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ACADEMIC TRANSFER SHOCK AND SOCIAL INTEGRATION: A COMPARISON
OF OUTCOMES FOR TRADITIONAL AND NONTRADITIONAL STUDENTS
TRANSFERRING FROM 2-YEAR TO 4-YEAR INSTITUTIONS

by

Brooke Lindsey Strahn-Koller

An Abstract

Of a thesis submitted in partial fulfillment of the
requirements for the Doctor of Philosophy degree
in Educational Policy and Leadership Studies in
the Graduate College of
The University of Iowa

May 2012

Thesis Supervisor: Professor David Bills

ABSTRACT

This study explored whether traditional and nontraditional students who transferred from 2-year to 4-year institutions experienced differences in transfer shock, academic integration, and social integration. A substantial body of research comparing transfer students to native students on transfer shock exists, while only a few qualitative studies have focused on how transfer students experience academic and social integration at the transfer institution. Further, the major studies examining transfer student behavior place all transfer students into a single category by the one thing they share in common- a transition experience. Due to the increasing numbers and diversity of transfer students it is important to examine how their unique characteristics influence transfer and subsequent integration into their new environment.

The sample for this study was taken from the Beginning Postsecondary Students Longitudinal Study (BPS: 04/09). The large, nationally representative dataset was filtered to include only students who transferred from 2-year institutions to 4-year institutions, creating a much smaller sample of students. The main independent variable in the analyses was age. For this study traditional students were defined as those less than 24 years of age, while nontraditional students were those 24 years or older. Linear regression was used to examine whether traditional and nontraditional students experienced differences in transfer shock, level of academic integration, and level of social integration following transfer.

The findings from this study suggest that there is no relationship between age and transfer experiences. Further research is necessary to determine whether the absence of a relationship truly exists or whether the small sample size in this analysis influenced the outcome.

Abstract Approved:

Thesis Supervisor

Title and Department

Date

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May 2012

Thesis Supervisor: Professor David Bills

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CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph. D. thesis of

Brooke Lindsey Strahn-Koller

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Educational Policy and Leadership Studies at the May 2012 graduation.

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Michael Lovaglia

Scott McNabb

Ernest Pascarella

To all my boys

It always seems impossible until it's done.

Nelson Mandela

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CHAPTER 1

INTRODUCTION

Introduction

The importance of higher education for social mobility has increased dramatically over time, particularly the attainment of the baccalaureate degree. While many students begin their academic careers in 4-year institutions, today nearly half of all beginning college students choose to begin their journey to the baccalaureate at a community college and many subsequently transfer. A common perception of the community college environment is that it is more nurturing than are 4-year institutions and that community college faculty are more student-centered. While not all colleges and universities are large with high course enrollments, 4-year institutions tend to be larger on average than community colleges where student enrollment and class sizes are comparatively smaller particularly for freshman and sophomore level courses. Supposedly, this creates a high level of academic support and integration for community college students (Towsend & Wilson, 2006). Adult learners returning to school after a long absence and students requiring higher levels of support often find this nurturing environment attractive when starting their postsecondary education.

Comparing native and transfer students has been a popular research agenda within the higher education literature. Studies find that initially community college transfer students face some difficulties at the new institution but seem to recover fairly quickly, persisting to graduation alongside their native peers in high numbers. Persistence is another area of educational research that continues to grow. Persistence studies are largely grounded in the work of Vincent Tinto (1975) and focus on how academic integration and social integration influence student attrition. These bodies of literature continue to grow parallel to each other, influencing policy and practice at 4-year institutions. To date, however, there is very little research which examines how transfer affects integration, particularly for nontraditional aged students. The current study

explores the nature of how being a nontraditional and a transfer student affects academic success and integration both academically and socially at the new institution.

Background of the Study

Each year millions of students enroll in colleges and universities in an effort to earn degrees needed for successful transition into the labor force. According to Carnevale and Desrochers (2004), in 1959 only 2 out of every 10 jobs required some postsecondary education or training and by the year 2000 that number had jumped to 6 out of 10. As the American economy shifts from industrial to information based, the need for a more educated labor force arises. Although some students enroll directly in 4-year institutions, recent enrollment patterns indicate that nearly half of all students begin their academic careers in community colleges. Many of them subsequently transfer to 4-year institutions to earn Bachelor's degrees (Adelman, 2005). As of Fall 2009, 43% of all college undergraduates were enrolled in community colleges (Aud, Hussar, Kena, Bianco, Frohlich, Kemp, & Tahan, 2011). Understanding the role of the American community college in today's postsecondary academic environment is imperative. Community colleges have a tendency to serve diverse populations of students who have historically had limited access to higher education, and today many students begin their postsecondary enrollment in community colleges and then subsequently transfer.

Since its inception the community college has faced a myriad of struggles in finding a true fit within higher education in society. Over time, the purpose of the community college has varied from being an extension of high school, to a transfer institution, to a vocational institute, and today encompasses all of these things. In 1892, William Rainey Harper divided The University of Chicago into two divisions, which by 1896 would become known as the Junior College and Senior College (Brint & Karabel, 1989). Following the completion of the Junior College a student was awarded an associate's degree which was intended to encourage some students to leave the university without moving ahead to the Senior College. He believed this system would allow

universities to only offer classes at the Senior College level and that extended high schools or specific colleges would teach the Junior College class work. The first independent junior college, Joliet Junior college was established in 1901.

The groundwork had been laid, but this new phenomenon didn't catch on very quickly. By 1910, there were only three public two-year colleges in the United States. The popularity of junior colleges continued to grow slowly, and by 1928 there were 248 existing junior colleges in the U.S., 114 of which were public and 134 which were private. Combined they served nearly 45,000 students (Brint & Karabel, 1989). Following its founding, the junior college focused primarily on being a transfer institution. They set out to serve as preparatory institutions for students transferring to four-year schools. Although the stated purpose of the junior college was to serve as a transfer institution, it was clear to the public that the junior college was merely a mechanism for weeding out students who transferred to the universities. Serving as a screener for the university, the junior college was hardly serving its stated purpose of being a transfer institution.

