considering that the high score for the CC-Scale was 108, no group's mean score could be considered high, but more accurately a medium-high level of classroom involvement.

Environmental Variable Scale. One of the basic tenets of Bean and Metzner's (1985) concept of adult student persistence accounts for the role environmental variables play in influencing adult student retention and persistence to degree completion. McClusky (1963) also accounts for environmental variables and their influence on performance in the Theory of Margin. The EV-Scale was designed by the researcher to produce a quantifiable scale measure of the level of two key environmental variables, work and family. Table 4.10 presents mean scores and standard deviations for the EV-Scale by gender, age range, and ethnicity.

Table 4.9

Connecting Classroom Scale Mean Score by Gender, Age Range, and Ethnicity

	Mean CC-Scale Score	SD
Gender		
Male	76.8	8.8
Female	76.1	9.5
Age Range		
25 – 34	75.2	9.
35 - 44	78.6	9.1
45 – 54	78.8	7.7
55+	75.0	5.7
Ethnicity		
African American	75.8	12.6
White	76.1	8.2
Other	77.9	8.8

The data revealed very comparable mean scores across groups. Mean scores by gender were similar, with male and female respondents having mean scores of 33.1 (*SD*=11.1) and 34.18 (*SD*=11.1) respectively. Surprisingly, respondents aged 55 years and above had the highest mean score (*M*=39.2, *SD*=7.7) relative to other age ranges. Respondents aged 25 – 34 had the lowest mean score (*M*=32.5, *SD*=11.0). African American respondents had a slightly higher mean score (*M*=34.1, *SD*=12.1) than respondents included in Other status (*M*=33.9, *SD*=11.2) and White respondents (*M*=33.7, *SD*=11). The highest possible score on the EV-Scale was 60. For this sample, the influence of the environmental variables of family and work was relatively low.

Table 4.10

Environmental Variable Scale Mean Score by Gender, Age Range, and Ethnicity

	Mean EV-Scale Score	SD
Gender		
Male	33.3	11.2
Female	34.2	11.1
Age Range		
25 – 34	32.5	11.0
35 - 44	36.2	11.9
45 – 54	35.7	9.9
55+	39.2	7.7
Ethnicity		
African American	34.1	12.1
White	33.7	11.0
Other	33.9	11.2

Typical Adult Vertical Transfer Student at MUU

Using percentages as a guide, the typical adult vertical transfer student at MUU was primarily female, white, and aged 25 – 34 years. She had a yearly household income below $29,999 and a continuing-generation college student. She earned an Associate's degree at the community college, but did not utilize the services of a transfer advising center. She received her Associate's degree from an urban community college with a GPA between 3.1 and 4.0. While attending the community college, she did not participate in extra-curricular activities.

During her time at the community college, she worked either full- or part-time, but was only financially responsible for herself. Although she was employed while at the community college, work had only a low to moderate impact on her ability to meet with faculty and advisors, or her ability to study. Similarly, family responsibilities did not strongly impact her efforts to study or to meet with faculty. She was moderately to

highly involved in the classroom. She considered the classroom as the focal point of her community college experience both in terms of social engagement and in engagement with learning and knowledge.

Research Question #2: What precollege characteristics influence the academic and social adjustment process of adult vertical transfer students at the university?

The purpose of the second guiding question for this study was to determine what precollege characteristics influenced the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher reviewed the following variables for use in the regression analysis: (a) age, (b) gender; (c) ethnicity; (d) household income; and (e) first-generation college status. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) Self-Efficacy for Broad Academic Milestones (SE-Broad) composite score. The dependent variable social adjustment was measured by composite scores on the Perceived Cohesion Scale (PC-Scale). For this discussion and those to follow, the term "significant" denotes statistical significance.

University Grade Point Average and Precollege Characteristics

Age, gender, ethnicity, household income, and first-generation college status were each run through a simple linear regression analysis to determine if each variable alone had a significant influence on university GPA. Table 4.11 presents the results of the simple regression analysis.

The analysis revealed that age, ethnicity, and household income were significant predictors of university GPA. Age was statistically significant in predicting GPA, b =

.01, $t(363) = 2.86$, $p < .01$, and explained a significant proportion of variance in GPA scores, $R^2 = .02$, $F(1,364) = 8.15$, $p < .01$, although the variance explained was minimal. In using the dichotomous dummy variable for ethnicity comparing White and Non-White, ethnicity significantly predicted GPA, $b = -.27$, $t(363) = -3.89$, $p < .001$. Ethnicity also explained a significant proportion of variance in GPA scores, $R^2 = .04$, $F(1,372) = 15.12$, $p < .001$. Household income was also a significant predictor of GPA, $b = .16$, $t(363) = 2.32$, $p < .05$, , and explained a significant proportion of variance in GPA scores, $R^2 = .02$, $F(1,361) = 5.40$, $p < .05$.

Table 4.11

Results of Simple Regression Analysis on Each Precollege Independent Variable for University GPA Scores

Variable	R^2	Simple R	b
Age	.02	.15	.01**
Ethnicity	.04	.20	-.27***
Household Income	.02	.12	.16*

* $p < .05$, ** $p < .01$, *** $p < .001$

Multiple regression analysis for university GPA and precollege characteristics. Following this step a multiple regression analysis was conducted on the following group of precollege variables entered in this order: (a) age, (b) gender, (c) ethnicity, (d) household income, and (e) first-generation college status. A stepwise selection method was used because this was an exploratory analysis. Table 4.12 presents the results of the multiple regression analysis for precollege characteristics, including regression coefficients (b), standard errors, and standardized beta values (β). Beta values indicate the relationship between GPA scores and each predictor variable. Each b value

has an associated error, which reveals to what extent the values would vary across different samples. β values are measured in standard deviation units and therefore are directly comparable. These values indicate what variables have more impact in the model (Field, 2009).

Table 4.12

Results of Multiple Regression Analysis for Grouped Precollege Independent Variables for University GPA Scores

		b	*SE b*	*β*
Step 1				
	Constant	3.29	.04	
	Ethnicity	-0.26	.07	-.19***
Step 2				
	Constant	2.93	.15	
	Ethnicity	-.25	.07	-.19***
	Age	.01	.00	.13**

** $p < .01$, *** $p < .001$

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. These diagnostics address the multicollinearity between independent variables. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .4. Correlations of .8 or above indicate problems with multicollinearity (Meyers, Gamst, & Guarino, 2006); therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was .997, further indicating no problems with multicollinearity.

The researcher then reviewed a residuals scatterplot between regression standardized residuals and regression standardized predicted values (Appendix Y). The

residual plots showed the data to be fairly homoscedastic. The Normal P-P Plot of standardized residuals (Appendix Z) showed that the residuals were normally distributed.

Two variables, age and ethnicity, entered the regression equation. In the first model the value of R^2 was .04 ($p < .001$), indicating that ethnicity accounted for 4% of the variation in GPA scores. The age variable entered model two, producing a R^2 value of .06 ($p < .01$). The inclusion of the age variable to the model accounted for an additional 2% of the variance in GPA scores, for a total of 6% of variance accounted for in the model.

The adjusted R^2 value of model two was .05. The value difference of R^2 and adjusted R^2 (.06 - .05 = .01) showed that if the model were derived from the population rather than a sample it would account for approximately 1% less variance in GPA scores. An ANOVA revealed that the model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio, which represents the ratio of improvement in predictions that result from fitting the model, was 13.69 ($p < .001$) for model 1 and 10.23 ($p < .001$) for model 2. Any value of *F* greater than 1 demonstrates that improvement due to fitting the model is greater than the inaccuracy within the model. The results were interpreted as meaning the final models significantly improved the ability to predict GPA scores.

The coefficient value for ethnicity ($b = -.25$, $p < .001$) indicated a negative relationship between ethnicity and GPA score when all other variables were held constant. The implication for this analysis was that GPA scores were lower for non-White respondents. The coefficient value for age ($b = .01$, $p < .01$) revealed a positive

relationship between age and GPA score with all other variables held constant; as age increased, so did GPA scores.

For this analysis, ethnicity, $t(351) = -3.70$, $p < .001$, was a significant predictor of GPA score. Likewise, age, $t(351) = 2.60$, $p < .01$, was a significant predictor of GPA score. From the size of the *t*-statistics, ethnicity had more impact than age. Additionally, a comparison of standardized beta values showed that within the model, ethnicity ($\beta = -.19$) had slightly more impact than age ($\beta = .13$).

SE-Broad Scores and Precollege Characteristics

Age, gender, ethnicity, household income, and first-generation college status were each run through a simple linear regression analysis to determine if each variable alone had a significant influence on SE-Broad scores. Table 4.13 presents the results of the simple regression analysis.

The analysis revealed that ethnicity and first-generation status were significant predictors of SE-Broad scores. Using the dichotomous dummy variable for ethnicity comparing White and Non-White, ethnicity significantly predicted SE-Broad scores, $b = -2.49$, $t(363) = -2.62$, $p < .01$. Ethnicity also explained a significant proportion of variance in GPA scores, $R^2 = .02$, $F(1,372) = 6.86$, $p < .01$. First-generation status was also a significant predictor of GPA, $b = 2.43$, $t(363) = 2.43$, $p < .05$, , and explained a significant proportion of variance in GPA scores, $R^2 = .02$, $F(1,373) = 5.92$, $p < .05$.

Table 4.13

Results of Simple Regression Analysis on Each Precollege Independent Variable for SE-Broad Scores

Variable	R^2	Simple *R*	*b*
Ethnicity	.02	.14	-2.49**
First-generation Status	.02	.13	2.43*

* $p < .05$, ** $p < .01$

Multiple regression analysis for SE-Broad scores and precollege characteristics. Following this step a multiple regression analysis was conducted on the following group of precollege variables entered in this order: (a) age, (b) gender, (c) ethnicity, (d) household income, and (e) first-generation college status. A stepwise selection method was used because this was an exploratory analysis. Table 4.14 presents the results of the multiple regression analysis for precollege characteristics, including regression coefficients (*b*), standard errors, and standardized beta values (β).

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. These diagnostics address the multicollinearity between independent variables. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .17; therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was .998, further indication no problems with multicollinearity. The Normal P-P Plot of standardized residuals (Appendix AA) showed that the residuals were normally distributed.

Two variables, ethnicity and first-generation status, entered the regression equation. In the first model the value of R^2 was .02 ($p < .01$), indicating that ethnicity accounted for 2% of the variation in SE-Broad scores. The first-generation status variable entered model two, producing a R^2 value of .03 ($p < .05$). The addition of the first-generation status variable to the model accounted for 3% of the variance in SE-Broad scores, an addition of 1% of variance accounted for then when considering ethnicity alone.

Table 4.14

Results of Multiple Regression Analysis for Grouped Precollege Independent Variables for SE-Broad Scores

		b	*SE b*	*β*
Step 1				
	Constant	63.25	.59	
	Ethnicity	-2.59	.98	-.14**
Step 2				
	Constant	61.74	.94	
	Ethnicity	-2.48	.97	-.13*
	First-generation Status	2.11	1.02	.11*

* $p < .05$, ** $p < .01$

The adjusted R^2 value of model two was .03. The value difference of R^2 and adjusted R^2 (.03 - .03 = .00) showed that if the model were derived from the population rather than a sample it would account for approximately the same variance in GPA scores. An ANOVA revealed that the model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio, was 6.99 ($p < .01$). The results were interpreted as meaning the final model significantly improved the ability to predict SE-Broad scores.

The coefficient value for ethnicity (b = -2.48, p < .05) indicated a negative relationship between ethnicity and SE-Broad score when all other variables were held constant. The implication for this analysis was that SE-Broad scores were lower for non-White respondents. The coefficient value for first-generation status (b = 2.11, p <.05) revealed a positive relationship between first-generation status and SE-Broad score with all other variables held constant; indicating continuing-generation respondents had slightly higher SE-Broad scores when all other variables are held constant.

For this analysis, ethnicity, $t(352) = -2.55$, $p < .05$, was a significant predictor of GPA score. Likewise, first-generation status, $t(352) = 2.07$, $p < .05$, was a significant predictor of GPA score. From the size of the t-statistics, ethnicity had more impact than first-generation status. Additionally, a comparison of standardized beta values showed that within the model, ethnicity (β = -.13) had slightly more impact than age (β = .11).

Perceived Cohesion Scores and Precollege Characteristics

Age, gender, ethnicity, household income, and first-generation college status were each run through a simple linear regression analysis to determine if each variable alone had a significant influence on PC-Scale scores. The analysis revealed no precollege variables that were significant predictors of PC-Scale scores.

Multiple regression analysis for Perceived Cohesion scores and precollege characteristics. Following this step a multiple regression analysis was conducted on the following group of precollege variables entered in this order: (a) age, (b) gender, (c) ethnicity, (d) household income, and (e) first-generation college status. A stepwise selection method was used because this was an exploratory analysis. No precollege variables entered the regression equation. Only those variables with a $p < .05$ F-ratio

enter the equation and none of the variables met this requirement. These results were interpreted to indicate that no precollege characteristics influence social adjustment at the university.

Summary of Findings for Research Question #2

Two variables, age and ethnicity, influenced the university GPA of adult vertical transfer students with all other variables (social and academic) held constant. Ethnicity had a slight negative relationship to university GPA and age had a slight positive relationship. The implication for this analysis was that GPA scores were lower for non-White respondents and increased as age increased. Ethnicity and first-generation college status influenced the academic self-efficacy of adult vertical transfer students at the university with all other variables held constant. There was a negative relationship revealed between ethnicity and academic self-efficacy and a positive relationship between first-generation college status and academic self-efficacy. The implication for this analysis was that academic self-efficacy was lower for non-White respondents and higher for continuing-generation college students. No precollege characteristics influenced social adjustment at the university.

Research Question #3: What community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university?

The purpose of the third guiding question for this study was to determine what community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher reviewed the following variables for use in the regression analysis: (a) community

college type; (b) credit hours earned; (c)Associate's degree status; (d) community college GPA; (e) use of transfer advising center; (f) extra-curricular participation; (g) classroom involvement; and (h) environmental variables. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) SE-Broad composite score. The dependent variable social adjustment was measured by composite scores on the PC-Scale.

University Grade Point Average and Community College Experiences

Community college experiences were separated into four groups for the initial regression analysis: (a) community college variables included institutional type, credit hours earned, Associate's degree status, community college GPA, and use of a transfer advising center; (b) extra-curricular participation; (c) involvement, which was the composite score of the CC-Scale; and (d) environmental, which was the composite score of the EV-Scale. Each group was run through a regression analysis using the stepwise selection technique; the purpose of this procedure was to determine if each group alone had a significant influence on university GPA.

Table 4.15 presents the results of the regression analysis for community college variables. Of all the variables included in the regression analysis, only community college GPA entered the equation. Community college GPA was statistically significant in predicting university GPA, $b = .59$, $t(361) = 9.37$, $p < .001$, and explained a significant proportion of variance in GPA scores, $R^2 = .20$, $F(1,362) = 87.83$, $p < .001$. Community college GPA accounted for 20% of the variance in university GPA scores.

Table 4.15

Results of Regression Analysis on Community College Grouped Variables for University GPA Scores

Variable	R^2	Simple *R*	*b*
Community College GPA	.20	.44	.59*

* $p < .001$

Further analysis of GPA revealed that the mean change in GPA from the community college to the university was -.13 ($N = 373$, SD = .55). That is, respondents' university GPA was on average .13 points lower than their community college GPA. The median change in GPA was -.06, with a maximum negative change of -1.7 and a maximum positive change of 1.89.

Next, extra-curricular participation was used in a regression analysis. Two analyses were run for this step. First, extra-curricular participation was run as a dichotomous dummy variable representing a "Yes" for respondents who had participated in at least one activity and "No" for respondents who had not participated. The data revealed that extra-curricular activities measured in this manner had no significant influence on university GPA. Second, extra-curricular participation was run as an interval level measurement comparing levels of participation. This step grouped respondents by how many activities they participated in while attending the community college. Again, no significant link was found between extra-curricular participation and university GPA.

The analysis revealed that involvement was a significant predictor of university GPA, $b = -.01$, $t(373) = -1.78$, but at the $p < .10$ level. A $p < .05$ level was set as the minimum standard for this study, however, so involvement as a predictor of university

GPA was not accepted. The analysis also revealed that environmental variables did not have a significant influence on university GPA.

Multiple regression analysis for university GPA and community college experiences. Following this step a multiple regression analysis was conducted using all variables of the community college. A stepwise selection method was used because this was an exploratory analysis. Table 4.16 presents the results of the multiple regression analysis for community college experiences, including regression coefficients (*b*), standard errors, and standardized beta values (β).

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .46; therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was 1, further indicating no problems with multicollinearity.

The researcher then reviewed a residuals scatterplot between regression standardized residuals and regression standardized predicted value (Appendix AB). The residual plots showed the data to be fairly homoscedastic, with problems arising from non-normally distributed variables. Problems with homoscedasticity do not invalidate the regression analysis, however, but might weaken it (Tabachnick & Fidell, 1989). The Normal P-P Plot of standardized residuals (Appendix AC) showed that the residuals were normally distributed.

Table 4.16

Results of Multiple Regression Analysis on Community College Experiences for University GPA Scores

		b	*SE b*	*β*
Step 1				
	Constant	1.23	.22	
	Community College GPA	.59	.07	.44**
Step 2				
	Constant	1.75	.33	
	Community College GPA	.59	.06	.48**
	Involvement	-.01	.00	-.10*

* $p < .05$, ** $p < .001$

In the first step, community college GPA entered the equation. The value of R^2 was .191 ($p < .001$), indicating that community college GPA accounted for 19.1% of the variation in GPA scores. The variable for involvement entered the model in step two, producing a R^2 value of .20 ($p < .05$). The addition of the involvement variable to the model accounted for an additional 1% of the variance in GPA scores.

The adjusted R^2 value of for the final model was .195. The value difference of R^2 and adjusted R^2 for the model (.201 - .195 = .006) showed that if the model were derived from the population rather than a sample it would account for approximately .6% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio, was 44.03 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict university GPA scores.

The coefficient value for community college GPA ($b = .59$, $p < .001$) indicated a positive relationship between community college GPA and university GPA score when all other variables were held constant. The implication for this analysis was that as

community college GPA increased, university GPA increased. The coefficient value for involvement (b = -.01, p <.05) revealed a negative relationship between involvement and GPA score with all other variables held constant.

In the final model, community college GPA, $t(351) = 9.19$, $p < .001$, was a significant predictor of university GPA score. Likewise, involvement, $t(351) = -2.09$, $p < .05$, was a significant predictor of university GPA score. From the size of the t-statistics, community college GPA had substantially more impact than involvement. Additionally, a comparison of standardized beta values showed that within the model, community college GPA ($\beta = .44$) had more impact than age ($\beta = -.10$).

SE-Broad Scores and Community College Experiences

Community college experiences were grouped into four separate groups for the regression analysis: (a) community college variables; (b) extra-curricular participation; (c) involvement; and (d) environmental. Each group was run through a regression analysis using the stepwise selection technique; the purpose of this procedure was to determine if each group alone had a significant influence on SE-Broad scores.

Table 4.17 presents the results of the regression analysis for community college variables. Of all the community college variables included in the regression analysis, only community college GPA entered the equation. Community college GPA was statistically significant in predicting SE-Broad scores, $b = 4.99$, $t(361) = 5.30$, $p < .001$, and explained a significant proportion of variance in GPA scores, $R^2 = .07$, $F(1,361) = 28.00$, $p < .001$. Community college GPA accounted for 7% of the variance in SE-Broad scores.

Table 4.17

Results of Regression Analysis on Community College Experiences for SE-Broad Scores

Variable	R^2	Simple *R*	*b*
Community College GPA	.07	.27	4.99**
Involvement	.02	.16	.15*

* $p < .05$, ** $p < .001$

Next, extra-curricular participation was used in a regression analysis. Two analyses were run for this step. First, extra-curricular participation was run as a dichotomous dummy variable. The data revealed that extra-curricular activities measured in this manner had no significant influence on university SE-Broad scores. Second, extra-curricular participation was run as an interval level measurement comparing levels of participation. Again, no significant link was found between extra-curricular participation and university SE-Broad scores.

An analysis of involvement revealed it as a significant predictor of SE-Broad scores, $b = .15$, $t(371) = 3.05$, $p < .05$. The analysis revealed that environmental variables did not have a significant influence on SE-Broad scores.

Multiple regression analysis for community college experiences and SE-Broad scores. Following this step a multiple regression analysis was conducted on all variables in the community college construct. A stepwise entry selection method was used. Table 4.18 presents the results of the multiple regression analysis for community college experiences, including regression coefficients (*b*), standard errors, and standardized beta values (β).

Prior to interpreting the data, the researcher reviewed a residuals scatterplot between regression standardized residuals and regression standardized predicted value

(Appendix AD). The residual plots showed the data to be heteroscedastic. Heteroscedastic data does not invalidate the regression analysis, but might weaken it (Tabachnick & Fidell, 1989). SE-Broad scores were not normally distributed. Normality can be assumed because $N > 100$ (Hill & Lewicki, 2007).Therefore, the non-normal distribution of SE-Broad scores should not considerably impact the analysis. The Normal P-P Plot of standardized residuals (Appendix AE) showed that the residuals were normally distributed.