As a result a new public function of vocational training arose. During this phase the junior college served the democratic function of training individuals to situate them in the appropriate place within the societal division of labor. Brint and Karabel (1989) report that in 1947 the Truman commission was passed calling for: "full equality of educational opportunity," through the expansion of the junior college. One of the biggest changes that the Truman Commission made was changing the name of the two-year institution from junior college to community college.

During the 1960's the community college population boomed due to the enrollment of the postwar baby boom generation. Between 1965 and 1969 a new community college opened each week (Brint & Karabel, 1989). Enrollments in higher education in general grew between 1960 and 1970; however community colleges saw a 361% increase in enrollment compared to an increase of 210% for 4-year institutions

(Brint & Karabel, 1989). This growth for community colleges continued on throughout the 1970's. The number of students served by community colleges went from 1.6 million in 1970 to 4.5 million in 1980. The previous transfer preparation colleges added a new dimension to their offering; they had become equally a vocational institution as a transfer institution. Since this change in the 1970's it has been said that the "comprehensive community college" has existed in our society. Today's community colleges serve just over 8 million students and the enrollment at community colleges has continued to grow, increasing 21.8% from Fall 2007 to Fall 2011 (Mullin & Phillipe, 2011).

Today's comprehensive community college is very diverse in its offering of programs and classes, serving a variety of students: minorities, women, non-traditional students, students with no high school diploma, transfer students, terminal students, as well as credit earning and noncredit earning students. Today's comprehensive community college accepts all students and caters to the lifelong learner, fulfilling its most diverse function to date.

Community college students are as diverse as the institutions they are enrolled in. Compared to 4-year institutions, community colleges tend to enroll students with more racial and ethnic diversity, lower socioeconomic statuses, and a greater variation in age, academic ability, familial and occupational responsibilities, as well as educational goals. Provasnik and Planty (2008) reported that racial and ethnic minorities make up approximately 40% of all community college students, many of these from low income backgrounds. During the 2007-2008 academic year, 1 out of every 5 community college students fell below the poverty line, and a majority of those were minorities (NCES, 2011). Another major difference between students at community colleges and 4-year institutions is their higher average age. Community college students tend to have average ages more than five years greater than those in 4-year schools (Provasnik & Planty, 2008). Older students are also more likely to be married, have dependents, and work while attending classes. Provasnik and Planty (2008) report that compared with their 4-

year counterparts, community college students are twice as likely to be married and three times more likely to be a single parent. Due to the increased familial obligations it's no surprise that students attending 2-year institutions are regularly juggling work and school, approximately 80% of community college students report that they work while taking classes (NCES, 2011). Even though they vary in characteristics and where they begin their academic careers, many of these diverse students end up in 4-year institutions alongside their native peers.

A large and well established area of higher education research has made comparisons between transfer students and their native counterparts. Several studies find that they fare nearly as well as native students (Pascarella, 1999; Melguizo & Dowd, 2009) while considerably more studies note the additional difficulties they face (Keeley and House, 1993; Townsend, 1993, 1995; Holahan, Green, & Kelley, 1983, Laanan, 1996, Hills, 1965; Diaz, 1992, Cejda, Kaylor, & Rewey, 1998 Townsend & Wilson, 2006).

Students who transfer from community colleges to 4-year institutions face many challenges in their new environment. There is a considerable body of literature focusing on the transfer shock these students face. Initially identified by Hills (1965), transfer shock refers to the dip in grade point average that is experienced by most students following transfer. Over the past four decades Hills initial findings have been replicated in numerous studies (Cejada, Kaylor, & Rewey, 1998; Diaz, 1992; Keeley & House, 1993; Laanan, 1996, 2001; Townsend, 1993, 1995). Most studies find that while students initially struggle academically they tend to recover from the initial transfer shock within a few semesters. Recently researchers have expanded the literature on the academic difficulties transfer students face by adding a social dimension to their inquiry. Studies find that transfer students not only experience transfer shock related to their grade point average but also face difficulty with academic and social integration at the new institution (Bauer & Bauer, 1994; Davies & Kratky, 2000; Laanan, 1996, 2007; Townsend, 2008;

Townsend & Wilson, 2006). Academic integration refers to the interaction that students have with faculty both inside and outside of the classroom, as well as meaningful learning experiences within the classroom. Social integration refers to social interactions the student experiences either formally through institutionally provided activities or informally through interaction with fellow students in residential areas or various other places of study.

While research studying the academic and social integration experiences of transfer students is in its infancy, a large body of information on academic and social integration and its relationship to persistence has been accumulating since the 1970's. For more than 30 years, Tinto's (1975) model of academic and social integration has been used as the conceptual framework for a multitude of studies on attrition in higher education. Tinto's model has undergone several revisions since its inception (1975, and 1993). Although parts of Tinto's original model have been updated, what remains consistent is the basic assumption that colleges and universities are unique communities within the larger society and that even smaller communities which perform specific functions exist within the larger environment. Tinto (1975) asserts that within these smaller communities, students engage in interactions with faculty, staff, and fellow students that either strengthen or weaken their integration and commitment to the institution which in turn influences their likelihood of departure.

Tinto (1975) also included many background factors in his model which he stated have an influence on a student's own goals as well as their commitment to the institution. Tinto (1975) concluded that academic and social integration are vital for student persistence. Researchers have used Tinto's model to explain persistence for the past three decades and it remains the primary framework for studies which focus on academic and social integration and their relationship to persistence and student success.

While Tinto's model remains the most widely used for integration studies, most of the research using his model has been conducted solely on traditional aged students in

4-year institutions. Bean and Metzner (1985) criticized Tinto for the shortcomings of his model, citing its lack of applicability to nontraditional students who have many external commitments. Subsequently Bean and Metzner (1985) developed a model of nontraditional student attrition using many of the same constructs of Tinto's original model but added in more environmental factors as well as a psychological dimension. Tinto later updated his model to include external commitments in response to the criticism (Tinto, 1993). Tinto's (1975, 1993) model continues to influence large numbers of studies on the effects of integration on persistence, but mainly for studies on traditional aged, native students in 4-year institutions. Minimal research on Tinto's model has been conducted at the 2-year level where nontraditional students are abundant, and many students begin their careers with the intention to transfer.

Problem Statement

Literature examining the transfer shock and academic difficulty that students experience following transfer has been ongoing for several decades. Studies comparing transfer and native students academically as well as on outcomes of success are abundant; however few studies exist that focus on other aspects of the transfer process, particularly integration. Social and academic integration continue to be significant issues relating to persistence in higher education and researchers have spent considerable effort explaining their influence at the 4-year level. While some studies of social and academic integration at the 2-year level exist they are much fewer in number. What is particularly troubling is the negligible amount of information on academic and social integration for students who transfer from 2-year to 4-year institutions; those which do exist are primarily qualitative in nature focusing on a single set of students at specific institutions. A further omission in the integration literature is that few if any studies have identified what characteristics directly influence integration. Work in this area focuses on how students' experiences encourage or discourage integration. These studies often suggest ways to more fully

integrate students within their academic environment, but they don't detail what influence certain student characteristics have on integration.

To further complicate this issue, previous work lumps all transfer students together by the one thing they have in common, the fact they have transferred. Most of the information comparing community college students to 4-year students notes major differences in the characteristics they possess, particularly age. While the literature comparing nontraditional to traditional students is limited, this has become an emerging area of research in higher education. Researchers have noted the importance in understanding the differences between traditional and nontraditional students, particularly in the 2-year college. While it is important to understand the difference between these diverse groups of students within a particular institution, due to the increasing numbers of transfer students, we also must examine how their unique characteristics may influence their transfer experience and subsequent integration into their new environment

Research Questions

The purpose of this study is to examine whether differences exist for traditional and nontraditional 2-year to 4-year transfer students on transfer shock, academic integration and social integration. In addition this study will explore whether background characteristics such as race, sex, socioeconomic status, and various personal characteristics including residential location, family as well as work obligations, directly influence levels of academic and social integration. The following research questions will be analyzed:

1. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic transfer shock?
2. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic integration at the 4-year institution?

3. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of social integration at the 4-year institution?

Rationale

A great deal of literature has focused on the process, experience, and outcomes for students who transfer from community colleges to 4-year institutions. There have been a multitude of studies that have compared native students to transfers on many different factors such as GPA, retention, time to graduation, and graduation rates. What scholars have failed to do however is further analyze who these transfer students are. All major studies have treated transfer students as one group failing to recognize the differences between them. Wawrzynski and Sedlacek (2003) stated, “transfer students are often defined as a group by the one thing they share- a transition experience from one school to another- even if they have little else in common with their transfer peers” (p. 489). One major characteristic that may potentially influence the aforementioned outcomes is age. Previous research indicates that nontraditional aged students are very different from traditional aged college students; they are much more likely to have families, jobs, and established social networks outside of their academic careers. Much of the current research assumes that transfer students are the same characteristically as the native students to which they are compared.

It is noted in the literature that we need to separate nontraditional students from traditional students to get a better idea of the uniqueness of each group. From Adelman (2005, p. xiv) in his report on community college students (and specifically traditional aged students) he states:

“First, and most important to understanding what community colleges do and how to judge what they do, is to divide their student population by age. The differences between backgrounds, family and job commitments, and consequent academic behavior and progress of traditional-age (18-24) students- particularly those who enter before age

21, as most of them do- and those who start out at later points in life are so different that mixing the age populations does considerable disservice to understanding.

Representatives of community colleges, for example, cannot answer typical inquiries from feeder high school sophomores and juniors (such as questions about recommended credit loads) on the basis of institutional data that include those of their parents who are community college students.”

Although Adelman speaks specifically of the importance for researchers studying students within the community college to account for age, this can be extended to those students who start in community colleges and subsequently end up in 4-year institutions also. For the same issues we see in combining these students within community college data are likely to emerge in the transfer student population as well.

This study adds to the literature on transfer students from two year to four year institutions by exploring whether traditional and nontraditional students experience transfer shock, academic integration, and social integration in similar or diverse ways.

The effects of academic and social integration on persistence continue dominate the integration literature, and “most studies have examined how to socially and academically integrate students into the institution” (Borglum & Kubala, 2000, p.259), but much less research has focused on the relationship between student characteristics and institutional integration. No studies have been located which evaluate a potential direct relationship of certain characteristics (such as age) on transfer student’s integration. A few qualitative studies have examined this issue, but only on a limited sample of respondents. This study adds to the literature by exploring whether age influences academic and social integration for transfer students using a national sample.