In the first step, community college GPA entered the equation. The value of R^2 was .072 ($p < .001$), indicating that community college GPA accounted for 7.2% of the variation in SE-Broad scores. In the second step, involvement entered the model, producing a R^2 value of .094 ($p < .01$). With the addition of involvement the model now accounted for 9.4% of the variance. Type of community college entered the model in the final step, producing a R^2 value of .104 ($p < .05$). The final model accounted for 10.4% of variance in SE-Broad scores.

The adjusted R^2 value of for the final model was .096. The value difference of R^2 and adjusted R^2 for the model (.104 - .096 = .008) showed that if the model were derived from the population rather than a sample it would account for approximately .8% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The F-ratio was 13.55 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict SE-Broad scores.

Table 4.18

Results of Multiple Regression Analysis for Grouped Community College Experiences for SE-Broad Scores

		b	*SE b*	*β*
Step 1				
	Constant	45.20	3.28	
	Community College GPA	5.08	.97	.27**
Step 2				
	Constant	34.29	4.95	
	Community College GPA	5.01	.96	.26**
	Involvement	.15	.05	.15*
Step 3				
	Constant	34.95	4.96	
	Community College GPA	5.03	.96	.27***
	Involvement	.15	.05	.15**
	Type of Community College	-1.82	.92	-.10*

* $p < .05$, ** $p < .01$, *** $p < .001$

The coefficient value for community college GPA ($b = 5.03$, $p < .001$) indicated a positive relationship between community college GPA and SE-Broad score when all other variables were held constant. The implication for this analysis was that as community college GPA increased, the SE-Broad score increased. The coefficient value for involvement ($b = .15$, $p < .01$) revealed a positive relationship between involvement and SE-Broad score with all other variables held constant. The community college type coefficient value ($b = -1.82$, $p < .05$) indicated a negative relationship between attending a suburban, rural, or multiple institutions and SE-Broad Score.

In the final model, community college GPA, $t(351) = 5.26$, $p < .001$, was a significant predictor of SE-Broad score. Likewise, involvement, $t(351) = 2.98$, $p < .0,1$ and community college type, $t(351) = -1.97$, $p < .05$, were significant predictors of SE-Broad score. From the size of the *t*-statistics, community college GPA had more impact

than involvement and community college type. Additionally, a comparison of standardized beta values showed that within the model, community college GPA (β = .267) had more impact than involvement (β = .15) and community college type (β = -.10).

Perceived Cohesion Scores and Community College Experiences

Community college experiences were placed into four separate groups for the regression analysis: (a) community college variables; (b) extra-curricular participation; (c) involvement; and (d) environmental. Each group was run through a regression analysis using the stepwise selection technique; the purpose of this procedure was to determine if each group alone had a significant influence on PC-Scale scores.

Table 4.19 presents the results of the regression analysis for community college grouped variables and PC-Scale scores. Of all the variables included in the regression analysis, only involvement entered the equation. Involvement was statistically significant in predicting PC-Scale scores, $b = .14$, $t(372) = 3.85$, $p < .001$, and explained a significant proportion of variance in GPA scores, $R^2 = .038$, $F(1,373) = 14.80$, $p < .001$. Involvement accounted for 3.8% of the variance in PC-Scale scores.

Table 4.19

Results of Regression Analysis on Community College Grouped Variables on Perceived Cohesion Scores

Variable	R^2	Simple R	b
Involvement	.038	.195	.143*

* $p < .001$

Multiple regression analysis for PC-Scale scores and precollege characteristics. Following this step a multiple regression analysis was conducted on the following groups of community college experiences: (a) community college variables, (b)

extra-curricular participation, (c) involvement, and (d) environmental variables. A stepwise selection method was used because this was an exploratory analysis. Table 4.20 presents the results of the multiple regression analysis for community college experiences, including regression coefficients (*b*), standard errors, and standardized beta values (β).

The residual plots showed the data to be heteroscedastic. Heteroscedastic data does not invalidate the regression analysis, but might weaken it (Tabachnick & Fidell, 1989). Like SE-Broad scores, PC-Scale scores were not normally distributed. Again, normality can be assumed because $N > 100$ (Hill & Lewicki, 2007). Therefore, the non-normal distribution of SE-Broad scores should not considerably impact the analysis. The Normal P-P Plot of standardized residuals showed that the residuals were normally distributed.

Table 4.20

Results of Multiple Regression Analysis for Grouped Community College Experiences for Perceived Cohesion Scores

		b	*SE b*	β
Step 1				
	Constant	15.20	2.96	
	Involvement	.14	.04	.19**
Step 2				
	Constant	14.10	2.98	
	Involvement	.16	.04	.21**
	Extra-curricular participation	-1.73	.79	-.12*

* $p < .05$, ** $p < .001$

In the first step, involvement entered the equation. The value of R^2 was .031 ($p < .001$), indicating that involvement accounted for 3.1% of the variation in PC-Scale scores. In the second step, extra-curricular participation entered the model, producing a R^2 value

of .047 ($p < .05$). With the addition of extra-curricular activities the model accounted for an additional 4.7% of variance.

The adjusted R^2 value of for the final model was .042. The value difference of R^2 and adjusted R^2 for the model (.047 - .042 = .005) showed that if the model were derived from the population rather than a sample it would account for approximately .5% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio was 8.67 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict PC-Scale scores.

The coefficient value for involvement ($b = .16$, $p < .001$) indicated a positive relationship between involvement and PC-Scale score when all other variables were held constant. The implication for this analysis was that as involvement scores increased, the PC-Scale score increased. The coefficient value for extra-curricular participation ($b = -1.73$, $p < .05$) revealed a negative relationship between participating in extra-curricular activities at the community college and PC-Scale score with all other variables held constant.

In the final model, involvement, $t(351) = 3.95$, $p < .001$, was a significant predictor of PC-Scale score. Likewise, extra-curricular participation, $t(351) = -2.18$, $p < .05$, was a significant predictor of PC-Scale score. From the size of the *t*-statistics, involvement had more impact than extra-curricular participation. Additionally, a comparison of standardized beta values showed that within the model, involvement ($\beta = .212$) had more impact than extra-curricular participation ($\beta = .151$).

Summary of Findings for Research Question #3

Two variables, community college GPA and classroom involvement, influenced the university GPA of adult vertical transfer students. Community college GPA alone accounted for 19.1% of the variance in university GPA, with classroom involvement accounting for the additional .09%. Three variables were found to influence the academic self-efficacy of adult vertical transfer students: (a) community college GPA, (b) classroom involvement, and (c) type of community college. Two variables, classroom involvement and extra-curricular participation, influenced the social adjustment of adult vertical transfer students at the university.

Research Question #4: Are the most influential variables demographic, academic (GPA), social, or environmental?

The purpose of the forth guiding question for this study was to determine what variables, including demographic, academic (GPA), social, or environmental, had the most influence on the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher input variables from the following constructs into the regression analysis: (a) precollege characteristics and (b) community college experiences. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) SE-Broad composite score. The dependent variable social adjustment was measured by composite scores on the PC-Scale. A stepwise method was used as this was an exploratory analysis. The significance level was set at $p < .05$.

University Grade Point Average

Table 4.21 presents the results of the multiple regression analysis for precollege characteristics and community college experiences on university GPA. The table includes regression coefficients (b), standard errors, and standardized beta values (β).

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. The diagnostics address the multicollinearity between independent variables. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .45; therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was .997, further indication no problems with multicollinearity.

The researcher then reviewed a residuals scatterplot between regression standardized residuals and regression standardized predicted value (Appendix AF). The residual plots showed the data to be fairly homoscedastic. The Normal P-P Plot of standardized residuals (Appendix AG) showed that the residuals were normally distributed.

In the first step, ethnicity entered the equation. The value of R^2 was .027 ($p < .05$), indicating that ethnicity accounted for 2.7% of the variation in university GPA scores. The variable for age entered the model in step two, producing a R^2 value of .046 ($p < .01$). With the addition of the age variable, the model accounted for 4.6% of the variance in university GPA scores. In the final step, community college GPA entered the model. The value of R^2 was .211 ($p < .001$). The final model accounted for 21.1% of variance in university GPA scores.

Table 4.21

Multiple Regression Analysis for Precollege Characteristics and Community College Experiences on University GPA Scores

		b	*SE b*	*β*
Step 1				
	Constant	3.30	.04	
	Ethnicity	-.20	.07	-.16**
Step 2				
	Constant	2.95	.14	
	Ethnicity	-.19	.07	-.16**
	Age	.01	.00	.14*
Step 3				
	Constant	1.51	.22	
	Ethnicity	-.12	.06	-.10*
	Age	.00	.00	.01
	Community College GPA	.51	.06	.45***

* $p < .05$, ** $p < .01$, $p < .001$

The adjusted R^2 value for the final model was .203. The value difference of R^2 and adjusted R^2 for the model (.211 - .203 = .008) showed that if the model were derived from the population rather than a sample it would account for approximately .8% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio, was 29.15 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict university GPA scores.

The coefficient value for ethnicity ($b = -.12$, $p < .05$) indicated a negative relationship between ethnicity and university GPA score when all other variables were held constant. The implication for this analysis was that non-White adult vertical transfer students were more likely to experience lower university GPAs. The coefficient value for age ($b = .001$) revealed a small positive association, but this relationship was not

statistically significant in the final step of the model. Community college GPA (b = .51, p < .001) was positively associated with university GPA. As community college GPA increased, university GPA increased.

In the final model, ethnicity, $t(329) = -1.97$, $p < .001$, was a significant predictor of university GPA score. Likewise, community college GPA, $t(329) = 8.27$, $p < .001$, was a significant predictor of university GPA score. From the size of the t-statistics, community college GPA had substantially more impact than ethnicity. Additionally, a comparison of standardized beta values showed that within the model, community college GPA (β = .43) had more impact than ethnicity (β = -.10).

SE-Broad Scores

The researcher input the variables for entry into the regression analysis from the following constructs: (a) precollege characteristics and (b) community college experiences. Table 4.22 presents the results of the multiple regression analysis for precollege characteristics and community college experiences in relation to SE-Broad scores, including regression coefficients (b), standard errors, and standardized beta values (β).

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. The diagnostics address the multicollinearity between independent variables. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .26; therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was .998, further indication no problems with multicollinearity.

The researcher then reviewed a residuals scatterplot between regression standardized residuals and regression standardized predicted value (Appendix AH). The residual plots showed the data to be fairly homoscedastic. The Normal P-P Plot of standardized residuals (Appendix AI) showed that the residuals were normally distributed.

In the first step, involvement entered the equation. The value of R^2 was .03 ($p <$ .001), indicating that involvement accounted for 3% of the variation in SE-Broad scores. In the second step, ethnicity entered the model, producing a R^2 value of .050 ($p < .01$). With the addition of involvement the model now accounted for an additional 5% of variance. First-generation status entered the model in the third step, producing a R^2 value of .062 ($p < .05$), accounting for 6.2% of variation in SE-Broad scores. Type of community college entered the model in the final step, producing a R^2 value of .074 ($p <$ .05). The final model accounted for 7.4% of variance in SE-Broad scores.

The adjusted R^2 value for the final model was .063. The value difference of R^2 and adjusted R^2 for the model (.074 - .063 = .011) showed that if the model were derived from the population rather than a sample it would account for approximately 1.1% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio was 6.78 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict SE-Broad scores.

Table 4.22

Multiple Regression Analysis on Precollege Characteristics and Community College Experiences for SE-Broad Scores

		b	*SE b*	*β*
Step 1				
	Constant	49.34	3.98	
	Involvement	.17	.05	.17***
Step 2				
	Constant	49.93	3.95	
	Involvement	.17	.05	.18***
	Ethnicity	-2.63	.99	-.14**
Step 3				
	Constant	48.84	3.97	
	Involvement	.17	.05	.17***
	Ethnicity	-2.51	.98	-.13**
	First-generation Status	2.18	1.04	.11*
Step 4				
	Constant	49.53	3.964	
	Involvement	.18	.05	.18***
	Ethnicity	-2.85	.99	-.15**
	First-generation Status	2.20	1.04	.11*
	Community College Type	-2.01	.96	-.11*

* $p < .05$, ** $p < .01$, *** $p < .001$

The coefficient value for involvement ($b = .18$, $p < .001$) indicated a slight positive relationship between involvement and SE-Broad score when all other variables were held constant. The implication for this analysis was that as involvement increased, the SE-Broad score increased. The coefficient value for ethnicity ($b = -2.85$, $p < .01$) revealed a negative relationship between ethnicity and SE-Broad score with all other variables held constant. The first-generation status coefficient value ($b = 2.20$, $p < .05$) indicated a positive relationship between first-generation status and SE-Broad Score. This was interpreted as having a positive association between not being a first-generation student and SE-Broad scores. The coefficient value for community college type (b = -

2.01, $p < .05$) indicated a negative association between attending a suburban, rural, or multiple institutions with SE-Broad scores.

In the final model, involvement, $t(341) = 3.43$, $p < .001$, was a significant predictor of SE-Broad score. Likewise, ethnicity, $t(341) = -2.87$, $p < .01$, first-generation status, $t(341) = 2.12$, $p < .01$, and community college type $t(341) = -2.09$, $p < .05$ were significant predictors of SE-Broad score. From the size of the *t*-statistics, involvement had the most impact, followed by ethnicity, first-generation status, and community college type. Additionally, a comparison of standardized beta values showed that within the model, involvement ($\beta = .180$) had the most influence on SE-Broad scores. Here, a social variable exerted the most influence.

Perceived Cohesion Scores

The researcher input the variables for entry into the regression analysis from the following constructs: (a) precollege characteristics and (b) community college experiences. Table 4.23 presents the results of the multiple regression analysis for precollege characteristics and community college experiences on PC-Scale scores, including regression coefficients (*b*), standard errors, and standardized beta values (β).

Prior to interpreting the analysis, the researcher inspected the collinearity statistics and collinearity diagnostics in the SPSS® 19 output. The diagnostics address the multicollinearity between independent variables. The researcher first examined the intercorrelations between independent variables. No two independent variables were correlated above .19; therefore no problems for multicollinearity were detected for this analysis using this method. Additionally, the tolerance value for this analysis was .950, further indication no problems with multicollinearity. The residual plots showed the data

to be moderately homoscedastic. The Normal P-P Plot of standardized residuals (Appendix AJ) showed that the residuals were normally distributed.

Table 4.23

Multiple Regression Analysis on Precollege Characteristics and Community College Experiences for Perceived Cohesion Scores

		b	*SE b*	*β*
Step 1				
	Constant	14.94	2.95	
	Involvement	.14	.04	.19**
Step 2				
	Constant	13.98	2.96	
	Involvement	.16	.04	.22**
	Extra-curricular participation	-1.77	.79	-.12*

* $p < .05$, ** $p < .001$

In the first step, involvement entered the equation. The value of R^2 was .036 ($p <$ .001), indicating that involvement accounted for 3.6% of the variation in PC-Scale scores. In the second step, extra-curricular participation entered the model, producing a R^2 value of .050 ($p < .05$). With the addition of extra-curricular activities the model accounted for 5% of variance in PC-Scale scores.

The adjusted R^2 value of for the final model was .044. The value difference of R^2 and adjusted R^2 for the model (.050 - .044 = .006) showed that if the model were derived from the population rather than a sample it would account for approximately .6% less variance in GPA scores. An ANOVA revealed that the final model was significantly better at predicting GPA scores than using the mean as a best guess. The *F*-ratio was 8.97 ($p < .001$). The results were interpreted as meaning the final model significantly improved the ability to predict PC-Scale scores.

The coefficient value for involvement ($b = .157$, $p < .001$) indicated a positive relationship between involvement and PC-Scale score when all other variables were held constant. The implication for this analysis was that as involvement scores increased, the PC-Scale score increased. The coefficient value for extra-curricular participation ($b = -1.77$, $p < .05$) revealed a negative relationship between participating in extra-curricular activities at the community college and PC-Scale score with all other variables held constant.

In the final model, involvement, $t(351) = 4.01$, $p < .001$, was a significant predictor of PC-Scale score. Likewise, extra-curricular participation, $t(351) = -2.23$, $p < .05$, was a significant predictor of PC-Scale score. From the size of the *t*-statistics, involvement had more influence than extra-curricular participation. Additionally, a comparison of standardized beta values showed that within the model, involvement ($\beta = .217$) had more impact than extra-curricular participation.

Summary of Findings for Research Question #4

Three variables influenced university GPA: (a) ethnicity, (b) age, and (c) community college GPA. A comparison of beta values revealed community college GPA (academic variable) to be the most influential variable. Four variables were found to influence the academic self-efficacy of adult vertical transfer students: (a) classroom involvement, (b) ethnicity, (c) first-generation status, and (d) community college type. A comparison of standardized beta values revealed classroom involvement (social variable) to be the most influential variable. Two variables influenced perceived cohesion scores, classroom involvement and extra-curricular participation. A comparison of standardized

beta values revealed classroom involvement (social variable) to be the most influential variable.

Chapter Summary

The results from the analysis of the data for the four research questions were presented in this chapter. In summary, the major findings were: (a) the typical adult vertical transfer student at MUU was primarily female, white, and aged 25 – 34 years with a community college and university GPA above 3.0; (b) two precollege characteristic variables, age and ethnicity, influenced university GPA; (c) community college GPA, classroom involvement, and type of community college influenced academic adjustment; (d) classroom involvement and extra-curricular participation influenced social adjustment; and (e) community college GPA was the most influential variable in predicting academic adjustment and classroom involvement was the most influential variable in predicting social adjustment.

CHAPTER 5

DISCUSSION OF FINDINGS

The purpose of this study was two-fold: (a) to provide a comprehensive description of the adult transfer student population and (b) to identify precollege characteristics and community college experiences that influence the academic and social adjustment process of adult vertical transfer students at the university. The adult vertical transfer student was defined as a student 25 years old or above at the time of the study who completed a minimum of 12 hours of community college coursework and then transferred to a university for the purpose of completing a 4-year degree.

This study was informed by student involvement theory (Astin, 1984), Tinto's (1975) model of student departure, Bean and Metzner's (1985) conceptual model of nontraditional student persistence, and the concept of the connecting classroom (Graham, Donaldson, Kasworm, & Dirkx, 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994). As applied in this study of adult vertical transfer students, these theories and concepts postulated that the independent constructs of precollege characteristics and community college experiences influence academic and social adjustment at the university. Precollege characteristics were those characteristics that the student brought to college (Ethington & Horn, 2007). Community college experiences had academic components, including GPA and credits transferred, social components, including extracurricular activity and classroom involvement, and environmental components, including family and work obligations.

The following four research questions guided this study:

1. What is the descriptive profile of the adult community college transfer student population?
2. What precollege characteristics influence the academic and social adjustment process of adult vertical transfer students at the university?
3. What community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university?
4. Are the most influential variables demographic, academic (GPA), social, or environmental?

Findings from the extensive literature review conducted for this study indicated the constructs of precollege characteristics and community college experiences were linked to the constructs of academic and social adjustment in that academic and social adjustment were influenced by precollege characteristics and community college experiences. Each of these constructs was subdivided into important variables identified in the literature to impact the transfer process. The precollege characteristics of age, race/ethnicity, gender, household income, and first-generation status were hypothesized to influence academic and social integration at the university. Community college experiences were analyzed by variable type, including academic, social, and environmental variables. Academic variables included community college GPA and credits earned. Environmental variables (Bean & Metzner, 1985) were limited to work and family responsibility. Social variables included extra-curricular participation and items relating to classroom involvement. Classroom involvement was measured by a modified version of the CC-Scale (Philibert, 2005). These academic, environmental, and

social variables were also hypothesized to influence academic and social integration at the university.

Academic integration (Tinto, 1975, 1993) was measured in two ways: (a) university GPA and (b) academic self-efficacy. Academic self-efficacy was defined as the level of confidence a student felt to achieve various academic outcomes at the university (Lent et al., 1997), and was measured using the SE-Broad Scale. Social integration (Tinto, 1975, 1993) was defined as the sense of belonging a student felt to the university. Perceived cohesion, as measured by the PC-Scale (Bollen & Hoyle, 1990), was used as a proxy for social integration.

No instrument existed to provide a comprehensive examination of the vertical transfer process, especially for the adult student. Clarification of the key constructs in the vertical transfer process, with specificity for adult undergraduates, facilitated the design of the survey instrument. The researcher developed instrument utilized in this study was a combination of items measuring academic, environmental, and social variables at the community college, as well as items and scales measuring academic and social adjustment at the university. Five content experts, two in the study of transfer students and three in adult education, reviewed the testing instrument for format and content. Following the expert review, the researcher set up a web-based critique session for an item-by-item critique for content, wording, and overall suggestions about the questionnaire format.

The expert review and critique session led to the removal or alteration of multiple items. Going into the review and critique session, the questionnaire consisted of 75 items. After the recommended edits, the questionnaire consisted of 61 items. A majority

of the changes were for the removal of items addressing extra-curricular participation at the community college. These changes better fit the study conceptually, as extra-curricular activities were shown as less important in understanding the social aspects of adult students' experiences in post-secondary education.