Overview of Methodology

This study used data from the 2004-2009 Beginning Postsecondary Students Longitudinal Study (BPS: 04/09). The BPS is “a longitudinal study which follows a cohort of students who are enrolling in postsecondary education for the first time”

(NCES, 2011b). The BPS focuses on first time beginner students regardless of when they completed high school, making it ideal for studying nontraditional students who may have taken time off following high school before pursuing a degree in higher education. For this study only data from the initial survey (2004) and first follow up (2006) were used. The BPS contains data on grade point average in both in 2004 and 2006. Changes in mean grade point averages were compared to determine whether transfer shock had occurred for traditional and nontraditional students. The BPS also contains both an academic integration index as well as a social integration index for both waves of the data, each serving as separate dependent variables in the analysis. The academic integration index is a composite of the average of the responses indicating how often a student: 1) had social contact with faculty, 2) talked with faculty about academic matters outside of class, 3) met with an academic advisor, and/or 4) participated in study groups. Similarly, the social integration index is also a composite of the average of the responses indicating how often a student: 1) attended fine arts activities, 2) participated in school clubs, 3) and/or participated in intramural or varsity sports. Linear regression was used to test the relationship between age and level of academic integration as well as age and level of social integration.

Limitations

I obtained data for this study from a national survey conducted by the U.S. Department of Education. The main limitation of the study was that the dataset was not specifically targeted toward transfer students and therefore the sample size of the transfer population was somewhat limited. Related to this, once the sample was further reduced to look for effects for nontraditional students the sample became considerably smaller yet. Due to the small sample size one should be cautious in interpreting the results as anything but exploratory particularly for nontraditional students.

The secondary nature of the data presented several other limitations. In the initial 03/04 sample, grade point average was taken from institutional level data and obtained

through official records, while the grade point average collected in 2006 was self-report data directly from the student. This presents a problem with validity as previous studies indicate that self-report GPA is often inflated (Bahrlick, Hall, & Berger, 1996, Kuncel, Crede, & Thomas, 2005). A second limitation of using secondary data for this study is that I had no control over the questions asked that measure academic and social integration. These questions appear to be very limited in nature with only 4 questions used to comprise the academic integration index, and 3 questions to comprise the social integration index. In the future, research including a larger more representative sample of transfer students of all ages; consistent measurement of grade point average and additional measures of academic and social integration would remedy many of these limitations.

Delimitations

I have placed several delimitations on this study. First I limited this sample to 2 year to 4 year transfer students only. Transfer behavior is defined within the existing literature in several ways. Transfer can occur from institutions of similar levels (2 year to 2 year, or 4 year to 4 year); as well as different levels (2 year to 4 year, or 4 year to 2 year). Some students even dual enroll in institutions of different levels. By limiting the sample to solely include 2 year to 4 year transfers it limits the generalizability of the findings to all transfer students.

Second, I limited the criteria for classification of nontraditional students to age only. Previous studies have used various characteristics relating to financial independence, delayed enrollment, presence of dependents, along with others to classify students as nontraditional. But as the diversity of the student population continues to grow it seem relevant to constrict defining traditional and non-traditional students from each other by using age as the determining factor as most recent studies have done. Doing this limits the ability to make comparisons between findings on nontraditional

students from this study to only those which have classified nontraditional students in the same manner.

Summary

The number of students enrolled in higher education has grown substantially over time as education becomes increasingly necessary for financial success in the United States. Growth has occurred at all levels, community colleges have particularly seen growth recently due to the economic downturn of our society. While earning an associate's degree provides more financial return than just possessing a high school diploma, moving on and obtaining the baccalaureate degree increases that return even more. Because of this students often begin in community colleges where tuition is lower and the environment is perceived as more nurturing, subsequently transferring to 4-year institutions. Community college students often possess characteristics making them more diverse than their 4-year counter parts, perhaps influencing their academic experiences and integration following transfer.

The goal of this study is to explore the nature of how being nontraditional and a transfer student affect academic success and integration both academically and socially at the new institution. Ultimately, this study may influence policies and programs both at 2-year institutions and at transfer institutions which will aid in making the integration for transfer students easier.

In the following chapter I provide a review of the related research on transfer shock, academic integration, and social integration. First I examine Tinto's (1975) model of student integration which provides the framework for this study. Additionally I provide a history of the literature related to academic transfer shock, academic and social integration. And finally, I review characteristics of community college and 4-year students to provide relevant background information for understanding how these characteristics may influence transfer shock, academic integration, and social integration following transfer.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter presents a review of the relevant literature related to academic transfer shock, academic integration and social integration as it pertains to transfer students. Characteristics of traditional versus nontraditional community college students and their counterparts in 4-year institutions are also discussed. This chapter is organized into 3 sections. The first section review's Tinto's (1975, 1987, 1993) model of student integration which provides the conceptual framework for this study. The second section provides a history of the literature related to academic transfer shock, academic integration, and social integration, the main dependent variables in this study. The third section presents characteristics of community college and 4-year students, traditional and nontraditional students, and transfer students to provide relevant background information for understanding how these characteristics may influence transfer shock, academic integration, and social integration following transfer. The purpose of this review is to present an overview of the existing literature in this area, and provide a rationale for the predictor variables in the current study.

Tinto's Student Integration Model

For more than 30 years, Tinto's (1975, 1987, 1993) model of academic and social integration has provided a framework for researchers studying student success and persistence. A multitude of studies using Tinto's model have documented that students who are integrated into the academic and social life of an institution exhibit positive outcomes (Astin, 1984; Jalomo, 1995; Laanan, 2007; Pascarella & Terenzini, 2005; Tinto 1993, 1997). In his original model Tinto (1975) addressed the issue of both academic and social integration and their connection to persistence in higher education. This model is both interactional and longitudinal in nature as it theorizes how interactions over time within an institution can affect departure behavior. He believed that people come to

higher education with many diverse characteristics, such as family background, socioeconomic status, academic preparedness, along with their own personal abilities. He posited that these factors affect the level of commitment students have to their educational goals as well as their commitment to the institution. Tinto stated that increased integration both academically and socially would serve the purpose of increasing that commitment and thereby reduce dropout decisions of the student.

Tinto's original model has undergone several revisions. In 1987 Tinto updated his model by adding student intentions, such as transfer or degree attainment, which he stated have a strong influence on persistence. This update was done in response to work by Bean and Metzner (1985). Bean and Metzner (1985) developed a model of nontraditional student attrition using many of the same constructs Tinto used. They criticized Tinto (1975) for placing so much emphasis on institutional commitment, which he described as the importance of attending one particular institution, measured by the importance of graduating from the current institution. Bean and Metzner (1985) pointed out that students who intend to transfer have intent to leave; this may lower their institutional commitment. Bean and Metzner (1985) use intent to leave in their model of attrition because they state it is a strong predictor of drop out behavior and warn that using both within the model (as Tinto does in his 1993 revision) poses multicollinearity problems.

Tinto made an additional revision this same year in response to Pascarella's (1980) finding that students who had contact with faculty both inside and outside of the classroom had higher rates of persistence. In response to this Tinto (1987) added a distinction between formal and informal communication with faculty into the model. Then in 1993, Tinto once again updated his model in response to several studies that focused on external commitments (see Figure 1). Bean and Metzner (1985) pointed out that not all students in higher education are found in 4-year institutions; while Cabrera, Castaneda, Nora, and Hengstler (1992) indicated that external events such as family

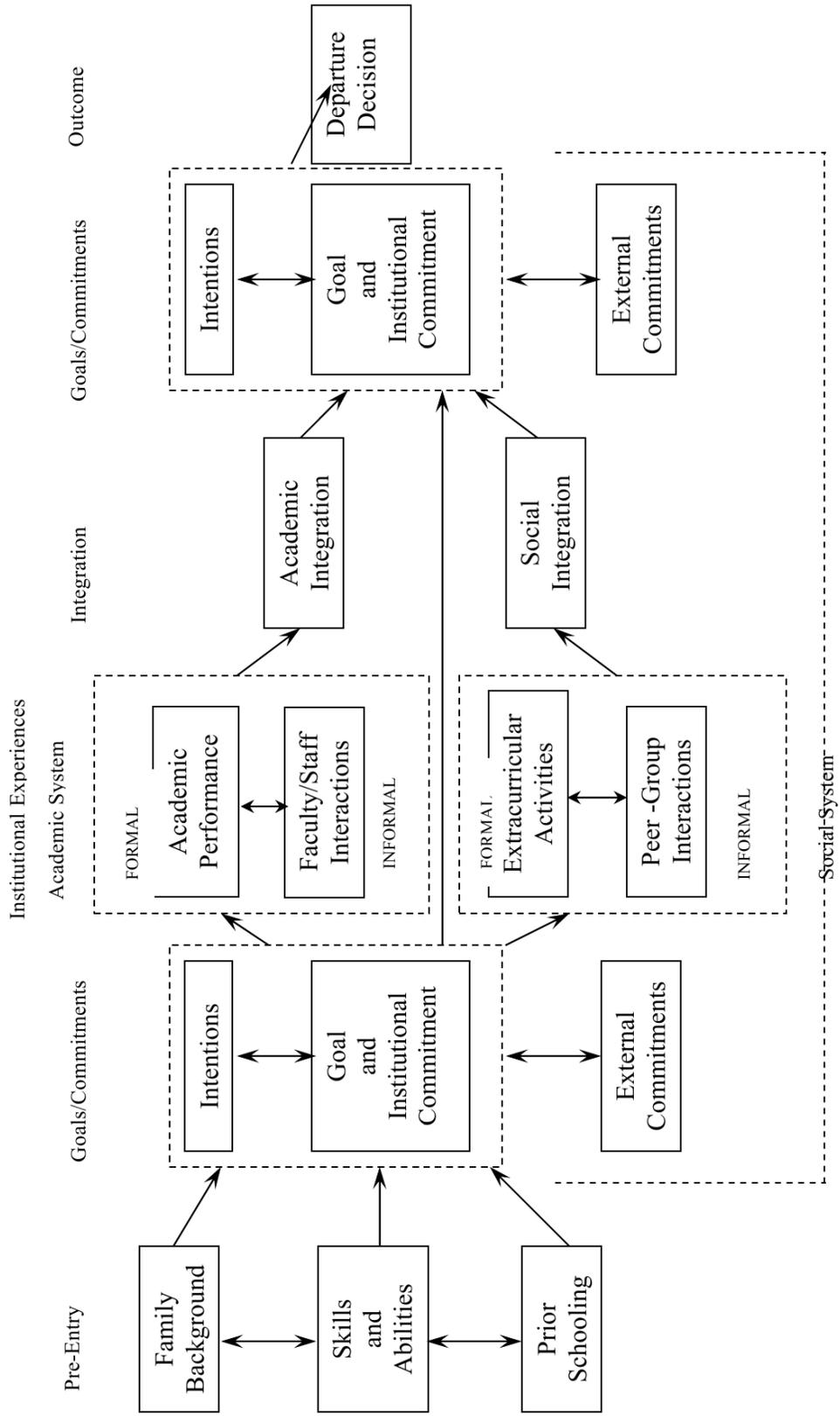


Figure 1. Tinto's (1993) theoretical model of college withdrawal.

responsibilities and employment have an influence on a student's commitment. Tinto (1993) subsequently added a dimension to his model which addressed external commitments: factors that potentially affect the experiences and integration of two-year and commuter students.

Tinto (1987) stated that students are constantly interacting with social and educational communities and that "persistence hinges on the construction of educational communities in college, program, and classroom levels which integrate students into the ongoing social and intellectual life of the institution" (p. 188). He noted the difficulty of community colleges, serving large numbers of working students, and stated they face many challenges in integrating students into the institution. Because of the high number of commuters, Tinto noted that academic and social interaction must take place within the classroom and serve as a smaller social and intellectual meeting place. Tinto (1997) also noted the importance of creating such situations by stating, "engagement in the community of the classroom can become a gateway for subsequent student involvement in the academic and social communities of the college generally" (p. 82).