A pilot study was conducted to collect data from a small sample of adult vertical transfer students similar to those who would be included in the full study. The results of the pilot study revealed the questionnaire was technically sufficient and the data collection method worked. The questionnaire was not changed significantly, making the pilot study date usable in the full study.

Data collection took place over a 30 day period beginning on February 23, 2011. The survey was closed on March 21, 2011. The timeframe was ideal as it allowed sufficient time for Fall 2010 transfers to have completed one semester at the university. Transfer students who were at or near completion of their degree were more likely than not to be enrolled in the Spring 2011 semester and be on course for a May 2011 graduation date. This timeframe ensured capturing a diversity of respondents relating to length of time at the university.

The participants in this study attend MUU, a university in a large metropolitan area in a southeastern state of the United States. The survey was administered using SurveyMonkey®, which allowed the researcher to include the entire population of adult vertical transfer students at MUU rather than a representative sampling. The participating institution was selected based on the following criteria: (1) offered directed services to transfer students and (2) offered directed services to adult learners. MUU is a selective, public, land-grant university located in a large southeastern city with an

enrollment of approximately 20,000 students. MUU is a research intensive university and has a Carnegie classification of a High Transfer-In (HTI) institution (Carnegie Foundation for the Advancement of Teaching website, n.d.).

On February 23, 2011, a link to the survey instrument was sent to each participants' institution provided email address (*N=1900)*. A total of 318 participants responded to the first survey invitation. This translated to a response rate of 16.73%. One week later on March 2, 2011, the researcher sent a follow-up reminder to participants who had not responded to the original invitation and to those that had only partially completed the questionnaire. An additional 126 participants responded, bringing the response rate to 23.37%. A final reminder was sent on March 14, 2011. At this point, the responses totaled 499 for an unadjusted response rate of 26.3%. The final adjusted response rate was 25%.

Student demographic data, academic information, and responses to scale items were self-reported by participants on a questionnaire. Data collected from student responses on the questionnaire, as well as demographic information provided by the university, were uploaded into SPSS® 19 for analysis. To address the first guiding question of this study the researcher utilized descriptive research, "a type of quantitative research that involves making careful descriptions of educational phenomenon" (Gall, Borg, & Gall, 1996, p. 374). Descriptive statistics for this study included means, standard deviations, and frequencies. Analysis of variance (ANOVA), simple linear regression, and multiple linear regression were used to address questions two and three. Simple linear regression and multiple linear regression provided information on which precollege

characteristics and community college experiences, if any, affected or influenced participants' academic and social adjustment at the university.

The fourth question guiding this research study was also addressed using ANOVA and multiple linear regression. The rationale for utilizing multiple linear regression was to identify those variables most influential in the academic and social adjustment process of adult vertical transfer students at the university. Variables were entered into the regression equation in the assumed order in which they were believed to be experienced by the student.

Summary of Findings

This study was designed to provide a descriptive profile of adult vertical transfer students attending the participating research institution. Second, this study investigated whether precollege characteristics and community college experiences influenced the academic and social adjustment of adult vertical transfer students at the university. The first research question addressed the descriptive profile of the adult vertical transfer student population at MUU. The second research question investigated the influence of precollege characteristics on academic and social adjustment at the university. The third research question examined the influence of community college experiences, including academic, social, and environmental variables, on academic and social adjustment at the university. The final question was used to determine which type of variable, demographic, academic, social, or environmental, was most influential in the academic and social adjustment process of adult vertical transfer students at the university.

Research Question One Findings

The first research question addressed the descriptive profile of the adult vertical transfer student population at MUU. Of the approximately 2019 adult vertical transfer students attending MUU, 53.3% were female (*n*=1067) and 46.7% male (*n*=943). The mean age was 31.1 years (*SD*=7.7) with a low of 25 and a high of 70. The median age was 28. In terms of ethnicity, 61% identified as White. African American students accounted for 18% of adult vertical transfer students, while Hispanic and Asian American students made up 6% and 5% respectively.

Because of the lack of accuracy in the data provided by MUU (see chapter 3 for a detailed review of data accuracy), a more in depth descriptive profile of study respondents was reported. This profile was based on survey respondents. The descriptive profile that fit the largest group of respondents in this study was female, white, and aged 25 – 34 years. The mean age was 33 years, which is seven years older than the average age of all vertical transfer students as determined by Fredrickson (1998). The student had a yearly household income below $29,999, was a continuing-generation college student, and earned an Associate's degree from an urban community college with a GPA between 3.1 and 4.0. She worked either full- or part-time, but work had only a low to moderate impact on her ability to meet with faculty and advisors, or her ability to study.

Research Question Two Findings

The purpose of the second guiding question for this study was to determine what precollege characteristics influenced the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher

reviewed the following variables for use in the multiple regression analysis: (a) age, (b) gender; (c) ethnicity; (d) household income; (e) first-generation college status. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) SE-Broad composite score. The dependent variable social adjustment was measured by composite scores on the PC-Scale.

Precollege characteristics and academic adjustment. Two variables, age and ethnicity, influenced the university GPA of adult vertical transfer students. These two variables produced a R^2 value of .06 ($p < .01$). Although statistically significant, age and ethnicity accounted for only 6% of the variance in GPA scores. The coefficient value for ethnicity ($b = -.25$, $p < .001$) indicated a negative relationship between ethnicity and GPA score when all other variables were held constant. The implication for this analysis was that GPA scores were lower for non-White respondents. The coefficient value for age ($b = .01$, $p < .01$) revealed a positive relationship between age and GPA score with all other variables held constant; as age increased, so did GPA scores.

Two variables, ethnicity and first-generation college status, influenced the academic self-efficacy of adult vertical transfer students at the university, producing a R^2 value of .03 ($p < .05$). Although significant, ethnicity and first-generation status accounted for only 3% of the variance in SE-Broad scores. The coefficient value for ethnicity ($b = -2.48$, $p < .05$) indicated a negative relationship between ethnicity and academic self-efficacy when all other variables were held constant. The implication for this analysis was that academic self-efficacy was lower for non-White respondents. The coefficient value for first-generation status ($b = 2.11$, $p < .05$) revealed a positive relationship between first-generation status and academic self-efficacy with all other

variables held constant; indicating continuing-generation respondents had slightly higher SE-Broad scores.

Precollege characteristics and social adjustment. Age, gender, ethnicity, household income, and first-generation college status were each run through a simple linear regression analysis to determine if each variable alone had a significant influence on PC-Scale scores. The analysis revealed no precollege variables that were significant predictors of PC-Scale scores. Only those variables with a $p < .05$ *F*-ratio entered the regression equation and none of the variables met this requirement. These results were interpreted to indicate that no precollege characteristics influenced social adjustment at the university.

Research Question Three Findings

The purpose of the third guiding question for this study was to determine what community college experiences influence the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher reviewed the following variables for use in the regression analysis: (a) community college type; (b) credit hours earned; (c) Associate's degree status; (d) community college GPA; (e) use of transfer advising center; (f) extra-curricular participation; (g) classroom involvement; and (h) environmental variables. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) SE-Broad composite score. The dependent variable social adjustment was measured by composite scores on the PC-Scale.

Community college experiences and academic adjustment. Two variables, community college GPA and classroom involvement, influenced the university GPA of

adult vertical transfer students. Community college GPA and classroom involvement produced a R^2 value of .20 ($p < .05$). Community college GPA alone accounted for 19.1% of the variance in university GPA, with classroom involvement accounting for the additional .09%. The coefficient value for community college GPA ($b = .59$, $p < .001$) indicated a positive relationship between community college GPA and university GPA score when all other variables were held constant. The implication for this analysis was that as community college GPA increased, university GPA increased. The coefficient value for involvement ($b = -.01$, $p < .05$) revealed a negative relationship between involvement and GPA score with all other variables held constant.

Three variables were found to influence the academic self-efficacy of adult vertical transfer students: (a) community college GPA, (b) classroom involvement, and (c) type of community college. These three variables produced a R^2 value of .104 ($p < .05$), indicating the regression model accounted for 10.4% of variance in SE-Broad scores. The coefficient value for community college GPA ($b = 5.03$, $p < .001$) indicated a positive relationship between community college GPA and SE-Broad score when all other variables were held constant. The implication for this analysis was that as community college GPA increased, the SE-Broad score increased. The coefficient value for involvement ($b = -.15$, $p < .01$) revealed a positive relationship between involvement and SE-Broad score with all other variables held constant. The community college type coefficient value ($b = -1.82$, $p < .05$) indicated a negative relationship between attending a suburban, rural, or multiple institutions and SE-Broad Score.

Community college experiences and social adjustment. Two variables, classroom involvement and extra-curricular participation, influenced the social

adjustment of adult vertical transfer students at the university. The value of R^2 for classroom involvement was .031 ($p < .001$), indicating that involvement accounted for 3.1% of the variation in PC-Scale scores. With the addition of extra-curricular activities the regression model accounted for 4.7% of variance in PC-Scale scores. The coefficient value for involvement ($b = .155$, $p < .001$) indicated a positive relationship between involvement and PC-Scale score when all other variables were held constant. The implication for this analysis was that as involvement increased, the PC-Scale score increased. The coefficient value for extra-curricular participation ($b = -1.73$, $p < .05$) revealed a negative relationship between participating in extra-curricular activities at the community college and PC-Scale score with all other variables held constant.

Research Question Four Findings

The purpose of the forth guiding question in this study was to determine what variables, including demographic, academic (GPA), social, or environmental, had the most influence on the academic and social adjustment process of adult vertical transfer students at the university. To address this question, the researcher input variables from the following constructs into the regression analysis: (a) precollege characteristics and (b) community college experiences. The dependent variable academic adjustment was measured in two ways: (a) university GPA and (b) SE-Broad composite score. The dependent variable social adjustment was measured by composite scores on the PC-Scale. A stepwise method was used as this was an exploratory analysis. The significance level was set at $p < .05$.

University GPA. Three variables influenced university GPA: (a) ethnicity, (b) age, and (c) community college GPA. The value of R^2 for these three variables was .211

($p < .001$), indicating that these variables accounted for 21.1% of variance in university GPA scores. The coefficient value for ethnicity ($b = -.12$, $p < .05$) indicated a negative relationship between ethnicity and university GPA score when all other variables were held constant. The implication for this analysis was that non-White adult vertical transfer students were more likely to experience lower university GPAs. The coefficient value for age ($b = .001$) revealed a slight positive association, but this relationship was not statistically significant in the final step of the model. Community college GPA ($b = .51$, $p < .001$) was positively associated with university GPA. As community college GPA increased, university GPA increased.

In the regression model, ethnicity, $t(329) = -1.97$, $p < .001$, was a significant predictor of university GPA score. Likewise, community college GPA, $t(329) = 8.27$, $p < .001$, was a significant predictor of university GPA score. From the size of the *t*-statistics, community college GPA had substantially more impact than ethnicity. Additionally, a comparison of standardized beta values showed that within the model, community college GPA ($\beta = .43$) had more impact than ethnicity or age. This indicated that for university GPA, the most influential variable was academic.

SE-Broad scores. Four variables were found to influence the academic self-efficacy of adult vertical transfer students: (a) classroom involvement, (b) ethnicity, (c) first-generation status, and (d) community college type. The combined influence of these variables produced a R^2 value of .074 ($p < .05$), indicating that these variables accounted for 7.4% of variance in SE-Broad scores. The coefficient value for involvement ($b = .175$, $p < .001$) indicated a slight positive relationship between involvement and SE-Broad score when all other variables were held constant. The implication for this

analysis was that as involvement increased, academic self-efficacy increased. The coefficient value for ethnicity (b = -2.85, p <.01) revealed a negative relationship between ethnicity and academic self-efficacy with all other variables held constant. The first-generation status coefficient value (b = 2.20, p <.05) indicated a positive relationship between first-generation status and SE-Broad Score. This was interpreted as having a positive association between being a continuing-generation student and academic self-efficacy. The coefficient value for community college type (b = -2.01, p <.05) indicated a negative association between attending a suburban, rural, or multiple institutions with SE-Broad scores.

In the final regression model, involvement, $t(341) = 3.43$, $p < .001$, was a significant predictor of SE-Broad score. Likewise, ethnicity, $t(341) = -2.87$, $p < .01$, first-generation status, $t(341) = 2.12$, $p < .01$, and community college type $t(341) = -2.09$, $p < .05$ were significant predictors of SE-Broad score. From the size of the t-statistics, involvement had the most impact, followed by ethnicity, first-generation status, and community college type. Additionally, a comparison of standardized beta values showed that within the model, involvement ($\beta = .180$) had the most influence on SE-Broad scores. This indicated that for academic self-efficacy, a social variable was most influential.

Perceived cohesion scores. Two variables, classroom involvement and extra-curricular participation, produced a R^2 value of .050 ($p < .05$). These two variables accounted for 5% of the variance in PC-Scale scores. The coefficient value for involvement (b = .157, $p < .001$) indicated a positive relationship between involvement and PC-Scale score when all other variables were held constant. The implication for this

analysis was that as involvement scores increased, the PC-Scale score increased. The coefficient value for extra-curricular participation (b = -1.77, p <.05) revealed a negative relationship between participating in extra-curricular activities at the community college and PC-Scale score with all other variables held constant.

In the regression model, involvement, $t(351) = 4.01$, $p < .001$, was a significant predictor of PC-Scale score. Likewise, extra-curricular participation, $t(351) = -2.23$, $p < .05$, was a significant predictor of PC-Scale score. From the size of the t-statistics, involvement had more influence than extra-curricular participation. Additionally, a comparison of standardized beta values showed that within the model, involvement ($\beta = .217$) had more impact than extra-curricular participation. The most influential variable type for social adjustment was social.

Conclusions

This research study on the adjustment process of adult vertical transfer students was grounded in the theory of student departure (Tinto, 1975, 1993), student involvement theory (Astin, 1984), the model of nontraditional student attrition (Bean &Metzner, 1985) and the connecting classroom concept (Graham, Donaldson, Kasworm, & Dirkx, 2000; Kasworm, 1995, 2003c; Kasworm & Blowers, 1994). The theories and concepts were combined into a conceptual framework appropriate in application to examining the transfer experiences of adult students. The study results confirmed certain demographic, academic, and social variables proposed in these theories and concepts to be influential in determining the academic and social adjustment of adult transfer students at the university, but also raised questions about long held beliefs about who makes up the transfer student population and the educational experiences of adult students.

This section will discuss four conclusions that are based on the themes of (a) changing descriptive profile, (b) the influence of academic variables, (c) the importance of classroom involvement, and (d) the true impact of environmental variables.

Conclusion One – Adult students with community college beginnings did not fit the common descriptive profile of vertical transfer students.

One of the purposes of this study was to provide a descriptive profile of the adult vertical transfer student population at MUU. The use of descriptive statistics was appropriate for the overall study because little is known about the adult community college transfer student population. According to Monroe (2006), community college transfer students are "likely to be older, be minorities. . . have weaker academic backgrounds, and be less confident about their ability to complete a program (p. 35). The findings of this study paint something of a different picture.

The demographic profile that fit the largest group of adult vertical transfer students in this study was white, female, and a mean age of 33 years. These findings reflect the national enrollment in higher education, with white females making up the largest group of students enrolled in postsecondary education (NCES, 2010). The fact that 62.8% of respondents self-identified as White was somewhat surprising. The adult vertical transfer student population at MUU mirrored MUU's overall enrollment, which consists of 63.4% of students classified as White. Researchers have suggested that community college transfer students were likely to be from a racial/ethnic minority population (Hagedorn, 2004b; Monroe, 2006), and with the community college student body becoming more diverse (AACC, 2011), it was expected that more individuals from racial/ethnic minority groups would have been represented in this study.

Moreover, MUU is in close proximity to a large, urban community college with an overall enrollment of approximately 60,000 students, 52% of whom were classified as being from a racial/ethnic minority group. MUU is the primary receiving institution for vertical transfer students from this community college, and the majority of community college transfer students currently enrolled at MUU began their postsecondary education at this large, urban community college. Considering the historical movement of transfer students from this particular urban community college to MUU, one would expect a larger population of minority transfer students.

The mean community college GPA reported by study participants was 3.36. Of all respondents, 69% reported a community college GPA of 3.1 or above. Additionally, respondents to this study were confident in their ability to complete a program. Scores derived from the SE-Broad scale could range from a minimum of 12 indicating "No Confidence" to a maximum of 72 indicating "Complete Confidence." The mean SE-Broad score, a measure of academic self-efficacy, was 62.59. Respondents were highly confident in their ability to complete their degree. These findings differ from Monroe's (2006) description, as well as other studies that found community college transfers were academically unprepared (Alfonso, 2006; Brint & Karabel, 1989; Carlan & Byxbe 2000; Dougherty, 1992, 2001; Laanan, 1999; Townsend, 1994). Respondents to this study will likely attain their baccalaureate degree because transfer students who are not academically deficient tend to persist to degree completion (Zhai & Newcomb, 2000).

The purpose of the first guiding question of this study was to provide a comprehensive description of an adult vertical transfer student population. The descriptive profile that fit the most adult vertical transfer students was female, White, and

aged 33 years. A significant finding generated by this question was the academic ability of this population. Although previous studies have depicted community college transfers as less prepared academically, the current study found that these students receive high marks at the community college and the university. Researchers have reported that transfer students found the transition from the community college to the university to be stressful and that there was an increased emphasis on academics at the university (Cameron, 2005; Flaga, 2006; Townsend & Wilson, 2006a). The majority of respondents in this study handled the stress and increased academic rigor well.

Conclusion Two – Community college GPA was the most influential variable in predicting the university success of adult vertical transfer students.

Transfer research that focuses solely on academics has been referred to as simplistic (Wawrzynski & Sedlacek, 2003). A goal of this research was to go beyond the academic analysis that makes up the majority of community college transfer research. However, the results of this research, as well as findings in research discussed in chapter two of this document, consistently point to academic variables as influential in the transfer process. No other variable across research studies has been consistently found to impact academic or social adjustment of community college transfer students at the university. As mentioned throughout this document, the vertical transfer process is complex. However, researchers must be cautious not to force complexity into examining the transfer function where none exists. When all research evidence points to academics above all else as the key indicator of success at the university for all transfer students, it might be best to sum up transfer research with a modified version of an adage coined by James Carville, "It's academics, stupid!"

The finding that participants in this study were well prepared academically, as determined by GPA, is of the utmost importance. When determining the academic adjustment of adult transfer students in terms of GPA only, as was the predominant method in all academic specific transfer research, the amount of transfer shock experienced provides an easily quantifiable benchmark by which to determine success. Interestingly, adult transfer students in this study experienced little transfer shock, with a mean GPA decrease of -.13 (SD = .55) from the community college to the university. The research literature revealed conflicting reports on the amount of transfer shock experienced by adult students. Keeley and House (1993) found that adult transfer students experienced little transfer shock, whereas other research findings indicated a more serious decline in GPA (Carlan, 2001). The current study of adult vertical transfer students returned results similar to the findings of Keeley and House.

For the purposes of this study, academic adjustment was measured in two ways: (a) university GPA and (b) academic self-efficacy as measured by the SE-Broad scale. The regression analysis revealed that of the three variables that influenced university GPA (ethnicity, age, and community college GPA) community college GPA accounted for over seven times more variance in university GPA scores than the other two variables combined. The influence of ethnicity and age, although statistically significant, was practically insignificant. In practice, only community college GPA contributed substantially (b = .51, p < .001) to university GPA prediction. Therefore, if a student transferred with a high community college GPA, that person would be expected to do equally well at the university. The influence of community college GPA on university GPA for vertical transfer students found in this study holds true across other studies of

vertical transfer students, both adult transfer students (Carlan, 2001) and traditional aged transfer students (Carlan & Byxbe, 2000; Graham & Hughes, 1994; Keeley & House, 1993; Laanan, 2007; Phlegar, Andrew, & McLaughlin, 1981; Starobin, 2004).

The almost singular importance of community college GPA found in this study raises questions about the influence of additional academic variables in the transfer process. Community college credit hours earned, community college credits accepted at the university, and Associate degree status were not significant predictors of university GPA. This calls into question the utility of an Associate's degree or a minimum credit requirement for transfer students, specifically adult vertical transfer students. Although a previous study found these two variables had statistical significance in predicting university GPA for adult vertical transfer students (Carlan, 2001), the influence was so minor as to not demonstrate practical usage in predicting GPA. Additional studies have found that earning an Associate's degree and credit hours accepted at the university influenced academic adjustment (Arnold, 2000; Carlan & Byxbe, 2000; Kasworm & Blowers, 1994), but the results of this study do not corroborate these findings.

Several statewide university systems require community college transfer students to have earned a minimum amount of credits before being eligible to transfer (see the North Carolina Community College System for an example). Likewise, many institutions will not accept transfer students who do not meet the requirements of junior status; junior status is typically reached through completion of an Associate's degree. Statewide and university specific efforts to require an Associate's degree or other credit requirement before granting transfer students admission should be heavily scrutinized before being implemented.

Conclusion Three – Classroom involvement influenced both academic and social adjustment at the university.