Tinto's theory has been the primary framework for studies on student persistence and success for the past few decades. Many studies have tested his theory and Tinto used the subsequent criticisms to revise the theory several times into its present form. Even with the final revisions made in 1993; many scholars continue to find shortcomings with the model. Several scholars have pointed out the need to add a cultural component to the model to better understand the differences in persistence behavior of minority students and the overall change in the characteristics of today's students compared to students in the 1970's when the model was created (Hurtado & Carter, 1997; Tierney, 1991, 1992, 1993; Kuh & Love, 2000). Others have pointed out the lack of clarity in Tinto's definitions of academic and social integration making these concepts hard to measure and subsequently allowing researchers to define the terms and measurement as they see fit (Melguizo, 2011). Bean and Eaton (2001) also point out that Tinto does not explain

how students become academically and socially integrated. While scholars continue to point out potential shortcomings of Tinto's present model, it remains the most widely used framework in higher education today (Melguizo, 2011).

Academic Transfer Shock

Students who transfer from community colleges to 4-year institutions often face challenges in their new environment. A significant amount of analysis has focused on the academic struggles that these new students face. It is evident from the research that most transfer students have a hard time adjusting academically due to increased size of institutions, academic rigor, and competition amongst students (Holahan, Green, & Kelley, 1983; Keeley & House, 1993; Laanan, 1996; Townsend, 1993, 1995). Following the lead of Hills (1965), most studies use the term transfer shock to refer to the temporary dip in a transfer student's grade point average in the first or second semester following transfer (Cejda, Kaylor, & Rewey, 1998; Diaz, 1992). Transfer shock affects a very large percentage of transfer students.

Diaz (1992) conducted a meta-analysis of transfer shock which found that sixty-two studies reported a change in grade point average following transfer. A concerning result from this analysis indicates in 79% of the studies students experienced transfer shock, in contrast their GPA declined only slightly, usually one half of a grade point or less. Overall about 67% of students recovered from transfer shock within one year, some rebounding more than others (Diaz, 1992).

Academic Integration

Students find interaction with faculty difficult and much different at the transfer institution than in the community college setting. Townsend (1995) noted that university faculty members perpetuated a Darwinian attitude of "survival of the fittest" toward community college students. Students also find community college faculty on average more caring, helpful, and interested in their students than are university faculty (Bauer & Bauer, 1994; Townsend, 1995; Vaala, 1991). Townsend (2008) reports community

college transfers were not used to the faculty's impersonal attitude and lack of interest in knowing who their students are and whether they come to class. The nurturing environment at the community college largely influences a student's perception of their new academic environment; which in turn potentially influences their subsequent academic performance. Experiencing difficulty with academic integration after transferring makes adjustment difficult, unfortunately students also face social difficulties that exacerbate these effects following transfer.

Social Difficulties

A newly emerging area within the transfer literature focuses on the social and psychological difficulties of students. Although there aren't a large amount of studies, those that have looked at this phenomenon have noted some important findings. Current studies indicate that students experience some negative adjustment both socially and psychologically after transferring. Davies and Kratky (2000) found, "Students transferring from a community college to a senior institution do not consider it an easy process. They tell of difficulties in making new friends, getting involved with academic organizations or clubs and learning about services available" (p. 1). Transfer students also report feeling anonymous on campus, they often struggle to make friends, and experience issues with self-confidence (Bauer & Bauer, 1994; Townsend & Wilson, 2006).

While some transfer students may have established social relationships prior to their transfer, all students find themselves, "having to find and make friends in a place where most students' friendships have already been formed, usually in the freshman year" (Townsend, 2008, p. 74). Many students express more difficulty in making friends at the transfer institution compared to the community college where social integration seemed easier because they had started there (Townsend & Wilson, 2006). The minimal literature on nontraditional students indicates they have it worse because, "at 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...this is a very different age group” (Townsend & Wilson, 2006, p.448).

Laanan has also conducted a large amount of the work in the area of social integration for transfer students. He found that students who are involved in clubs and organizations experience less difficulty adjusting socially and those who spend more time socializing with friends also have less negative adjustment (Laanan, 2007). He also found that students who have a high self-rating on social self-confidence are more likely to have positive experiences following transfer. This is supported by previous work by Berger and Malaney (2003), which found that transfer students were most likely to be satisfied with social aspects of university life when they were actively engaged in social activities with peers at the university, and their overall satisfaction was higher if they lived and worked on campus.

Academic and social integration at the community college are major factors that influence academic and social integration at the transfer institution (Astin, 1984). “It is likely that what a student brings with them to the transfer environment impacts their academic and social experiences” (Laanan, 2007, p. 55). Active learning significantly influences social integration and indirectly affects student’s institutional commitment and intent to return (Braxton, Milem, & Sullivan, 2000). Liu and Liu (2000) also reported that academic integration and student satisfaction significantly influenced students’ persistence behavior.

While most literature has touted the positive effects of academic and social integration, Berger and Malaney (2003) cited a potential downfall of social integration. In their study, students who were more involved socially tended to see the greatest decline in their grades, indicating that there was a trade off and time spent on one’s social life might take a toll on academic performance.

Overall community colleges tend to be much smaller compared to 4-year institutions in nearly every aspect. Academic and social integration at the community college often go hand in hand as students get to know each other through in class activities and the formation of study groups. Borglum and Kubala (2000) discovered that community college students “who felt academically integrated also felt socially integrated.” Students get used to small class sizes, closer relationships with classmates and professors, and so when they transfer, they feel overwhelmed by the largeness of the new institution. Due to the striking shift in the academic environment, community college transfer students have more difficulty integrating themselves socially and academically to 4-year institutions (Townsend & Wilson, 2006). It is important to understand the factors that influence academic and social integration for students because integration has a major influence on student’s persistence within an institution.

Transfer Students

For students who intend to transfer, there are several appeals of starting at a community college instead of a 4-year university. Some of the biggest allures are the small class sizes, low student to teacher ratio which provides more individual attention, and low tuition. Nationally, the transfer rate estimate was approximately 25% for students transferring from two-year community colleges to four-year institutions, (Bradburn & Hurst, 2001). Approximately two-thirds of students entering community colleges in 2004 intended to pursue a Bachelor’s degree or higher (Provasnik & Planty, 2008). Recently the number of academically prepared high school graduates who choose to start at community colleges for financial, educational, or family reasons is believed to be growing (Adelman, 2005). It is clear the transfer function of community colleges remains strong today.

Over the past decade community college transfer rates have remained high, but much more so for affluent students than their low income peers, unfortunately, the transfer rates for low income students remains minimal (Adelman, 2006; Dougherty &

Kienzl, 2006; Dowd, Cheslock, & Melguizo, 2008). Regardless of whether the 4-year institution is selective or nonselective, community college transfer serves primarily middle class and affluent students en route to the Bachelor's degree. When analyzing elite institutions specifically, affluent students are almost exclusively served (Dowd et al., 2008).

Past studies have found that students who begin their education in community college are relatively successful once they transfer to four-year institutions (Pascarella, 1999). Holahan, Green, and Kelley (1983) found that transfer students were equally as likely to earn a degree as native students. More recently Melguizo & Dowd (2009), found that traditional-age students who transfer succeed in earning the bachelor's degree at rates similar to their counterparts who entered 4-year colleges directly. However, multiple studies indicate that students who earn an associate's degree prior to transfer are more likely to attain a bachelor's degree and in a shorter time than those who transfer without it (Carlan & Byxbe, 2000; Glass & Harrington, 2002). While a handful of studies find that transfer students are successful, a large body of research is focused on the difficulties these students face at the 4-year institution (Bauer & Bauer, 1994; Davies & Kratky, 2000; Laanan, 1996, 2007; Townsend, 2008; Townsend & Wilson, 2006).

Characteristics of Community College and 4-Year Students

The importance of higher education and obtaining a degree has grown exponentially over time in our society. Those seeking higher education have many choices of where to begin their schooling, and a large number of students choose to begin their postsecondary enrollment at community colleges. Berger and Malaney (2003) indicated that over half of all first-year college students in the United States are enrolled in community colleges. Even more recent enrollment patterns support these previous findings and indicate that nearly half of all students begin their academic careers in community colleges (Adelman, 2005). As of fall 2006, community colleges enrolled

about 3.5 out of every 10 postsecondary students (Provasnik & Planty, 2008). During the 2006-2007 school year, there were 1,045 community colleges nationally who served about 6.2 million students (Provasnik & Planty, 2008). Many students choose community colleges due to the fact that “average annual community college tuition and fees are less than half those at public 4-year colleges and universities and one-tenth those at private 4-year colleges and universities” (Provasnik & Planty, 2008, p. 23). Compared to 4-year institutions, today’s community colleges serve a diverse set of people in our society, particularly on factors such as race, sex, age, socioeconomic background, and academic preparation.

Race

Community colleges enroll a disproportionate amount of racial and ethnic minority students compared to 4-year universities. Most postsecondary students are white; however, black and Hispanic students made up a larger percentage of the student body in community colleges than in public 4-year institutions during the 2009-2010 academic year. Racial and ethnic minorities make up approximately 40% of all community college students (Provasnik & Planty, 2008). In the fall of 2009, 40% of enrolled black students attended public community colleges compared to 29.7% who enrolled in public 4 year institutions. That same year 52% of Hispanic undergraduates attended public 2 year institutions, while only 29.7% of enrolled Hispanics attended a public 4-year institution (Aud et al., 2011). Community colleges have provided minority students access to success; the graduation rate of minority students in community colleges has increased faster than the number of minorities enrolling in community colleges (Mullin, 2011).

Sex

Overtime, higher education has experienced feminization. Today women outnumber men in college, a trend that began around 1978 (Reason, 2003; Snyder & Dillow, 2011). As of 2009, 44% of women between age 18-24 were enrolled in colleges,

while only 38% of their male counterparts were enrolled. Not only do women outnumber men in college, women also graduate in higher numbers. A study by Carey (2005) looked at 6 year graduation rates from the entering class of 1997 across the U.S. and found that women significantly outnumber men in earning a degree from their original institutions. According to statistics from 2009, women out earned men in degrees at all levels with the exception of first-professional degrees earned (U.S. Department of Education, 2011).

Looking specifically at enrollment patterns at the community college level, estimates state that in 2003-2004, 59% of the student body was female, compared to 55% at 4-year institutions (Provasnik & Planty, 2008). Not only are women receiving more degrees than men in college, but studies have supported they are also earning higher grade point averages as well. Bogart and Price (1993), found females earned higher grade point averages than their male counterparts during their final semester.

Age

The average age of the community college student is 28.5 years old, which is substantially higher than the 23.7 year old average for students at public 4-year universities (Provasnik & Planty, 2008). In the academic year 2003-2004 about 35% of community college students were age 30 years or older, compared with only 13% at public 4-year institutions and 21% at 4-year private institutions. That same year 18% of community college students were between 24 and 29 years old, while the student body at 4-year public and private institutions had rates of 16% and 12% respectively (table SA-9) (Provasnik & Planty, 2008). Comparatively then, more than half of all community college students have an average age over 24, while in 4-year intuitions, students over 24 years comprise only between one-quarter and one-third of the entire student population. Much of the current research classifies students over age 24 as nontraditional.