A central theme of this study was the proposed importance of classroom involvement for the adult student. Classroom involvement, in this study considered a social variable, exerted the most influence on academic self-efficacy. The more involved the student was in the community college classroom, the more confidence that student reported in their ability to reach academic milestones at the university. The foundational assumption behind the concept of the connecting classroom is that adult learners utilize the classroom as the fulcrum of the collegiate experience (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999). Additionally, evidence suggests that adult students value community within the classroom (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999, Justice & Dornan, 2001; Philibert, 2005; Rovai, 2002).

The findings of this study suggest that the more the student perceived the classroom as the focal point of their collegiate experience at the community college level, the more confident they were in their academic abilities, and their ability to complete their degree, at the university. The connections with knowledge, peers, and faculty that made up the connecting classroom experience strengthened student confidence in their ability to do well and persist to degree completion. The fact that classroom involvement did not directly influence university GPA, but did influence self-efficacy was somewhat surprising. However, past research has shown that academic self-efficacy was related to academic performance and persistence (Lent et al., 1997; Lent et al., 1984, 1986).

Classroom involvement at the community college was also found to influence social adjustment at the university. Tinto (1975) defined social integration as the incorporation of the quality of a student's relationships with peers and faculty, and with their perceived feelings of belongingness at the institution. According to Alpern (2000), the degree to which a student feels socially integrated at the university has a direct effect on transfer student satisfaction and persistence. The PC-Scale (Bollen & Hoyle, 1990) was used in this study to measure the sense of belongingness adult transfer students felt at MUU.

Classroom involvement ($b = .157$, $p < .001$) and extra-curricular participation ($b = -1.77$, $p < .05$) influenced PC-Scale scores. Although involvement and extra-curricular participation exerted statistically significant influence on PC-Scale, they had minimal practical use in predicting social adjustment. However, the directional nature of the relationships is worth noting. The positive relationship between classroom involvement at the community college and social adjustment indicated that the more a student felt the classroom was the focal point of their college experience at the community college, the more likely they were to feel a sense of belonging at the university. A link between classroom involvement at the university and social adjustment was not examined in this study. The implication of this finding, however, is that students who experience the classroom as the focal point of their community college experience are inclined to do so at the university as well.

Extra-curricular participation at the community college level had a negative impact on social adjustment at the university. Interestingly, students who participated in more extra-curricular activities at the community college felt less of a sense of belonging

to the university. The importance of extra-curricular activities in facilitating a sense of belonging to one's post-secondary institution is well document in the research literature (Astin, 1984; Baker & Siryk, 1984; Graham & Long Gisi, 2000; Laanan, 2007; Pace, 1986; Starobin, 2004; Tinto, 1975, 1993; Townsend, 1995; Townsend & Wilson, 2006).

There are two possible explanations for why extra-curricular participation at the community college would lead to less of a sense of belonging at the university. One, it is possible that students who were highly involved in their personal and academic communities while attending the community college retained those connections and did not forge new ones at the university. Students attend community colleges, particularly adult students, because they are regional institutions that offer close proximity to the student's family, work, and other community obligations (Cohen & Brawer, 2003, 2008; Hardin, 2008). Once at the university, adult transfer students remain true to those academic and personal connections made at the community college (Monroe, 2006).

Another possible explanation could be a lack of extra-curricular activities at the university that cater to the adult student. Extra-curricular activities are one method used to facilitate social integration of transfer students at the university (Laanan, 2001; Woosley & Johnson, 2006; Zamani, 2001). However, many new initiatives to assist in the transfer transition process are decidedly oriented for traditional students (Kodama, 2002). Many institutions are also slow in implementing adult-centered practices (Kasworm, 2003b; Kasworm, Sandmann, & Sissel, 2000; Mancuso, 2001). The lack of available opportunities to participate in extra-curricular activities could limit the adult transfer student's sense of belonging at the university.

Conclusion Four – Environmental variables had little impact on the ability of adult students to participate in academic or social activities.

This study was informed by Tinto's (1975, 1993) theory of student departure, Astin's (1984) theory of student involvement, Bean and Metzner's (1985) model of nontraditional student attrition, and the concept of the connecting classroom (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999). The EV-Scale used in this study was derived principally from the Bean and Metzner model of nontraditional student attrition. The Bean and Metzner model has been used widely by researchers to produce valuable insights into the postsecondary experiences of adult students, and much of the research evidence corroborates the assumptions on which the model is based. However, data collected through the use of the EV-Scale produced results that challenge some of these basic assumptions. Furthermore, these findings run counter to long standing beliefs about the typical experiences of adult students.

The researcher-designed EV-Scale utilized in this study was created to examine the influence of situational barriers on respondent's ability to engage in specific academic and social endeavors at the community college. Adult students generally have responsibilities beyond educational endeavors, including working full-time and parental responsibilities (Knowles, 1984; Merriam & Caffarella, 1999; Merriam, Caffarella, & Baumgartner, 2007), and often times academics are not the top priority (Bean & Metzner, 1985; Berger & Malaney, 2003). Situational barriers are common for adult students, and in many cases situational barriers are better predictors of adjustment and persistence than academic or other variables (Bean & Metzner, 1985). Scalon (2009) found that these situational variables revolved mainly around family; findings that supported earlier

research on transitional barriers adults face in postsecondary education (Berger & Malaney; 2003; Genco, 2007; Hagedorn, 2005; Kasworm, et. al., 2002; Rovai, 2003). The EV-Scale was limited to examining the situational variables of family and work, as these were the two most identified in the research literature.

It was expected that the majority of adult vertical transfer students in this study would report either family obligations, work obligations, or both. Not surprisingly, the research data supported this assumption. Of all respondents, 97.1% were employed either full- or part-time (*N*=365) while completing coursework. Slightly less than 3% were not employed (*N*=11). The data revealed that the majority of respondents, 58.2%, were not financially responsible for others (*N*=219). Those who were financially responsible for others (*N*=157) accounted for the remaining 41.8% of respondents. Only eight study respondents reported having neither work nor family obligations.

Although approximately 98% of respondents reported some type of family or work obligation, these obligations did not limit respondents' ability to participate in specific academic or social activities, nor did it seem to negatively impact GPA. These results support the findings of Graham and Long Gisi (2000), who found that time spent on family and work had little impact on academic outcomes for adults. Scores on the EV-Scale ranged from a low of 10 to a high of 60, with 10 indicating no adverse impact of family and/or work obligations on academic and social endeavors and 60 indicating considerable impact. For this study, the means score for the EV-Scale was 33.40 (*SD* = 10.13). The conclusion here is that although respondents had work and family responsibilities, they did not perceive these responsibilities to severely limit their academic and social participation. These findings contradict much of the research

findings discussed in chapters two of this document that were used to provide a conceptual foundation for this study.

There is no way to determine why this group of adult students perceived the environmental influences of family and work responsibility to have such little impact on academic and social participation at the community college. The majority of these students were academically proficient, and many had parents who had attended college. Giancola, Munz, and Trares (2008) found that continuing generation college students had more family support than first-generation college students. Although family responsibility can limit a student's time to devote to college experiences, encouragement and support from family can mitigate weak academic support and performance (Bean & Metzner, 1985; Scanlon, 2009). Perhaps these students had more family support in the form of shared responsibility for childcare, or parents who understood the difficulties of attending college and subsequently offered their assistance to the student. Moreover, it is possible that students were employed in businesses that supported their pursuit of education. Like family support, support from one's employer can mitigate the negative effects of environmental variables (Bean & Metzner, 1985). Lastly, it is possible that the community colleges students attended had support systems in place to mitigate the negative impact of environmental variables.

Theoretical and Conceptual Considerations

This study was informed by the literature on Tinto's (1975, 1993) theory of student departure, Astin's (1984) theory of student involvement, Bean and Metzner's (1985) model of nontraditional student attrition, and the concept of the connecting classroom (Kasworm, 2003c; Kasworm & Blowers, 1994; Donaldson & Graham, 1999),

assessed the impact of variables identified in the literature on the vertical transfer experiences of adult students, and contributed to the field of community college transfer. The theoretical/conceptual contributions of this study are in the areas of community college transfer, classroom involvement, and academic and social integration.

Community College Transfer

This study contributes a comprehensive examination of a large population of adult vertical transfer students to the community college transfer literature. The thorough descriptive profile and the identification of key variables in the transfer process provide a starting point for further research studies in this area. A rigorous process of variable identification and assessment identified key demographic, academic, and social predictor variables in the vertical transfer process of adult students.

An additional contribution to the field of community college transfer is the researcher-developed survey instrument. The instrument may be used for future research, with or without modifications. The scholarly contribution of the survey instrument was the identification and measurement of six key variables related to community college transfer: (1) precollege characteristics, (2) academic variables at the community college and university, (3) environmental variables at the community college, (4) classroom involvement at the community college, (5) academic self-efficacy at the university, and (6) perceived cohesion at the university. The ability to measure the relationships among these variables would be useful for researchers wishing to further examine the movement of adult students from the community college to the university.

Classroom Involvement

This study further informs the discussion of the classroom as being the focal point of adult student's collegiate experience. The findings of this study support the importance of classroom involvement in increasing academic self-efficacy and social cohesion at the institution. The positive relationships found between classroom involvement and academic self-efficacy, and between classroom involvement and perceived cohesion, contribute to the further understanding of the connecting classroom concept.

Academic and Social Integration

The data on the academic and social integration of adult vertical transfer students is important to the field of community college transfer, but also to the fields of student attrition and retention. Additionally, the specificity of this research to the adult student experience leads to a better understanding of the impact of academic, social, and environmental variables on adult student performance in higher education. In particular, this study contributes to the ongoing discussion of the usefulness of applying theories of academic and social integration that are designed for traditional aged students to nontraditional student populations.

In this study, a patchwork of theories and concepts were utilized to provide direction in conceptualizing the academic and social adjustment process of adult vertical transfer students. The works of Tinto (1975, 1993), Astin (1984), Bean and Metzner (1985), and Kasworm (1995, 2003c) were instrumental in designing a study to pinpoint variables specific to the adult student experience. The data collected in this study outlining the positive influence of academic performance on academic integration, as

well as the positive influence of classroom involvement on academic self-efficacy and perceived cohesion, are critical building blocks to developing a comprehensive theory of adult student adjustment and retention. The findings provide insight and opportunities for further discussion and research on the development and utilization of theories and models for understanding adult student involvement, adjustment, and attrition.

Implications for Policy and Practice

The results of this study demonstrated that specific demographic, academic, and social variables were significant predictors of academic and social adjustment for adult transfer students at the university. The findings of this study have important implications for community college and university student support professionals, transfer transition programs, faculty, and students. The vertical transfer option provides adult students with flexible, affordable access to the baccalaureate degree, yet student-centered and structural barriers exist for students who begin their postsecondary education at a community college (Doyle, 2009; Eggleston & Laanan, 2001). Adult undergraduates face a special set of challenges in the adjustment process into postsecondary education, and many colleges and universities have struggled to adapt to this growing demographic (Council on Adult and Experiential Learning [CAEL], 2000; Sissel, Hansman, & Kasworm, 2001). Recent research places the transitional barriers adults face into four broad categories: (a) educational, (b) institutional, (c) environmental, and (d) psychological (CAEL, 2000; Compton, Cox, & Laanan, 2006; Hardin, 2008).

Addressing Educational Barriers

Study findings showed that community college GPA was by far the most influential variable in predicting university GPA for the adult transfer student. Previous

studies on the academic competence of community college students in general, as well as community college transfer students, have highlighted the recurring issue of academic unpreparedness (Alfonso, 2006; Brint & Karabel, 1989; Carlan & Byxbe 2000; Dougherty, 1992, 2001; Laanan, 1999; Townsend, 1994). The results of this study showed that transfer students who performed well at the community college had little issues with the supposed increased academic rigor of a university. The key implication for policy is that community colleges focus resources on assisting students in increasing and maintaining their GPAs. This could include: (a) ensuring that students who test into remedial English, math, and reading complete the required sequence of courses before moving into college level coursework; (b) utilizing a more academically rigorous curriculum that requires students to do more reading, writing, and research; (c) adequately funding academic learning centers and tutoring services; (d) hiring qualified faculty; and (e) creating a culture that values constant professional development for all faculty and support staff who work with transfer students.

Addressing Institutional Barriers

With the current budget crisis faced by institutions of higher education, many institutions have decided to reduce support services to students in an effort to balance budgets (Jones & Wellman, 2010). It is recommended that community college decision makers at all levels engage in ongoing strategic planning to alleviate budget concerns while maintaining or increasing support services to students. The importance of strategic planning for student support services is well documented in the literature (Bryson, 2004; Galbraith, Sisco, & Guglielmino, 2001), and it is wise to expand the scope of support services to include services for part-time, evening, weekend, adult, and distance students

at the community college (Brigham, 2001; LaPadula, 2003; Ludwig-Hardman & Dunlap, 2003). Community college administrators must also openly communicate their commitment to adult students with sincere words and actions.

Included in this ongoing strategic planning should be a review of current policies enacted to increase community college transfer student success at the university. Many universities and university systems require transfer students to complete a minimum amount of credits or an Associate's degree prior to transferring. The reasoning behind this practice is that students who have successfully completed more credit hours are more academically prepared, and thus more likely to be successful at the university. The results of this study and others (Carlan, 2001; Carlan & Byxbe, 2000; Laanan, 2007) suggest that it is not the quantity of credits earned, but the quality of academic performance in completing those credits. Policies that deny admissions to transfer students who have not earned a specific amount of credits should be scrutinized for effectiveness.

Minimal negative effects on social adjustment at the university were associated with extra-curricular participation at the community college, and minimal positive effects on academic social adjustment were associated with classroom involvement. The implication of these findings effect community college and university policies and practices. Community college administrators responsible for planning professional development should identify educational opportunities that expose faculty to classroom management practices that foster a sense of community in the classroom; university faculty could also benefit from this exposure. Although classroom involvement is

important, it is also recommended that community colleges and universities offer extra-curricular programs that are assessable to adult students.

To assist in the academic and social integration of adult transfer students, universities might look for new co- and extra-curricular practices to facilitate engagement in the university community that do not introduce additional conflict between their academic and life roles. These practices might include team projects with other students, using problem-based learning activities that involve interaction with faculty and peers outside of the classroom, and student-to-student interactions that foster informal relationships (Graham & Long Gisi, 2000). It is also recommended that extra-curricular socialization strategies be adapted to apply in the classroom setting.

Faculty interaction at the university is important in creating a welcoming environment for adult transfer students. It is recommended that faculty be encouraged to pursue continuing education opportunities that focus on adult learning theory and adult learner experiences in higher education. University offices of student organizations or student life should encourage or sponsor adult-specific clubs similar to the Non-Traditional Student Association (NTSA) at MSU-West Plains (http://wp.missouristate.edu/studentorg/default.htm#NTSA). Additionally, university administrators might review best practices, particularly those coming out of distance education research, for ways to foster a sense of belongingness to the university for those students not able to participate in traditional activities that build social cohesion to the institution.

Addressing Environmental and Psychological Barriers

The results of this study did not show environmental variables to have a negative influence on the academic and social adjustment process of adult transfer students, yet it is widely recognized that these barriers are common for the adult student. Likewise, the majority of respondents did not exhibit signs of psychological distress, which include lack of self-confidence and negative beliefs about expectations (Kerka, 1989). Respondents to this study exhibited high levels of academic self-efficacy, showing self-confidence both in their academic abilities and in their ability to complete the degree program.

Environmental variables are not bound by institutional control, and as such the ability of institutional policies and practices to mitigate the impact of environmental variables is limited. Encouragement, from family and/or employer, is of the more effective methods of lessening the impact of environmental variables (Bean & Metzner, 1985). Any institution led initiatives that encourage involvement of the adult transfer student's family, such as family-centered, on-campus activities, or support from the student's employer, such as work-related school projects, has the potential to diminish the influence of environmental variables. Institutions have more control over psychological barriers. It is recommended that community colleges and universities continue to use new and innovative methods to offer support services to adult transfer students including counseling, academic advising, tutoring services, and any other activities that reduce stress and build confidence.

Recommendations for Adult Vertical Transfer Students

The results of this study and others highlight the importance of academic performance at the community college level in preparing students to be successful at the university. Students who prepare well academically at the community college, and select a course load that is more academically rigorous, are more likely to perform well academically at the university. Adult students who are currently enrolled at the community college with the intent of transferring to the university are encouraged to seek out academically demanding courses that meet transfer requirements. Although the number of credit hours earned is often important in meeting institutional transfer requirements, the results of this study show that it is the quality of credits earned, not quantity, which signals success at the university. Students who are experiencing academic difficulty at the community college are strongly encouraged to utilize all academic support services offered at the community college. This includes completing developmental course progressions, as well as utilizing tutoring services, academic learning centers, academic advisors, informal peer groups, and student groups that offer academic support.

The adult students in this study were confident in their ability to complete their baccalaureate degree. The respondents in this study also felt a sense of belonging at their university. Past research studies shown that having a sense of confidence and belongingness at the university positively impacts university academic performance (Bollen & Hoyle, 1990; Lent et. al., 1987). Classroom involvement at the community college was shown to positively impact both confidence at the university and a sense of belonging to the university. Adult transfer students are encouraged to utilize the

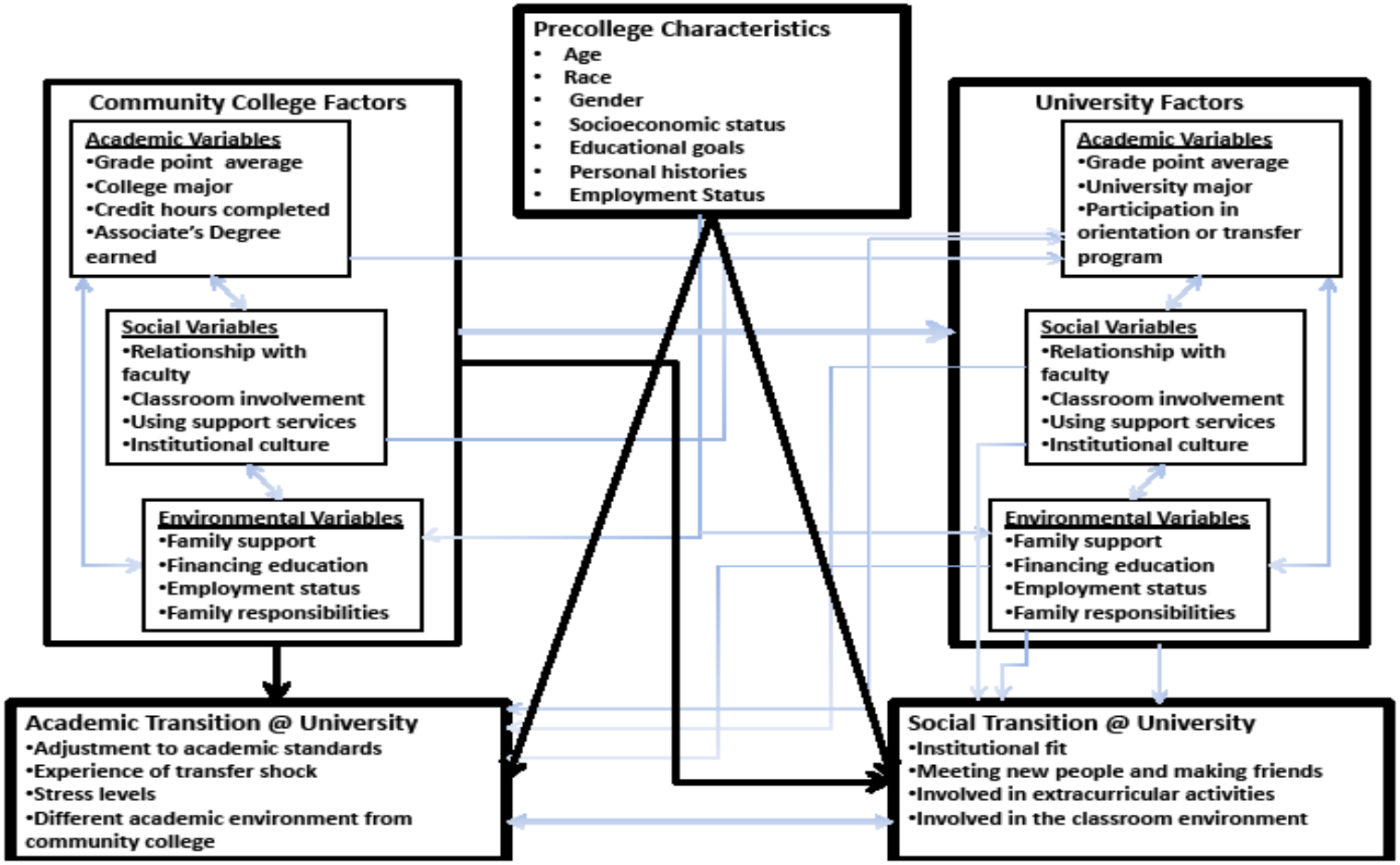
classroom, at the community college and university level, to fulfill their academic and social needs. Recommendations include: (a) applying formal learning experiences, work related learning, and life experience in the classroom; (b) seeking common themes and application of classroom knowledge and "life-world" knowledge; (c) forming social connections with faculty and classmates; and (d) valuing and using the past experience of others in an effort to create a classroom community of learners.

Recommendations for Future Research

Chapter one of this document outlined the five main constructs in the vertical transfer process of adult students (see Figure 1.1): (a) precollege characteristics, (b) community college experiences, (c) university experiences, (d) academic adjustment, and (e) social adjustment. This study examined academic and social adjustment in relation to precollege characteristics and community college experiences. A major limitation of this study was the exclusion of university experiences in the analysis. Future research is required to examine the extent to which university experiences influence academic and social adjustment for the adult vertical transfer student. In a study of traditional aged transfer students, Laanan (2007) found that many community college variables lost their significance after taking into account university variables. Additional research on the university experiences of adult transfer students is needed to provide a comprehensive examination of the transfer process.

There are additional, more detailed relationships among the five main constructs in the vertical transfer process of adult students. Figure 5.1 introduces the Adult Student Vertical Transfer Model. This conceptual model of vertical transfer for the adult student maps out the relationships of the five major constructs, as well as within construct

Figure 5.1: Adult Student Vertical Transfer Model



relationships that might also influence the transfer process. The bolded arrows in this model represent the relationships examined in this study. The grayed arrows in the model represent relationships that might be addressed in future research studies to discover their influence of the transfer experiences of adult students.

Additionally, future researchers could explore the use of different quantitative research designs that incorporate all five major constructs. A design that compares students who experience a positive academic and social adjustment with those who do not, based on the variables identified in this study, might be employed to illuminate the differences in transfer experiences. Environmental variables were not found to have a significant impact on the adult vertical transfer student population in this study. Research designs that incorporate the analysis of institutionally provided or other support mechanisms utilized by adult transfer students at the community college and university are also needed. This information would provide a greater understanding of the adult vertical transfer experience, as well as investigate the effectiveness of specific support mechanisms in removing barriers in the transfer process.

The use of qualitative inquiry methods to further explore the nature and meaning of the transfer process is warranted. During the data collection period of this study, the researcher was contacted by multiple transfer students who wanted to provide additional information about their transfer experiences. Future research could include an exploration of how students internalize their transition and adjustment experiences, what academic-self efficacy and feelings of belongingness really mean to each student, and how relationships with faculty, peers, and support staff engage the student in the overall transition process. There is also a need for more research on specific pedagogical

strategies that facilitate classroom involvement for all students. The transfer process is complex. The results of a qualitative follow-up study combined with the results of this quantitative study would provide a more comprehensive examination of the transfer process for adult students.

This study was conducted at a single university. The findings of this study were limited by this aspect of the research design. It is possible that the conclusions reached for this study would differ had the study been conducted at a different research site. MUU is a selective, public, land-grant university located in a large city with an enrollment of approximately 20,000 students. MUU is a research intensive university and has a Carnegie classification of a High Transfer-In (HTI) institution (Carnegie Foundation for the Advancement of Teaching website, n.d.). One has to consider the differences in institutional type (public vs. private), institutional focus (research vs. teaching) size and demographic profile of the university student body, and HTI classification. Future research studies should utilize the questionnaire designed for this study to explore the potential differences in the transition experiences of adult vertical transfer students as they adjust to differing institutional settings.

Further testing of the questionnaire designed for this study is needed. The questionnaire needs to be tested in different research settings, including private colleges and universities, institutions with more diverse student populations, institutions with a larger residential student population, and on traditional aged transfer students to observe differences in transfer student experiences across the range of receiving institutions. Utilizing the questionnaire in new research settings will aid in establishing the reliability and validity of the instrument, as well as establish the usability of the instrument across

institutions and with various groups of students. As long as accompanied by an appropriate reference to this source, researchers are given permission to use the researcher-designed survey instrument, in part or in full, for future studies on the vertical transfer process.

Future analysis of the data collected for this study is needed. Community college GPA was found to be highly influential in predicting academic adjustment at the university. However, an analysis of predictive variables for community college GPA was out of the purview of this study. Future analysis of the impact of classroom involvement, environmental variables, and extra-curricular participation is needed to determine the amount of influence these variables have on community college GPA.

Final Commentary

Critics often refer to the *cooling out* function of the community college (Clark, 1980), the gatekeeper function of the community college (Brint & Karabel, 1989; Dougherty, 1994, 2001), and the business culture of the community college (Ayers, 2005; Levine, 2005) as institutional structures that limit access to the baccalaureate degree for underserved populations and reproduce class inequality in society. The motivation behind this research project was the researcher's belief that community colleges do increase access to the baccalaureate degree for adult students, and in most instances the results of this study support that conclusion.

The mission of the community college has evolved since the days of preparing working class students, or those with limited means, for the purpose of transfer to a university for further study, to a multi-faceted institution that provides developmental education, vocational/technical training, continuing education courses, and in some cases

4-year degrees. Although the transfer function is no longer the sole purpose of the community college, it remains a vital service accessible to millions of adult students. Adult students who choose the community college as their first step in the long journey to earning a baccalaureate degree should have confidence in their decision. By all indications, the overwhelming majority of adult vertical transfer students in this study are likely to persist to degree completion.

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APPENDICIES

APPENDIX A

FULL STUDY SURVEY INSTRUMENT

1. Welcome

Thank you for taking the time to complete the following survey. Your participation in this survey is very important because the information you provide will be used to help community colleges and universities better serve transfer students now and in the future. The survey takes less than 15 minutes to complete.

The eligibility requirements for this survey are as follows:

You must be 24 years of age or older
You must have completed 12 credit hours of coursework at a community or junior college.

Thanks again for your time and consideration.

*** 1. Do you meet the two eligibility requirements listed above?**

- ◯ Yes
- ◯ No

2. Informed Consent

You are being invited to participate in a research study titled Adult Students and the Vertical Transfer Pathway. This is notification of informed consent for the participation in the research study. The purpose of this research is to identify community college experiences that influence the academic and social adjustment of adult community college transfer students at the university.

Participants in this study should be 24 years old or above and have completed a minimum of 12 credit hours at a community or junior college. Please know the research activity is being conducted by the individual listed below under the supervision of Dr. Lorilee Sandmann and the results may be published.

Jeremy Schwehm
Doctoral Student
University of Georgia
3027 Canaan Place
Mandeville, LA 70448
jschwehm@uga.edu

As a participant in this study, you will complete an online survey about your community college and transfer experiences. There are no foreseen risks or discomforts from your participation and your participation is voluntary. You may refuse to participate or withdraw at anytime without penalty or loss of benefits to which you are otherwise entitled; you can skip any question you feel uncomfortable answering.

It is assumed that participants will not experience direct benefits from participation in this study. However, the findings on academic and social integration have significant implications for furthering our understanding of adult student attrition and retention. The findings from this research have the potential to change the way both community colleges and universities work with adult students. Current services offered by community colleges might be enhanced by catering more to older, mostly part-time students with obligations outside of school. This research also addresses issues of access to the baccalaureate degree for underserved populations.

All individually-identifiable responses will be kept confidential. However, a unique number will be assigned to each respondent through the use of a "cookie" that has no meaning outside of the survey website. If necessary, this will allow each respondent to return to an incomplete survey and be taken directly to the point of exit. If the survey remains incomplete the researcher cannot access it and the answers will not be used as part of the study.

Please note: Internet communications are insecure and there is a limit to the confidentiality that be guaranteed, due to

the limits of the technology. Be assured that once the researcher receives the completed survey, standard confidentiality procedures will be followed. In addition, no individual data will be reported, only summarized data.

Moreover, if you feel uncomfortable with the risk to privacy with taking an Internet survey, you can open a PDF version of the survey instrument located at[insert link]. Simply complete the survey by hand and then submit via U.S. mail at the address above.

If you have questions do not hesitate to contact me at any time. You may contact Jeremy Schwehm via telephone at 704-307-7761 or email at jschwehm@uga.edu.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University
of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

*** 2. By selecting YES, it is assumed that you have read and understand the previous information. Do you want to proceed?**

- ◯ Yes
- ◯ No

3. Adult Community College Transfer Student Experiences Questionnaire

As a transfer student, you are being asked to share your experiences so that community colleges and universities might better serve the adult transfer student population. Your input is very important and will have a direct impact on assisting others in attaining their educational goals.

Taking part in this study is completely voluntary. If you decide to take part, you are free to withdraw at any time.

All individually-identifiable responses will be kept confidential. However, a unique number will be assigned to each respondent through the use of a "cookie" that has no meaning outside of the survey website. If necessary, this will allow each respondent to return to an incomplete survey and be taken directly to the point of exit. If the survey remains incomplete the researcher cannot access it and the answers will not be used as part of the study.

4. Section 1: Community College Experiences

INSTRUCTIONS

Section 1 addresses your COMMUNITY COLLEGE experiences. Please consider all of your time at the community college level when completing this section.

3. Please select a response that best describes the community college you attended. If you have attended more than one community college, you may select more than one option.

- ☐ Urban
- ☐ Suburban
- ☐ Rural

4. Was your community college on a semester hour or quarter hour system?

- ◯ Semester
- ◯ Quarter

5. How many credit hours did you complete at the community college? If you are unsure of the exact amount, please provide your best estimate.

6. Did you earn an Associate's degree?

- ◯ Yes
- ◯ No

7. What was your overall community college GPA? If you are unsure of your exact GPA, please provide your best estimate.

8. Did you utilize the services of a transfer center at the community college?

- ◯ Yes
- ◯ No

5. Community College Social Experiences

INSTRUCTIONS

For the following item, please choose the option that best reflects your community college experiences.

9. I participated in the following extra-curricular activities while attending community college. (You may choose more than one.)

- ☐ Academic Clubs
- ☐ Social Clubs
- ☐ Student Organizations (e.g., Greek Organization, Honors Society, Psychology Association, etc.)
- ☐ Student Government
- ☐ Intramural Sports
- ☐ Official School Sports
- ☐ Other
- ☐ Did Not Participate

6. Community College Classroom Involvement

INSTRUCTIONS

The following items address your attitudes and experiences about all coursework at the community college, not a specific class. Please select a response that best represents your level of agreement with the following statements.

10. For me, the community college classroom was the primary place for learning.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

11. I liked discussing assignments and school work with my fellow students.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

12. I liked it when the faculty asked about my real world experience and used that information to add to the classroom discussion.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

13. I just wanted to memorize facts.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

14. The classroom defined my community college experience.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

15. I liked hearing different opinions and arguments in class.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

16. I liked discussing new ideas in the classroom.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

17. I applied what I learned in class directly to my work.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

18. I used what I learned in the classroom to build on my existing knowledge.

◯ Strongly Disagree ◯ Disagree ◯ Somewhat Disagree ◯ Somewhat Agree ◯ Agree ◯ Strongly Agree

7. Community College Classroom Involvement Continued

#

INSTRUCTIONS

The following items address your attitudes and experiences about all coursework at the community college, not a specific class. Please select a response that best represents your level of agreement with the following statements.

19. The majority of my community college experiences were classroom related.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

20. I liked studying alone while attending community college.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

21. Generally, I liked doing group work at the community college.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

22. I liked a free-flowing exchange of ideas between students and faculty in the classroom.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

23. Learning only took place within the walls of the classroom.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

24. Community college instructors with real-world experience were more knowledgeable than those without it.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

25. I wanted faculty to tell me what I needed to know and then I would learn that.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

26. I was encouraged to apply past learning in the classroom.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

27. I think that academic knowledge is valuable only if it reflects my own personal perspectives on life.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

8. Non-Education Experiences

INSTRUCTIONS

The following items address your work, family, and financial responsibilities WHILE ATTENDING COMMUNITY COLLEGE. Please select a response that best represents your OVERALL community college experience.

28. I was financially responsible for myself.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

29. I was financially responsible for others.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

30. My family responsibilities limited my social activities.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

31. My family responsibilities limited my ability to meet with an advisor.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

32. My family responsibilities limited my ability to meet with my instructors.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

33. My family responsibilities limited my ability to study.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree

34. My work responsibilities limited my social activities.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree ○ N/A

35. My work responsibilities limited my ability to meet with an advisor.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree ○ N/A

36. My work responsibilities limited my ability to meet with my instructors.

○ Strongly Disagree ○ Disagree ○ Somewhat Disagree ○ Somewhat Agree ○ Agree ○ Strongly Agree ○ N/A

#

37. My work responsibilities limited my ability to study.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree	N/A
◯	◯	◯	◯	◯	◯	◯

9. Section 2: University Experiences

INSTRUCTIONS

Section 2 addresses experiences at your CURRENT UNIVERSITY. Please consider all of your time at this university when completing this section.

38. How many credits have you earned at the university? If you are unsure, please respond with your best estimate.

39. How many community college credits did you transfer in to the university? If you are unsure, please respond with your best estimate.

40. What is your overall university GPA? (If you are in your 1st semester, please respond with your expected GPA). If you are unsure of your GPA, please respond with your best estimate.

10. University Academic Attitudes

INSTRUCTIONS

Assuming you are motivated to do your best, please indicate how much CONFIDENCE you have that you can do each of the following at your CURRENT university.

41. Complete the written communication general education requirements (e.g., courses in writing skills) with grades of at least a 3.0.

No Confidence	Very Little Confidence	Little Confidence	Some Confidence	Much Confidence	Complete Confidence
◯	◯	◯	◯	◯	◯

42. Complete the arts and humanities general education requirements (e.g., courses in literature, history) with grades of at least a 3.0.

No Confidence	Very Little Confidence	Little Confidence	Some Confidence	Much Confidence	Complete Confidence
◯	◯	◯	◯	◯	◯

43. Complete the social and behavioral sciences general education requirements (e.g., courses in political science, sociology) with grades of at least 3.0.

No Confidence	Very Little Confidence	Little Confidence	Some Confidence	Much Confidence	Complete Confidence
◯	◯	◯	◯	◯	◯

44. Complete the physical sciences general education requirement with a GPA of 3.0.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ More Confidence ○ Complete Confidence

45. Earn a cumulative GPA of at least a 2.0 after two years of study.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence ○ N/A

46. Earn a cumulative GPA of at least 2.0 after three years of study.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence ○ N/A

47. Gain admission to your first choice college major.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

48. Complete the requirements for your academic major with a GPA of at least 3.0.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

49. Excel at this university over the next semester.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

50. Excel at this university over the next two semesters.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

51. Excel at this university over the next three semesters.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

52. Graduate from this university.

○ No Confidence ○ Very Little Confidence ○ Little Confidence ○ Some Confidence ○ Much Confidence ○ Complete Confidence

11. University Social Attitudes

INSTRUCTIONS

The following items address your sense of connection to your CURRENT university. Please select the response that best reflects your attitudes.

#

53. I feel a sense of belonging to this university.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

54. I feel that I am a member of this university community.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

55. I see myself as part of the university community.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

56. I am enthusiastic about this university.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

57. I am happy to be at this university.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

58. This university is one of the best schools in the state.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

12. Section 3: Demographic Information

INSTRUCTIONS

In this final section, please select answers that best describe you. These records will be kept confidential. In any sort of report we make public, we will not include any information that will make it possible to identify you.

59. In what year were you born?

60. Gender

- Female
- Male
- Decline to State

61. Ethnicity (You may select all that apply)

- [ ] African American
- [ ] Asian American
- [ ] Caucasian
- [ ] Hispanic American
- [ ] Native American
- [ ] Bi-Racial
- [ ] Other
- [ ] Decline to State

62. Household Income

- ◯ Less than $10,000
- ◯ $10,000 - $19,999
- ◯ $20,000 - $29,999
- ◯ $30,000 - $39,999
- ◯ $40,000 - $49,999
- ◯ $50,000 - $69,999
- ◯ $70,000 - $89,999
- ◯ $90,000 and above

63. Are you the first person in your immediate family (parents, grandparents; siblings) to attend college?

- ◯ Yes
- ◯ No

13. Thank You!

Thank you for taking the time to participate. To submit your answers, select DONE. If you do not want to submit your answers at this time, please select EXIT SURVEY in the top right corner. You will be able to come back at a later time and submit your answers if you choose.

Have a wonderful day!

#

APPENDIX B

PRELIMINARY SURVEY INSTRUMENT USED FOR CRITIQUE SESSION

ACCTSQ: Critique Session

1. Welcome to Critique Session

Thank you for taking the time to critique the following questionnaire. For my dissertation, I am examining the impact of community college experiences on the academic and social adjustment process of adult community college students who have transferred to a university.

You are being asked to review and critique the prototype questionnaire. Your responses will be anonymous, so feel free to be as candid as you would like. Each question will be followed by a comment box for any thoughts or suggestions you might have. Additionally, questions addressing overall design and style will be asked at the end of the document.

Thanks again for your time and consideration. Enjoy!

2. Adult Community College Transfer Student Experiences Questionnaire

As a transfer student, you are being asked to share your experiences so that community colleges and universities might better serve the adult transfer student population. Your input is very important and will have a direct impact on assisting others in attaining their educational goals.

Taking part in this study is completely voluntary. You may skip any questions that you do not want to answer. If you decide to take part, you are free to withdraw at any time.

The records of this study will be kept confidential. In any sort of report we make public, we will not include any information that will make it possible to identify you. Research records will be kept in a password protected file; only the researchers will have access to the records.

3. Section 1: Community College Experiences

INSTRUCTIONS

Section 1 addresses your COMMUNITY COLLEGE experiences. Please consider all of your time at the community college level when completing this section.

1. What was your overall community college GPA? If you are unsure of your exact GPA, please provide your best estimate.

2. Was your community college on a semester hour or quarter hour system?

◯ Semester ◯ Quarter

3. How many credit hours did you complete at the community college? If you are unsure of the exact amount, please provide your best estimate.

ACCTSQ: Critique Session

4. Did you earn and Associate's degree?

- ◯ Yes
- ◯ No

5. Did you utilize the services of a transfer center at the community college?

- ◯ Yes
- ◯ No

6. What community college did you attend?

7. REVIEWER: Please use this section for feedback on items 1 - 4.

4. Community College Social Experiences

INSTRUCTIONS

The following questions address your social experiences at the community college. Choose an option that best reflects your level of agreement with each statement.

1. I enjoyed my time at the community college?

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

2. I made friends through my social activities at the community college.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

5. Community College Social Experiences: Continued

INSTRUCTIONS

For the following statements, please choose the option that best reflects your community college experiences.

ACCTSQ: Critique Session

1. I spent time on campus outside of class.

◯ Never ◯ Almost Never ◯ Sometimes ◯ Almost Always ◯ Always

REVIEWER COMMENTS

2. I pursued extra-curricular activities sponsored by the community college.

◯ Never ◯ Almost Never ◯ Sometimes ◯ Almost Always ◯ Always

REVIEWER COMMENTS

3. I participated in clubs, student organizations, and/or student government.

◯ Never ◯ Almost Never ◯ Sometimes ◯ Almost Always ◯ Always

REVIEWER COMMENTS

4. I spent time on campus outside of class to socialize.

◯ Never ◯ Almost Never ◯ Sometimes ◯ Almost Always ◯ Always

REVIEWER COMMENTS

6. Community College Classroom Involvement

INSTRUCTIONS

The following items address your attitudes and experiences about all coursework at the community college, not a specific class. Please select a response that best represents your OVERALL experience in the community college classroom.

1. I liked to discuss new ideas and solicit opinions of others in the community college classroom.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

ACCTSQ: Critique Session

2. I liked a free-flowing exchange of ideas and information between students and faculty.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

3. I liked it when my instructor asked me about my real-world experience and used that information to add to the classroom lessons.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

4. I DID NOT like the formality of the community college classroom.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

5. I DID NOT like to do group projects at the community college.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

6. I liked to hear different opinions and arguments in the community college classroom.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

7. I just wanted to memorize facts.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

ACCTSQ: Critique Session

8. I liked to study alone while attending community college.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

9. The majority of my community college experiences were classroom related.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

10. For me, the classroom was the primary place for learning.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

11. I believe that learning only took place within the walls of the classroom.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

12. I believe that community college instructors who had real-world experience were more knowledgeable than faculty members who did not.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

13. I wanted community college instructors to tell me what I needed to know and I would learn that.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

14. I was encouraged to use past learning and life experiences in the community college classroom.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

ACCTSQ: Critique Session

15. My past experiences and perspectives on learning were valued in the community college classroom.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

16. My community college classroom experiences provided me with knowledge applicable to my work and/or family life.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

17. My adult roles of family, work, and student were recognized in the community college classroom.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

7. Non-Education Experiences

INSTRUCTIONS

The following items address your work, family, and financial responsibilities while attending community college. Please select a response that best represents your OVERALL community college experience.

1. I was financially responsible for myself.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

2. I was financially responsible for others (dependents).

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

ACCTSQ: Critique Session

3. My work responsibilities limited my social time while attending community college.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

4. My work responsibility limited my ability to meet with an advisor.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

5. My work responsibilities limited my ability to meet with my instructors.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

6. My work responsibilities limited my ability to study.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

7. My family responsibilities limited my social time while attending community college.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

8. My family responsibilities limited my ability to meet with an advisor.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

9. My family responsibilities limited my ability to meet with my instructors.

Strongly Disagree | Disagree | Neither | Agree | Strongly Agree

REVIEWER COMMENTS

ACCTSQ: Critique Session

10. My family responsibilities limited my ability to study.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

8. Section 2: University Experiences

INSTRUCTIONS

Section 2 addresses specific attitudes and feelings regarding your CURRENT UNIVERSITY. Please consider all of your time at this university when completing this section.

1. What is your overall university GPA? (If you are in your 1st semester, please respond with your expected GPA). If you are unsure of your GPA, please respond with your best estimate.

2. How many credits have you earned at the university?

3. How many community college credits did you transfer in to the university? If you are unsure, please respond with your best estimate.

4. Reviewer comments on items 1-3.

9. University Academic Attitudes

INSTRUCTIONS

Assuming you are motivated to do your best, please indicate how much CONFIDENCE you have that you can do each of the following at your CURRENT university.

ACCTSQ: Critique Session

1. Complete the written communication general education requirements (e.g., courses in writing skills) with grades of at least a 3.0.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

2. Complete the arts and humanities general education requirements (e.g., courses in literature, history) with grades of at least a 3.0.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

3. Complete the social and behavioral sciences general education requirements (e.g., courses in political science, sociology) with grades of at least 3.0.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

4. Earn a cumulative GPA of at least a 2.0 after two years of study.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

5. Earn a cumulative GPA of at least 2.0 after three years of study.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

6. Gain admission to your first choice college major.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

ACCTSQ: Critique Session

7. Complete the requirements for your academic major with a GPA of at least 3.0.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

8. Excel at this university over the next semester.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

9. Excel at this university over the next two semesters.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

10. Excel at this university over the next three semesters.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

11. Graduate from this university.

◯ No Confidence ◯ Very Little Confidence ◯ Some Confidence ◯ Much Confidence ◯ Complete Confidence

REVIEWER COMMENTS

10. University Social Attitudes

INSTRUCTIONS

The following items address you sense of connection to your CURRENT university. Please select the response that best reflects your attitudes.

ACCTSQ: Critique Session

1. I feel a sense of belonging to this university.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

2. I feel that I am a member of this university community.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

3. I see myself as part of the university community.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

4. I am enthusiastic about this university.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

5. I am happy to be at this university.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

6. This university is one of the best schools in the state.

◯ Strongly Disagree ◯ Disagree ◯ Neither ◯ Agree ◯ Strongly Agree

REVIEWER COMMENTS

11. Section 3: Demographic Information

INSTRUCTIONS

In this final section, please select answers that best describe you. These records will be kept confidential. In any sort of report we make public, we will not include any information that will make it possible to identify you.

ACCTSQ: Critique Session

1. In what year were you born?

2. Gender

- ◯ Female
- ◯ Male
- ◯ Decline to State

3. Ethnicity (You may select all that apply)

- ☐ African America
- ☐ Asian American
- ☐ Caucasian
- ☐ Hispanic American
- ☐ Native American
- ☐ Bi-Racial
- ☐ Other
- ☐ Decline to State

4. Household Income

- ◯ Less than $10,000
- ◯ $10,000 - $19,999
- ◯ $20,000 - $29,999
- ◯ $30,000 - $39,999
- ◯ $40,000 - $49,999
- ◯ $50,000 - $69,999
- ◯ $70,000 - $89,999
- ◯ $90,000 and above

5. Are you the first person in your immediate family (parents, grandparents) to attend college?

- ◯ Yes
- ◯ No

12. REVIEWER COMMENTS

Thanks for your time. I really appreciate your input.

1. Format: List specific format problems and specific example of good format.

ACCTSQ: Critique Session

2. Overall, was the questionnaire easy to understand?

- ◯ Yes
- ◯ No

3. Were the instructions clear?

- ◯ Yes
- ◯ No

4. Did you have any confusion as to whether items were addressing community college or university experiences?

- ◯ Yes
- ◯ No

5. Overall, was the questionnaire easy to navigate?

- ◯ Yes
- ◯ No

6. Quality of Questions: List or comment on specific good/bad questions and rationale for your comments.

7. Comment on length of questionnaire.

8. Demographic Data: Were demographic data appropriate and/or justified?

9. Question Order: Was the ordering of questions appropriate?

10. Do you foresee any problems with bias, ethics, leading questions?

APPENDIX C

INITIAL INSTITUTIONAL REVIEW BOARD APPROVAL

PROJECT NUMBER: 2011-10298-0
TITLE OF STUDY: Vertical Transfer and the Adult Student
PRINCIPAL INVESTIGATOR: Dr. Lorilee R. Sandmann

Dear Dr. Sandmann,

The University of Georgia Institutional Review Board (IRB) has reviewed and approved your above-titled proposal through the exempt (administrative) review procedure authorized by 45 CFR 46.101(b)(2) - Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, /unless:/(i). the information obtained is recorded in such a manner that human participants can be identified, directly or through identifiers linked to the participants; /and/(ii). any disclosure of the human participants' responses outside the research could reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation.

Your approval packet will be sent by mail. Please remember that any changes to this research proposal can only be initiated after review and approval by the IRB (except when necessary to eliminate apparent immediate hazards to the research participant). Any adverse events or unanticipated problems must be reported to the IRB immediately. The principal investigator is also responsible for maintaining all applicable protocol records (regardless of media type) for at least three (3) years after completion of the study (i.e., copy of approved protocol, raw data, amendments, correspondence, and other pertinent documents). You are requested to notify the Human Subjects Office if your study is completed or terminated.

Good luck with your study, and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Regards,

Kim Fowler, CIP
Human Subjects Office
627A Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411
kfowler@uga.edu
Telephone: 706-542-5318
Fax: 706-542-3360
http://www.ovpr.uga.edu/hso/

APPENDIX D

APPROVAL OF AMENDED INSTITUTIONAL REVIEW BOARD

APPLICATION

KIMBERLY C Fowler <kfowler@uga.edu> Thu, Feb 17, 2011 at 2:39 PM
To: Lorilee R Sandmann <sandmann@uga.edu>
Cc: Jeremy Schwehm <jschwehm@uga.edu>

PROJECT NUMBER: 2011-10298-1
TITLE OF STUDY: Vertical Transfer and the Adult Student
PRINCIPAL INVESTIGATOR: Dr. Lorilee R. Sandmann

Dear Dr. Sandmann and Mr. Schwehm,

The University of Georgia Institutional Review Board (IRB) has reviewed and approved your request for modifications to the above-titled human subjects proposal. It was determined that the amendment request continues to meet the criteria for exempt (administrative) review procedures.

Your approval packet will be sent via campus mail. Please remember that any changes to this research proposal can only be initiated after review and approval by the IRB (except when necessary to eliminate apparent immediate hazards to the research participant). Any adverse events or unanticipated problems must be reported to the IRB immediately. The principal investigator is also responsible for maintaining all applicable protocol records (regardless of media type) for at least three (3) years after completion of the study (i.e., copy of approved protocol, raw data, amendments, correspondence, and other pertinent documents). You are requested to notify the Human Subjects Office if your study is completed or terminated.

Good luck with your study, and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Regards,

Kim Fowler, CIP
Human Subjects Office
631 Boyd Graduate Studies Research Center
University of Georgia
Athens, GA 30602-7411
kfowler@uga.edu
Telephone: 706-542-5318
Fax: 706-542-3360
http://www.ovpr.uga.edu/hso/

APPENDIX E

PERMISSION TO CONDUCT RESEARCH AT MUU

Airey, Dixie <dsairey@[redacted].edu> Mon, Oct 25, 2010 at 2:49 PM

To: Jeremy Schwehm <jeremyschwehm@gmail.com>

Cc: "Coppola, Steve" <SCoppola@[redacted].edu>, "Runden, Cat" <CatRunden@[redacted].edu>

Jeremy,

Thank you for sending your IRB materials to me.

After reading everything, I am satisfied that the research project (as presented to us) is benign and there is no inference or mention of [redacted] that would lead a potential participant to think that [redacted] is endorsing the research project.

The Office of Research Compliance is registering your project in our "No IRB Review Required at [redacted]" database so we will have a point of reference if someone calls to inquire about your project.

I've cc'd Steve Coppola on this note so he can start the Work Request process on the dataset for the email addresses for [redacted] Adult (25+) Community College Transfer Students.

We hope you have a successful research project.
Best regards,

Dixie S. Airey

Dixie S Airey | Director of Research Compliance

APPENDIX F

SURVEY ANNOUNCEMENT

Dear Transfer Student,

Hello. My name is Jeremy Schwehm and I have worked with community college transfer students in making the transition to the university. Tomorrow I will be sending you an online survey asking for information about your experiences as a transfer student. Your participation in this survey is very important because the information you provide will be used to help community colleges and universities better serve transfer students now and in the future. The survey will only take less than 30 minutes to complete.

Your participation in this survey is voluntary.

When you receive the email and link to the survey tomorrow, I would really appreciate it if you could take less than 30 minutes of your time to complete the survey.

All survey responses will be kept confidential.

Thanks in advance for your time,

Jeremy Schwehm

APPENDIX G

SURVEY INVITATION

Dear Transfer Student,

Hello. My name is Jeremy Schwehm and I have worked with community college transfer students in making the transition to the university. I am writing to request your participation in an online survey to share your experiences as a transfer student. The link to the survey is at the bottom of this message. Your participation in this survey is very important because the information you provide will be used to help community colleges and universities better serve transfer students now and in the future. The survey will only take less than 30 minutes to complete.

Your participation in this survey is voluntary. All of your responses will remain strictly confidential. There is no penalty for not participating in the survey.

Please click on the link below to complete the survey. Thanks very much for your participation.

Survey Link:

All survey responses will be kept confidential.

Thanks in advance for your time,

Jeremy Schwehm

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address *IRB@uga.edu*

APPENDIX H

FOLLOW UP SURVEY INVITATION

Dear Transfer Student,

Hello. My name is Jeremy Schwehm and I have worked with community college transfer students in making the transition to the university. I know you are busy with school work and other obligations, but your input is extremely important. This is a follow-up requesting your participation in a survey of community college transfer students.

I am writing to request your participation in an online survey to share your experiences as a transfer student. The link to the survey is at the bottom of this message. Your participation in this survey is very important because the information you provide will be used to help community colleges and universities better serve transfer students now and in the future. The survey will only take less than 30 minutes to complete.

Your participation in this survey is voluntary. All of your responses will remain strictly confidential. There is no penalty for not participating in the survey.

Please click on the link below to complete the survey. Thanks very much for your participation.

Survey Link:

All survey responses will be kept confidential.

Thanks in advance for your time,

Jeremy Schwehm

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address *IRB@uga.edu*

APPENDIX I

FINAL REQUEST FOR PARTICIPATION

Dear Transfer Student,

I know you are busy with school work and other obligations, but your input is extremely important. This is a final notice requesting your participation in a survey of community college transfer students. This is your chance to provide information that will directly impact the way community colleges and universities work with transfer students.

I am writing to request your participation in an online survey to share your experiences as a transfer student. The link to the survey is at the bottom of this message. Your participation in this survey is very important because the information you provide will be used to help community colleges and universities better serve transfer students now and in the future. The survey will only take less than 30 minutes to complete.

Your participation in this survey is voluntary. All of your responses will remain strictly confidential. There is no penalty for not participating in the survey.

Please click on the link below to complete the survey. Thanks very much for your participation.

Survey Link:

All survey responses will be kept confidential.

Thanks in advance for your time,

Jeremy Schwehm

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address *IRB@uga.edu*

APPENDIX J

IMPLIED CONSENT DOCUMENT

This is notification of implied consent for the research study titled *Moving Up: Adult Students and the Vertical Transfer Pathway*. The purpose of this research is to identify community college experiences that influence the academic and social adjustment of adult community college transfer students at the university.. Please know the research activity is being conducted by the individual listed below under the supervision of Dr. Lorilee Sandmann and the results may be published.

Jeremy Schwehm
Doctoral Student
University of Georgia
3027 Canaan Place
Mandeville, LA 70448
jschwehm@uga.edu

As a participant in this study, you will complete an online survey about your community college and transfer experiences. There are no foreseen risks to your participation and your participation is voluntary. You may refuse to participate or withdraw at anytime without penalty, or skip any question you feel uncomfortable answering. The questionnaire should take 20-30 minutes to complete.

All of your responses will be confidential and will not be associated with your name or e-mail address. However, a unique number will be assigned to each respondent through the use of a "cookie" that has no meaning outside of the survey website. If necessary, this will allow each respondent to return to an incomplete survey and be taken directly to the point of exit. If the survey remains incomplete the researcher cannot access it and the answers will not be used as part of the study.

Please note: *Internet communications are insecure and there is a limit to the confidentiality that be guaranteed, due to the limits of the technology. Be assured that once the researcher receives the completed survey, standard confidentiality procedures will be followed. In addition, no individual data will be reported, only summarized data.*

Moreover, if you feel uncomfortable with the risk to privacy with taking an Internet survey, you can open a PDF version of the survey instrument located at [insert link]. Simply complete the survey by hand and then submit via U.S. mail at the address above.

If you have questions do not hesitate to contact me at any time. You may contact Jeremy Schwehm via telephone at 704-307-7761 or email at jschwehm@uga.edu.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629

Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address *IRB@uga.edu*

APPENDIX K

PERMISSION TO USE SE-BROAD SCALE

from **Robert W. Lent** <boblent@umd.edu>
to Jeremy Schwehm <jschwehm@uga.edu>

date Fri, Sep 17, 2010 at 4:29 PM
subject RE: Requesting Permission to use SE-Broad Scale
mailed-by uga.edu

Here you go. See attached measurement guide as well.

Best wishes,
Dr. Lent

From: Jeremy Schwehm [mailto:jschwehm@uga.edu]
Sent: Friday, September 17, 2010 11:50 AM
To: boblent@wam.umd.edu
Subject: Requesting Permission to use SE-Broad Scale

Dear Dr. Lent,

I am a doctoral student in the Adult Education program at the University of Georgia. I am writing to request permission to use the Self-Efficacy for Broad Academic Milestones Scale in my research. My research focus is on the transition process of adult transfer students moving from the community college to the university. In particular, I am examining the social and academic transition components of that process.

I would very much like to use your scale, among others, in my research. I appreciate your time and consideration of this request.

Sincerely,

Jeremy Schwehm
jschwehm@uga.edu
704.307.7761

APPENDIX L

PERMISSION TO USE PERCEIVED COHESION SCALE

TABLE 1: Perceived Cohesion Scale[a]

Sense of Belonging
I feel a sense of belonging to _____.
I feel that I am a member of the _____ community.
I see myself as part of the _____ community.
Feelings of Morale
I am enthusiastic about _____.
I am happy to be at [live in] _____.
_____ is one of the best schools [cities] in the nation.

[a] Responses are recorded on Likert scales ranging from 0 ("strongly disagree") to 5 ("neutral") to 10 ("strongly agree"). We substituted the name of the reference group for perceived cohesion in the blanks. Bracketed words in the final two items were used in the present study when referring to the city sample. The items are sorted for purposes of presentation; for actual use we suggest random ordering.

Items of the Perceived Cohesion Scale were generated by Bollen in the fall of 1984.

attraction presupposes that members of a group have at least some familiarity with each group member. In contrast, sociology applies cohesion to moderate-to-large groups where face-to-face interaction or even knowledge of everyone in the group of interest is not possible. In such groups the idea of equating interpersonal attraction with cohesion makes little sense. Yet, the dimensions of belonging and morale still apply. The samples we chose for this study illustrate this point. We investigate perceived cohesion in a sample of college students and a sample of residents of a mid-sized city. In both samples, respondents are not acquainted with all other members of their respective groups. Focusing upon belonging and morale as dimensions of cohesion liberates the empirical study of cohesion from the study of only small groups and is more in keeping with the study of cohesion regardless of group size.

PERCEIVED COHESION SCALE

The Perceived Cohesion Scale (PCS), presented in Table 1, parallels the preceding theoretical definition. Three of the six indicators pertain to sense of belonging and three to feelings of morale. The items apply to many groups where the group name can be substituted in the blank. In some cases a slight rewording may be necessary, as in the case of the second and third morale items. Also, the scale has few items so that it requires minimal questionnaire space or respondent's time, and so that it does not become excessively repetitious.

We recognize that the wording of these items might limit the use of the scale with certain groups and samples. For example, enthusiasm (first indicator of morale) may not characterize the affective manifestation of morale exhibited

APPENDIX M

FACTORS AND RELIABILITY COEFFICIENTS OF THE CONNECTING CLASSROOM AND ENVIRONMENTAL VARIABLE SCALES

Description of factors	Factor loading
Connecting Classroom Scale	
KNOWINT (α = .85)	
I liked hearing different opinions and arguments	.87
I liked a free-flowing exchange of ideas	.79
I liked discussing new ideas in the classroom	.77
CCLEARN (α = .73)	
I applied what I learned directly to my work	.71
Classroom learning to build on existing knowledge	.66
I was encouraged to apply past learning	.58
I liked it was faculty asked about my experience	.57
INVOLVEMENT (α = .66)	
Majority of experiences were classroom related	.87
The classroom was the primary place for learning	.71
The classroom defined my college experience	.71
KNOWVALUE (α = .57)	
Academic knowledge reflects personal perspective	.76
I wanted faculty to tell me what I needed to know	.72
I just wanted to memorize facts	.63
PEERINT (α = .65)	
I liked discussing assignments with fellow students	.46
I liked studying alone	.80
I liked doing group work	.76
Environmental Variables	
FAMILY (α = .88)	
Family responsibility limited meet with advisor	.86
Family responsibility limited meet with faculty	.85
Family responsibility limited time to study	.82
Family responsibility limited social activities	.80
I was financially responsible for others	.71

APPENDIX M CONTINUED

Descriptions	Factor loading
WORK (α = .90)	
Work responsibility limited meet with faculty	.90
Work responsibility limited meet advisor	.90
Work responsibility limited study	.89
Work responsibility limited social activities	.78

APPENDIX N

TEST FOR NORMALITY OF SE-BROAD DATA FOR RESPONDENTS BY ASSOCIATE'S DEGREE STATUS

			Shapiro-Wilk		
		n	Statistic	df	Sig.
Associate's Degree	Yes	252	.929	252	.000
	No	122	.832	122	.000

APPENDIX O

TEST FOR NORMALITY OF SE-BROAD DATA FOR RESPONDENTS BY "N/A" SELECTION

			Shapiro-Wilk		
		N	Statistic	df	Sig.
N/A Selection	Yes	252	.359	12	.000
	No	122	.890	363	.000

APPENDIX P

TEST FOR NORMALITY OF ENVIRONMENTAL SCALE DATA FOR RESPONDENTS BY "N/A" SELECTION

			Shapiro-Wilk		
		n	Statistic	df	Sig.
N/A Selection	Yes	10	.893	10	.183
	No	366	.983	366	.000

APPENDIX Q

INTER-ITEM CORRELATION MATRIX FOR CONNECTING CLASSROOM SCALE

CC1	1.000																	
CC2	.360	1.000																
CC3	.393	.591	1.000															
CC4	-.027	.044	.051	1.000														
CC5	.436	.199	.267	-.113	1.000													
CC6	.194	.482	.408	.182	.217	1.000												
CC7	.257	.542	.462	.198	.163	.669	1.000											
CC8	.262	.426	.436	.044	.180	.282	.345	1.000										
CC9	.406	.400	.458	.120	.273	.356	.481	.503	1.000									
CC10	.517	.151	.184	-.099	.502	.121	.139	.121	.318	1.000								
CC11	.021	.300	.112	.040	-.007	.091	.072	.123	.027	-.047	1.000							
CC12	.208	.417	.285	-.084	.136	.193	.193	.221	.223	.137	.433	1.000						
CC13	.325	.512	.421	.140	.260	.675	.614	.314	.439	.262	.173	.318	1.000					
CC14	.080	-.189	-.125	-.219	.196	-.051	-.123	-.154	-.145	.226	-.088	-.022	-.047	1.000				
CC15	.199	.116	.233	.018	.272	.142	.195	.105	.253	.170	-.007	.022	.196	.049	1.000			
CC16	-.072	.087	-.080	.305	-.150	.123	.226	.058	-.001	-.096	.059	-.029	.052	-.261	-.123	1.000		
CC17	.306	.306	.311	-.020	.277	.362	.334	.351	.421	.185	.008	.189	.367	-.158	.218	-.006	1.000	
CC18	.094	.048	.067	-.294	.121	-.031	-.121	.069	.000	-.012	.038	.195	-.042	.191	.060	-.324	.125	1.000

APPENDIX R

INTER-ITEM CORRELATION MATRIX FOR ENVIRONMENTAL VARIABLE SCALE

EV1	EV2	EV3	EV4	EV5	EV6	EV7	EV8	EV9	EV10
1.000	.277	.236	.129	.127	.097	.275	.239	.190	.214
	1.000	.625	.473	.451	.503	.153	.158	.153	.099
		1.000	.584	.584	.619	.296	.254	.216	.164
			1.000	.904	.748	.284	.508	.493	.381
				1.000	.758	.295	.523	.539	.404
					1.000	.379	.444	.458	.484
						1.000	.674	.641	.734
							1.000	.931	.753
								1.000	.772
									1.000

APPENDIX S

INTER-ITEM CORRELATION FOR SE-BROAD SCALE

SE1	1.000											
SE2	.799	1.000										
SE3	.766	.803	1.000									
SE4	.758	.724	.769	1.000								
SE5	.581	.533	.573	.732	1.000							
SE6	.197	.192	.191	.266	.489	1.000						
SE7	.463	.480	.471	.688	.448	.154	1.000					
SE8	.536	.498	.567	.800	.512	.177	.571	1.000				
SE9	.521	.468	.515	.853	.473	.127	.494	.683	1.000			
SE10	.477	.406	.485	.840	.447	.125	.462	.670	.905	1.000		
SE11	.453	.387	.455	.819	.450	.131	.455	.633	.866	.960	1.000	
SE12	.389	.349	.405	.713	.497	.195	.460	.465	.657	.662	.645	1.000

APPENDIX T

INTER-ITEM CORRELATION MATRIX FOR PERCEIVED COHESION SCALE

PC1	PC2	PC3	PC4	PC5	PC6
1.000	.899	.860	.740	.680	.608
	1.000	.909	.717	.651	.584
		1.000	.746	.658	.574
			1.000	.837	.717
				1.000	.716
					1.000

APPENDIX U

SUMMARY DESCRIPTIVE STATISTICS FOR EACH ITEM OF THE CONNECTING CLASSROOM SCALE (N = 376)

Item	M	SD
1. For me, the community college classroom was the primary place for learning.	4.91	1.03
2. I liked discussing assignments and school work with my fellow students.	4.52	1.25
3. I liked it when the faculty asked about my real world experience and used that information to add to the classroom discussion.	4.84	1.08
4. The classroom defined my community college experience.	4.17	1.21
5. I liked hearing different opinions and arguments in class.	4.95	.95
6. I liked discussing new ideas in the classroom.	5.12	.89
7. I applied what I learned in class directly to my work.	4.49	1.18
8. I used what I learned in the classroom to build on my existing knowledge.	5.18	.89
9. The majority of my community college experiences were classroom related.	4.78	1.06
10. Generally, I liked doing group work at the community college.	3.34	1.37
11. I liked a free-flowing exchange of ideas between students and faculty in the classroom.	4.91	.93
12. Learning only took place within the walls of the classroom.	2.76	1.28
13. Community college instructors with real-world experience were more knowledgeable than those without it.	4.82	1.05
14. I was encouraged to apply past learning in the classroom.	4.53	1.05
15. I think that academic knowledge is valuable only if it reflects my own personal perspectives on life.	2.86	1.34
16. I just wanted to memorize facts.	4.33	1.37
17. I liked studying alone while attending community college.	2.48	1.16
18. I wanted faculty to tell me what I needed to know and then I would learn that.	3.29	1.21

APPENDIX V

SUMMARY AND DESCRIPTIVE STATISTICS FOR EACH ITEM OF THE ENVIRONMENTAL VARIABLE SCALE (N = 376)

Item	M	SD
1. I was financially responsible for myself.	5.08	1.28
2. I was financially responsible for others.	3.13	1.92
3. My family responsibilities limited my social activities.	3.64	1.77
4. My family responsibilities limited my ability to meet with an advisor.	2.49	1.41
5. My family responsibilities limited my ability to meet with my instructors.	2.47	1.39
6. My family responsibilities limited my ability to study.	2.81	1.50
7. My work responsibilities limited my social activities.	4.17	1.74
8. My work responsibilities limited my ability to meet with an advisor.	3.11	1.69
9. My work responsibilities limited my ability to meet with my instructors.	3.08	1.66
10. My work responsibilities limited my ability to study.	3.44	1.68

APPENDIX W

SUMMARY AND DESCRIPTIVE STATISTICS FOR EACH ITEM OF THE SE-BROAD SCALE (N = 375)

Item	M	SD
1. Complete the written communication general education requirements (e.g., courses in writing skills) with grades of at least a 3.0.	5.20	.92
2. Complete the arts and humanities general education requirements (e.g., courses in literature, history) with grades of at least a 3.0.	5.21	.89
3. Complete the social and behavioral sciences general education requirements (e.g., courses in political science, sociology) with grades of at least 3.0.	5.18	.94
4. Complete the physical sciences general education requirements (e.g., courses in political science, sociology) with grades of at least 3.0.	5.24	.73
5. Earn a cumulative GPA of at least a 2.0 after two years of study.	5.61	.75
6. Earn a cumulative GPA of at least 2.0 after three years of study.	5.45	1.20
7. Gain admission to your first choice college major.	5.21	1.02
8. Complete the requirements for your academic major with a GPA of at least 3.0.	5.01	1.10
9. Excel at this university over the next semester.	4.98	1.06
10. Excel at this university over the next two semesters.	4.99	1.07
11. Excel at this university over the next three semesters.	5.03	1.03
12. Graduate from this university.	5.47	.87

APPENDIX X

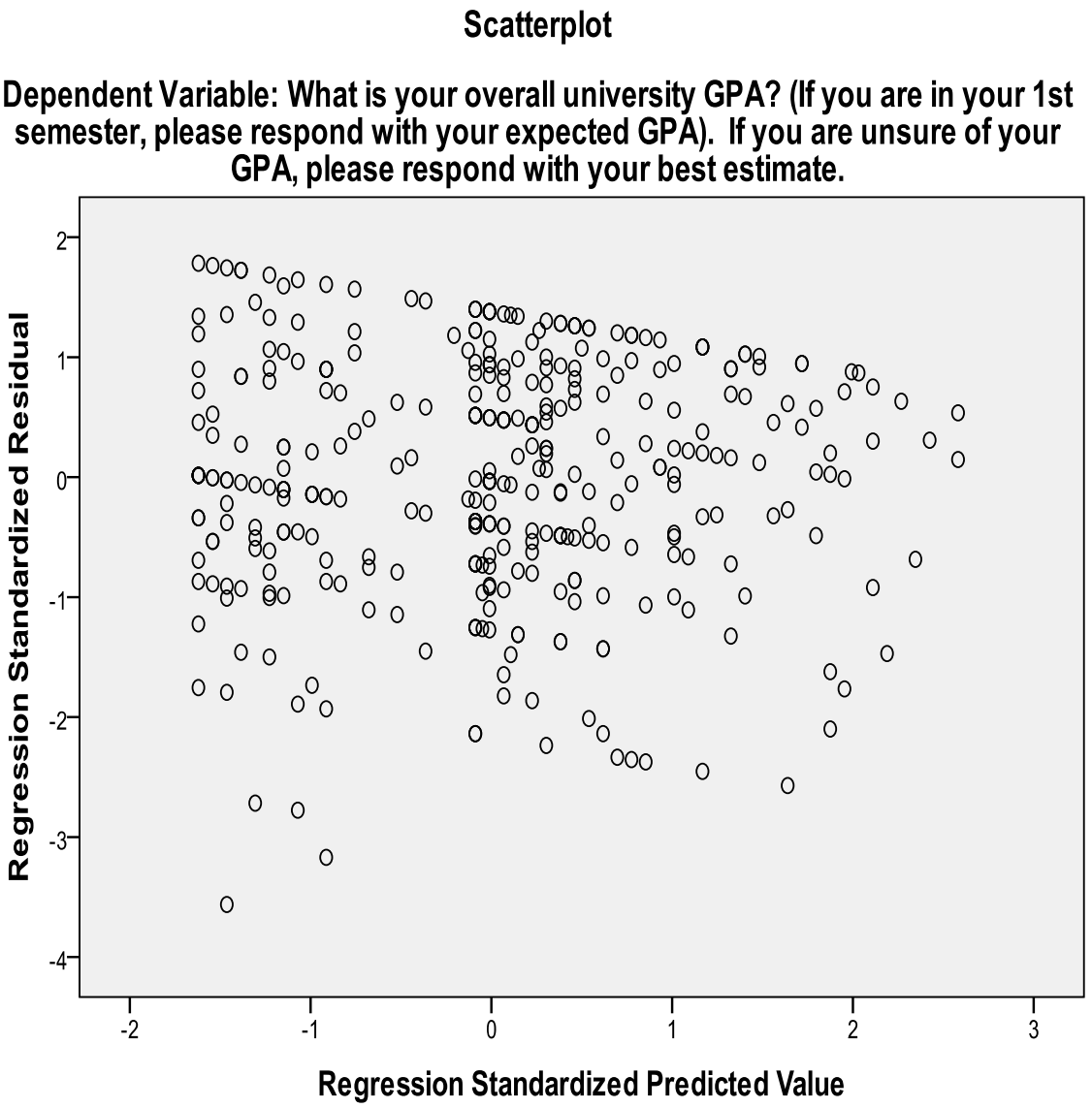
SUMMARY AND DESCRIPTIVE STATISTICS FOR EACH ITEM OF THE PERCEIVED COHESION SCALE (N = 375)

Item	M	SD
1. I feel a sense of belonging to this university.	4.14	1.26
2. I feel that I am a member of this university community.	3.99	1.32
3. I see myself as part of the university community.	3.95	1.35
4. I am enthusiastic about this university.	4.44	1.25
5. I am happy to be at this university.	4.74	1.20
6. This university is one of the best schools in the state.	4.37	1.25

APPENDIX Y

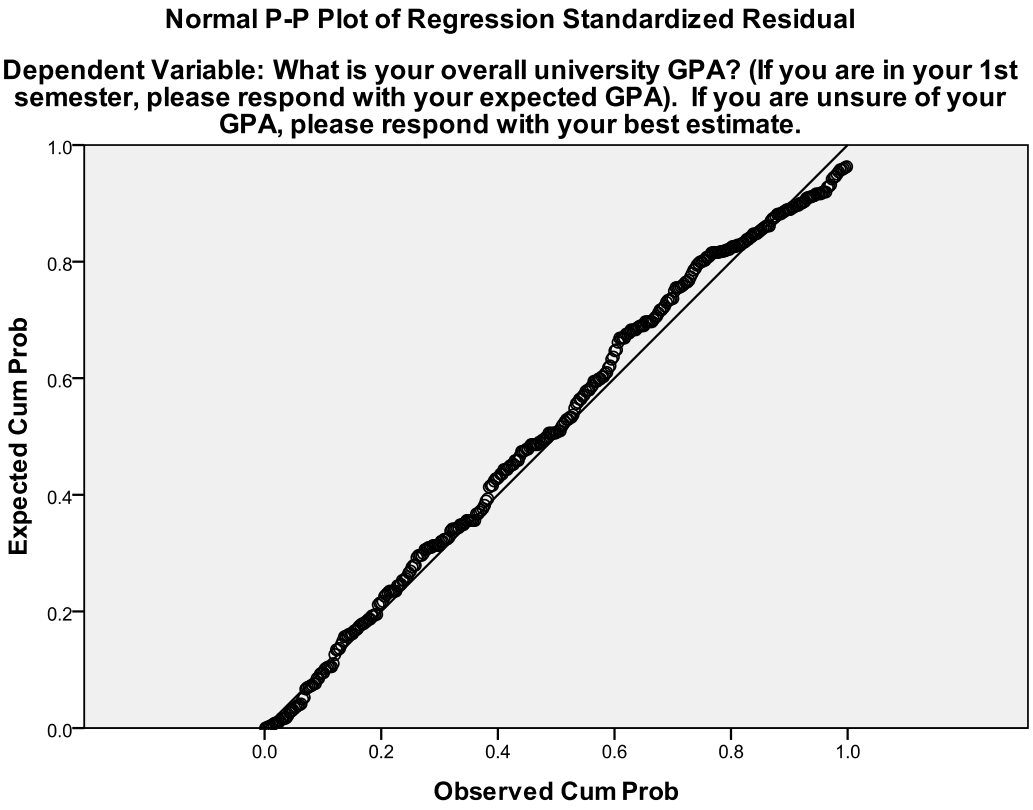
SCATTERPLOT OF STANDARDIZED RESIDUALS BY PREDICTED VALUE

FOR PRECOLLEGE CHARACTERISTICS ON UNIVERSITY GPA



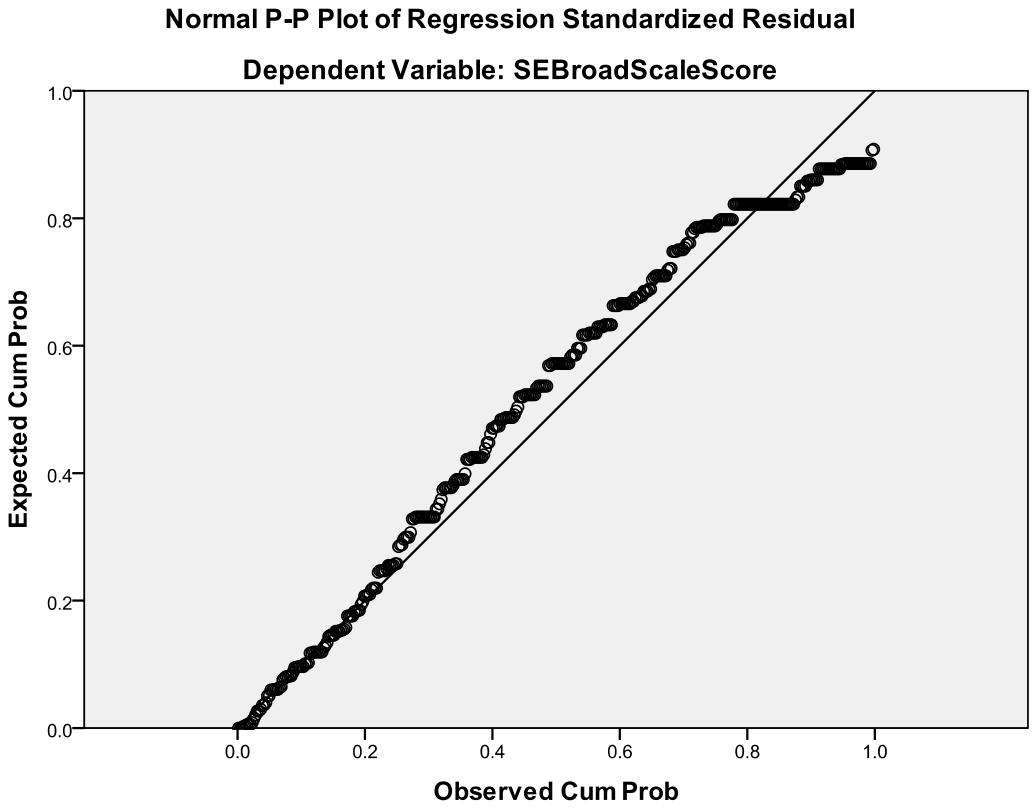
APPENDIX Z

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR PRECOLLEGE CHARACTERISTICS AND UNIVERSITY GPA



APPENDIX AA

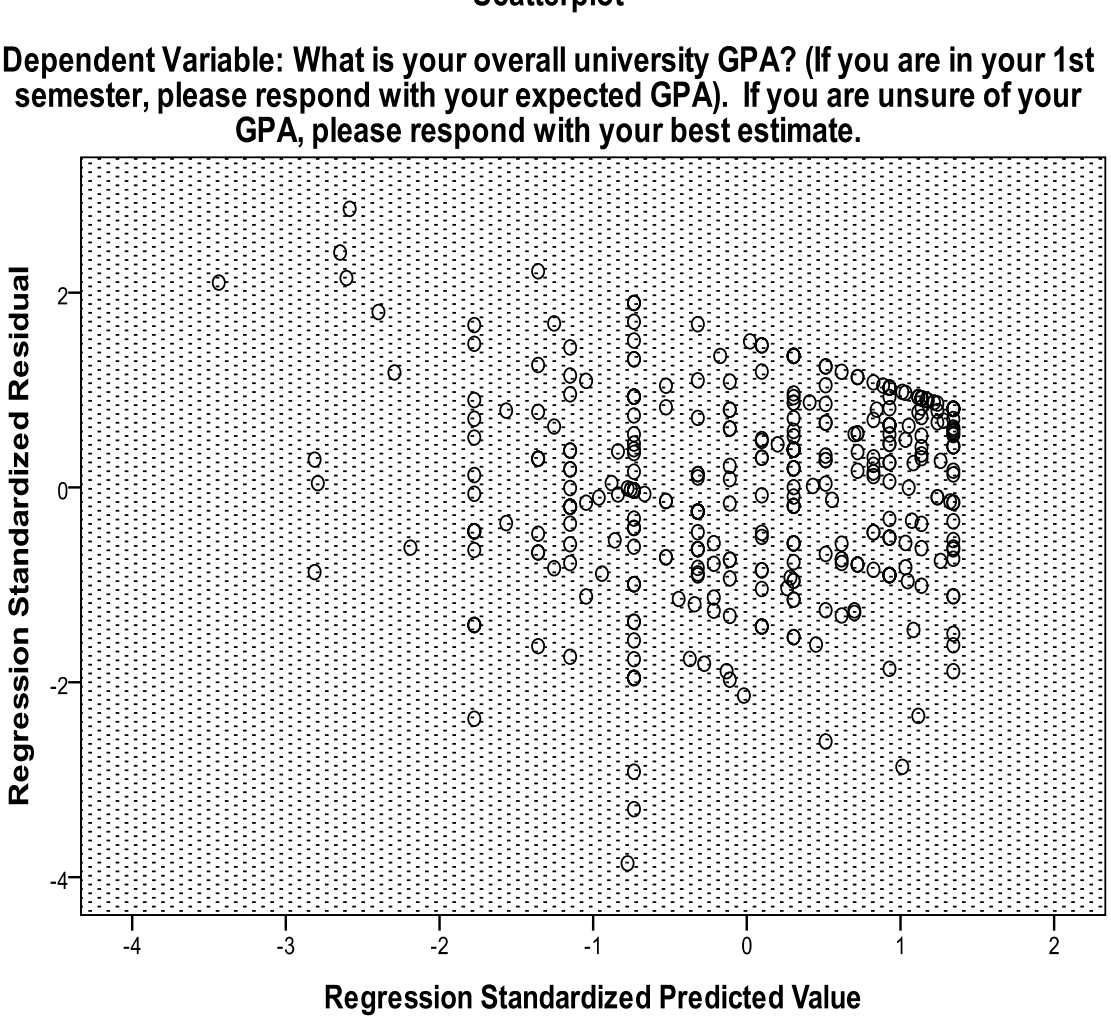
NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR PRECOLLEGE CHARACTERISTICS AND SE-BROAD SCORES



APPENDIX AB

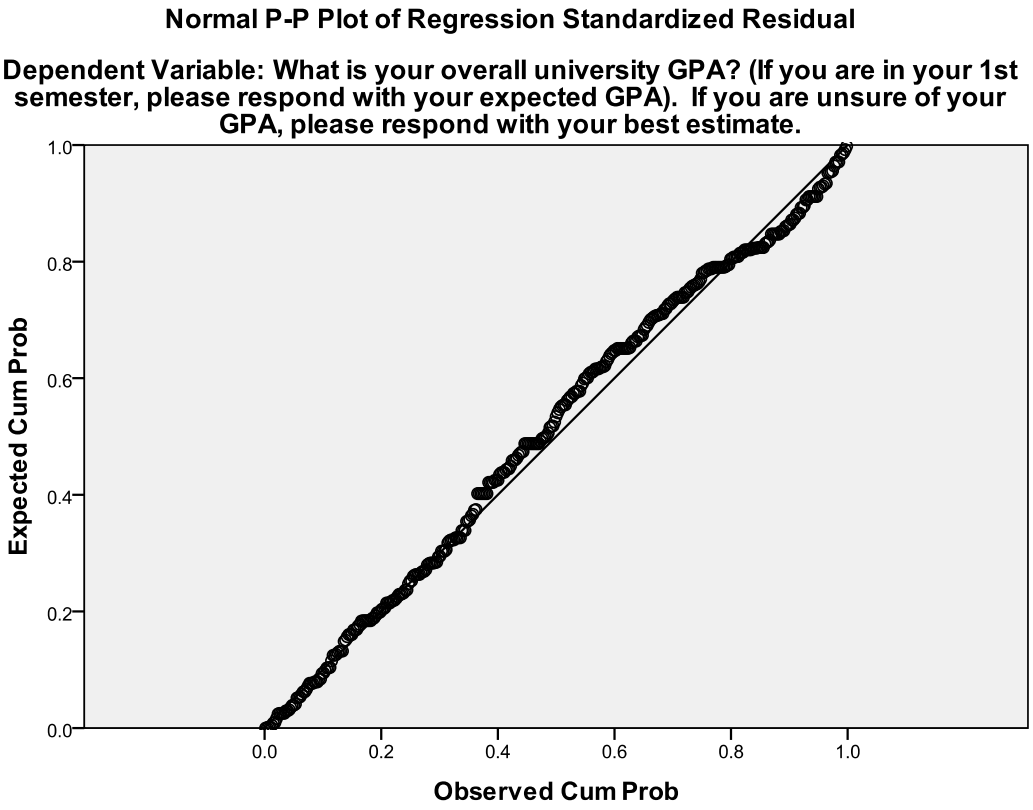
SCATTERPLOT OF STANDARDIZED RESIDUALS BY PREDICTED VALUE

FOR COMMUNITY COLLEGE EXPERIENCES ON UNIVERSITY GPA



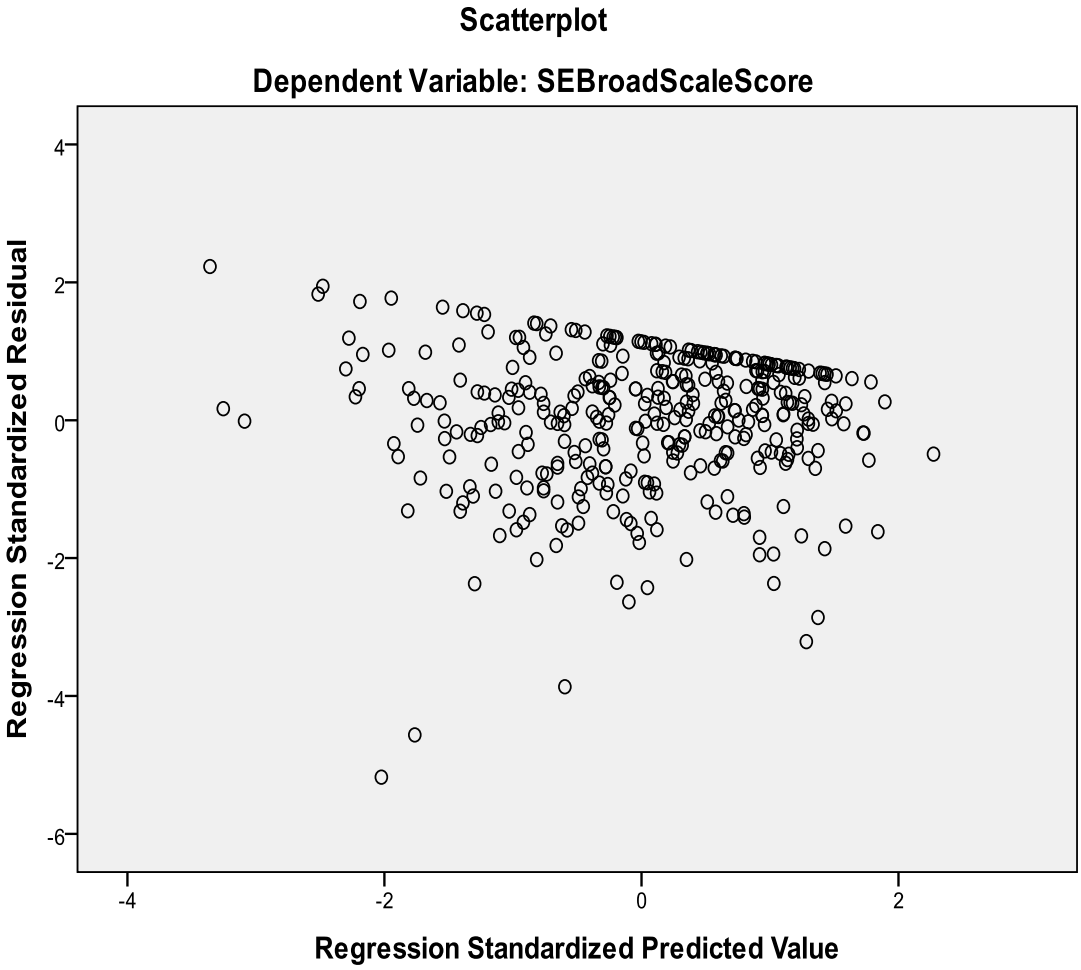
APPENDIX AC

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR COMMUNITY COLLEGE EXPERIENCES AND UNIVERSITY GPA



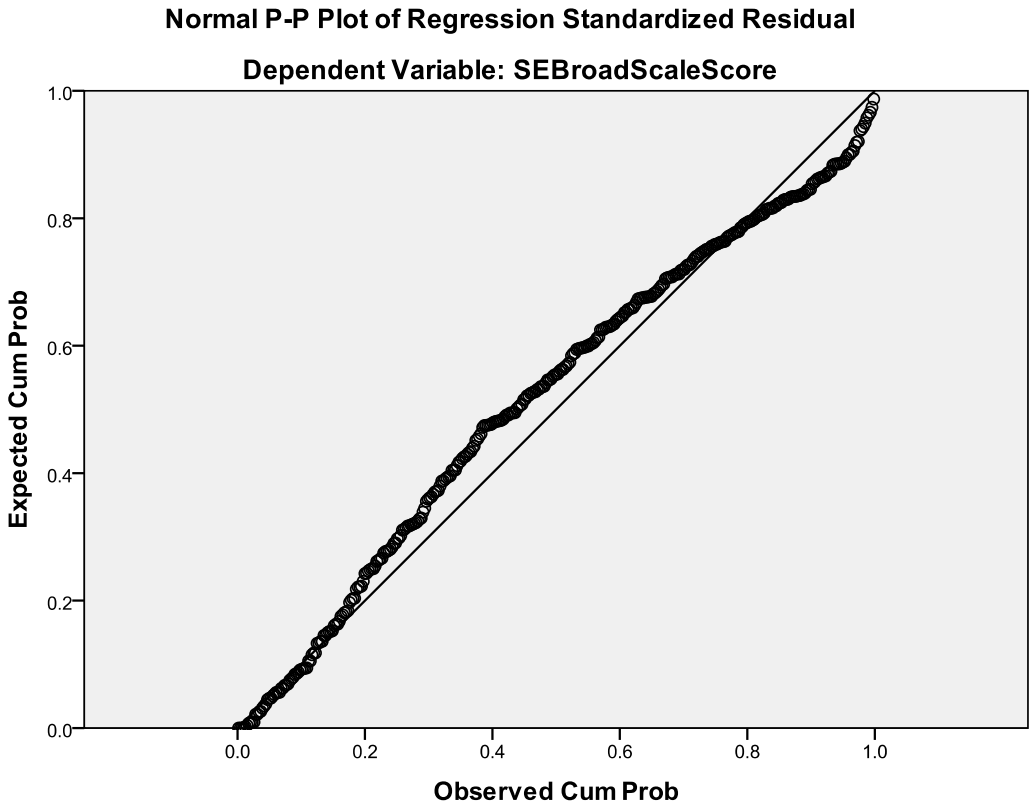
APPENDIX AD

SCATTERPLOT OF STANDARDIZED RESIDUAL BY PREDICTED VALUE FOR COMMUNITY COLLEGE EXPERIENCES ON SE-BROAD SCORES



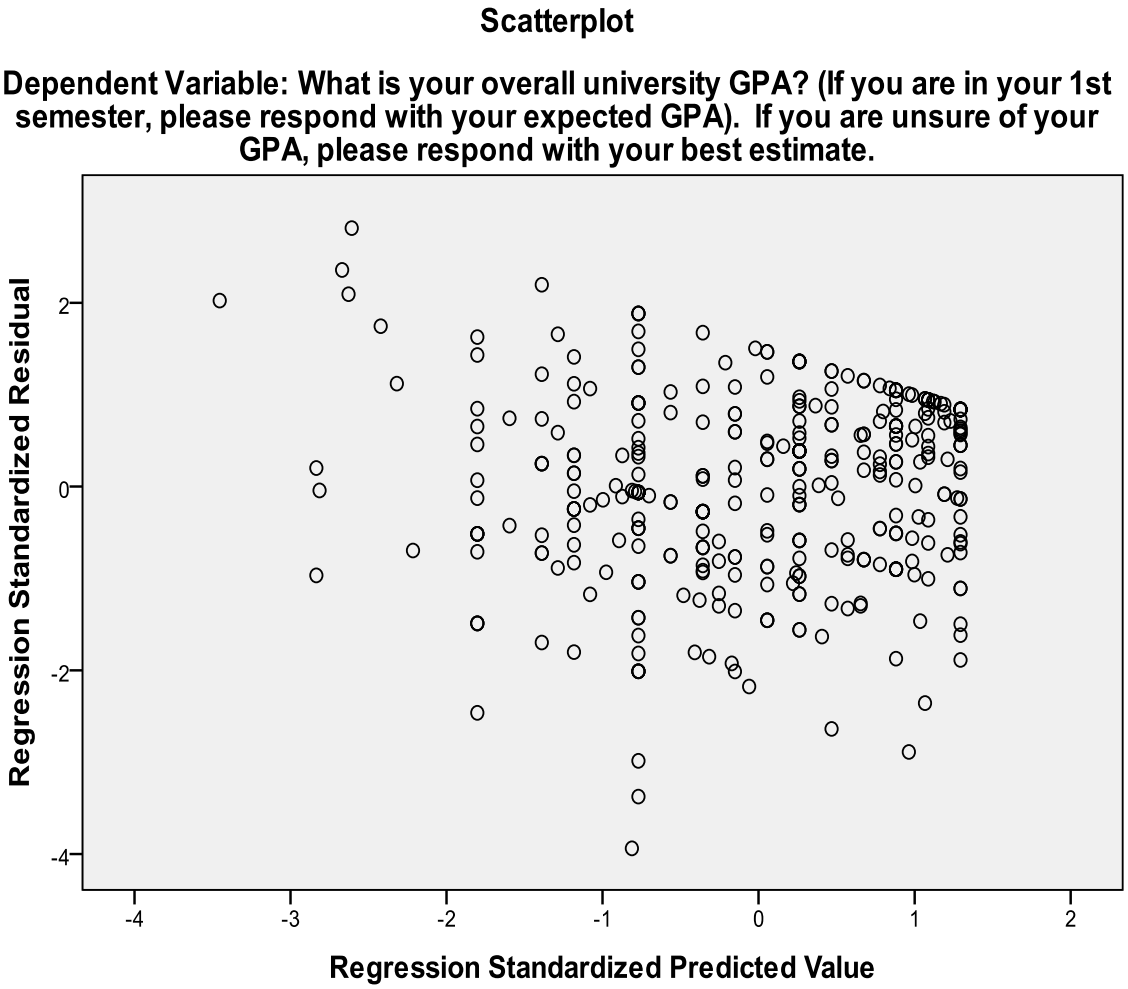
APPENDIX AE

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR COMMUNITY COLLEGE EXPERIENCES AND SE-BROAD SCORE



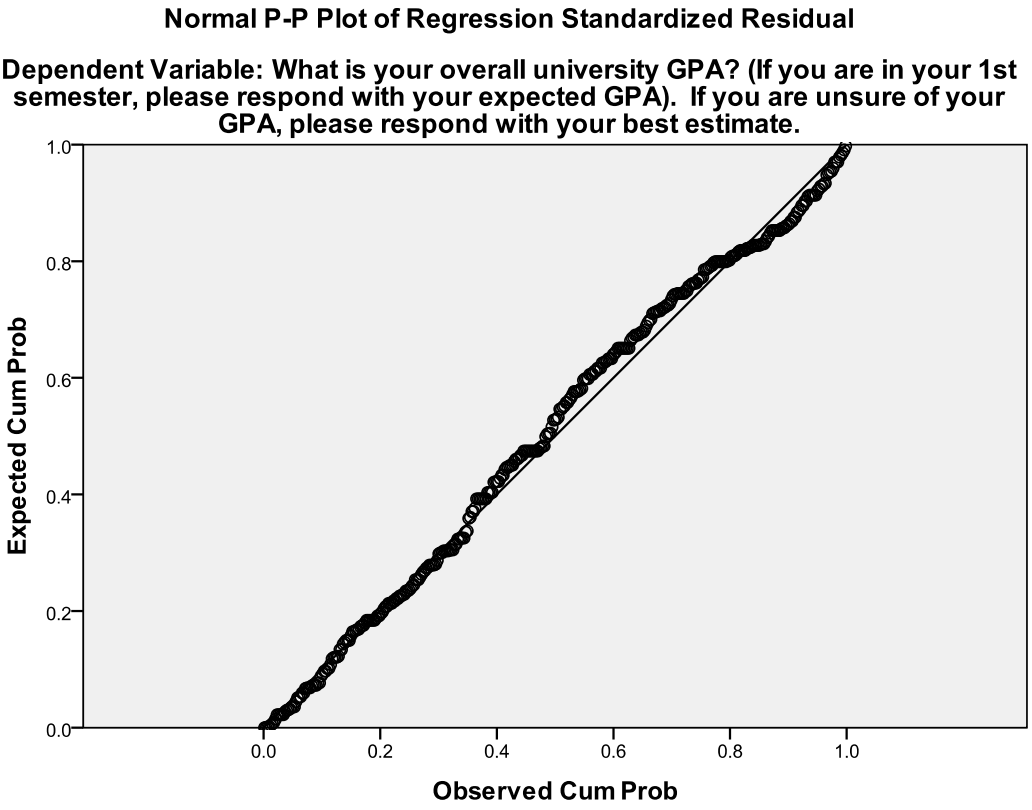
APPENDIX AF

SCATTERPLOT OF STANDARDIZED RESIDUAL BY PREDICTED VALUE FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON UNIVERSITY GPA



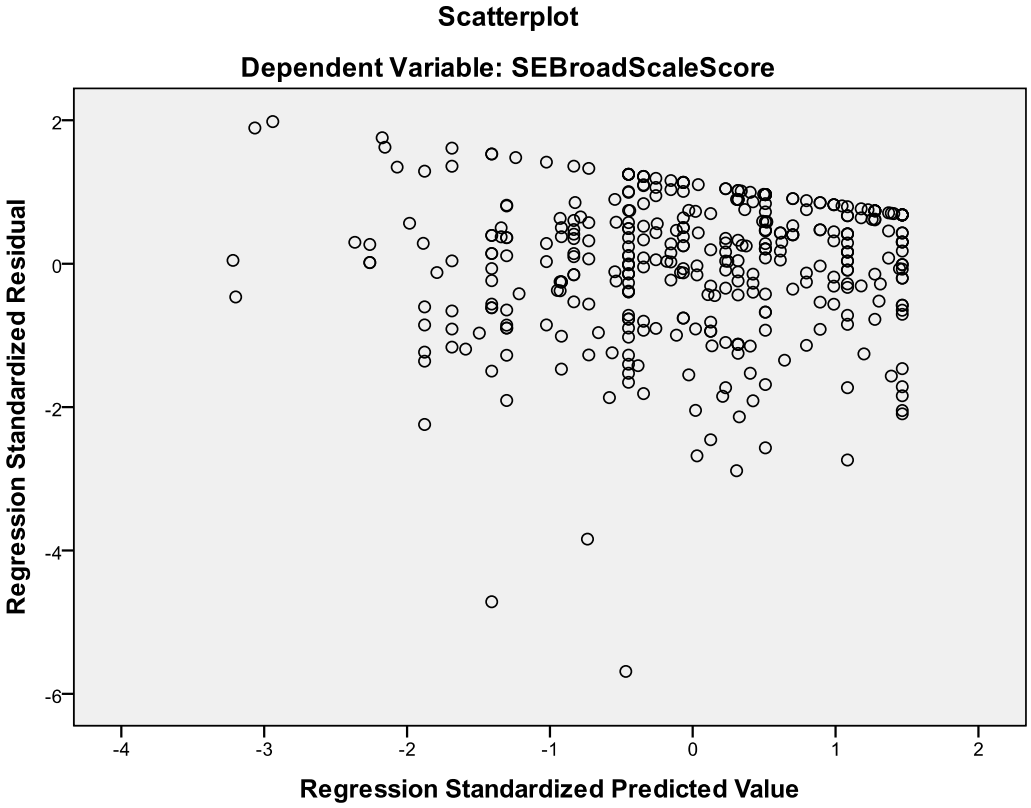
APPENDIX AG

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON UNIVERSITY GPA



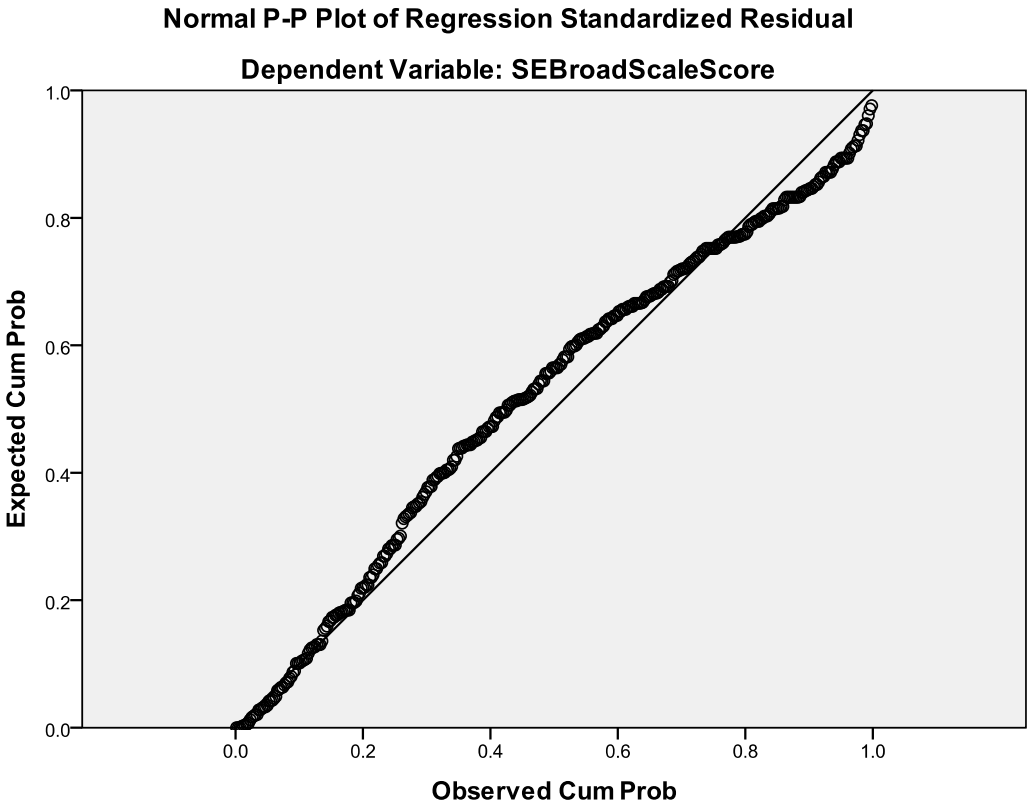
APPENDIX AH

SCATTERPLOT OF STANDARDIZED RESIDUAL BY PREDICTED VALUE FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON SE-BROAD SCORE



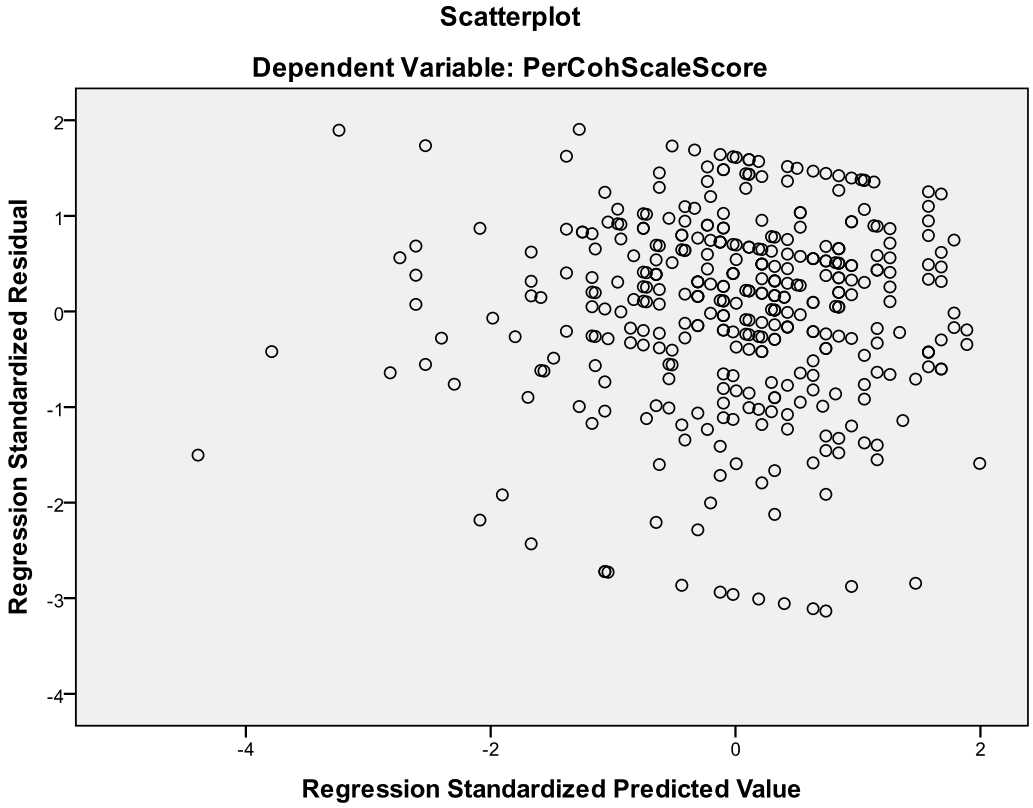
APPENDIX AI

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON SE-BROAD SCORE



APPENDIX AJ

SCATTERPLOT OF STANDARDIZED RESIDUAL BY PREDICTED VALUE FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON PERCEIVED COHESION SCORE



APPENDIX AK

NORMAL P-P PLOT OF REGRESSION STANDARDIZED RESIDUAL FOR PRECOLLEGE CHARACTERISTICS AND COMMUNITY COLLEGE EXPERIENCES ON PERCEIVED COHESION SCORE