Nontraditional students comprise a large proportion of the community college population and are projected to grow in number. Between 1990 and 2004, students over

the age of twenty-four increased in higher education by 17% (Snyder, Tan, & Hoffman, 2006), and it is projected that between 2004 and 2014 nontraditional aged students will increase additionally by 15%. Historically two factors were used to distinguish between traditional and nontraditional students; age and part-time status (Bean & Metzner, 1985). In addition to age and part-time status, Horn (1996) used multiple factors to distinguish a student as nontraditional:

1. Delays enrollment in postsecondary education following high school graduation;
2. Works full time (35 hours or more per week) while enrolled;
3. Is considered financially independent for financial aid purposes;
4. Has dependents other than a spouse;
5. Is a single parent; and/or
6. Does not have a high school diploma (includes those who didn't finish, obtained a GED or other high school completion certificate).

Using these characteristics, Horn further defined nontraditional students on a continuum. Students were considered “minimally nontraditional” if they had only one characteristic, “moderately nontraditional” if they possessed two or three, and “highly nontraditional” if they had four or more.

Using Horn's continuum, Choy (2002) found that during the 1999-2000 school year 28% of students were traditional, 27% were highly nontraditional, 28% were moderately nontraditional and 17% were minimally nontraditional. Using these definitions, almost three-quarters of all undergraduates are in some way “nontraditional,” with financial independence being the most common defining characteristic. For the 1999-2000 academic year, the percentage of students enrolled in a public two-year institution which met qualifications for at least one of the nontraditional characteristics was 90% (Choy, 2002). Under federal student financial aid regulations a student is

considered independent at the age of 24 or older; also those who are married and/or have children are considered independent (Horn & Nevill, 2006).

Previous studies use a variety of constructs to distinguish traditional from nontraditional students, but as the diversity of the student population continues to grow it becomes relevant to constrict defining traditional and nontraditional students from each other. Historically the convention has been to use age as the determining factor; many current studies have also adopted this practice.

Socioeconomic Background

Community colleges are well known for charging low tuition rates which leads to the disproportionate enrollment of students who come from a low socioeconomic background. Community colleges enrolled just over 40% of all undergraduate students living in poverty in 2007-2008; during that academic year 1 out of every 5 community college students lived in poverty (NCES, 2011). Twenty-six percent of community college students were in the lowest income level in 2003–04, compared with 20% of students in public and private not-for-profit 4-year institutions when students' incomes were compared with poverty thresholds (Horn & Nevill 2006). The low cost of a community college degree is a big draw for students who are disadvantaged economically. It provides access to higher education and the potential for future mobility.

Academic Preparation

The diversity of community college students in terms of their demographic characteristics is significant, yet they also tend to vary greatly in their academic preparation. Many of them range from well prepared and highly motivated to under-prepared with low expectations. Unlike most 4-year institutions, approximately 95% of public community colleges have open door policies and do not require students to take a qualifying exam or demonstrate a minimum level of academic proficiency for admittance (Provasnik & Planty, 2008). In fact, a high school diploma is not a requirement to attend

most community colleges. Once admitted, enrollment into courses may be limited for students by their outcomes on placement tests. For many students developmental courses in mathematics and writing are recommended or required prior to enrolling in courses that articulate to a larger 4-year university.

It shouldn't be surprising that students beginning academic careers in community college are generally less academically prepared than those starting at 4-year institutions. In the 1990's, 44% of those starting in community colleges had not reached algebra 2 in High School, compared to only 11% of those starting at 4-year institutions (Adelman, 2005).

Family Related Factors: Marriage and Children

Community college students also differ from those in 4-year institutions on several family related factors. Nearly twice as many community college students are married compared to those in 4-year institutions. Community college students are also nearly three times more likely to be a single parent than those attending a 4-year institution (Provasnik & Planty, 2008). In analysis done by Adelman, (2005) 55% of community college students between the ages 24 and 29, and 61.5% of those aged 30 or older had children living with them.

Residence

Analysis of data from the 2000-2001 National Survey of Student Engagement (NSSE) indicated more than two-thirds of first year students lived on campus; while 80% of seniors lived off campus at four institutions (Kuh, Gonyea, & Palmer, 2001). Many community colleges have very little on-campus housing and commuter students are the norm. Once they transfer, Townsend (1993, p.1) noted, "many community college transfers are commuter students so they may have fewer opportunities or be less willing to integrate themselves into the a college or university's social system."

Labor Force Participation

Another distinguishing factor of community college students is their connection to the labor force and their overall identity as a worker. More than 80% of community college students work, 60% of them work more than 20 hours per week and of those 30% work full time while concurrently enrolled in school full time. That rate increases to 41% for those between the ages of 30 and 39 (NCES, 2011; Phillippe & Patton, 2000). With so many working while attending college it comes as no surprise that more than half of all 21-23 year old community college students identified their primary role as worker rather than student, and that distinction increased to 75% for 24-29 year olds but dropped slightly to 73% for those aged 30 or more (Adelman, 2005).

Students with families, jobs, and various other commitments find community colleges attractive because they offer various course formats which fit the needs of the diverse student body. If you walk into a community college classroom you would find a diverse group of students. They run the gamut from the valedictorian of their graduating class to the very unmotivated and underprepared segment of their class, younger and older, parents and nonparents, full time workers and those with no jobs. Diversity is the norm in community colleges today. Students attend community colleges for a variety of reasons. Some find themselves there following high school with no future plans; others come in with a particular goal of receiving a certificate or degree for a specific occupation such as dental hygiene, medical assisting, nursing, or auto mechanics. And today, a great number are there to get a good liberal arts education in order to transfer to a four-year school.

Summary of Literature Review

Tinto (1975) developed a model of academic and social integration that has been used for more than three decades to guide researchers studying outcomes related to success and persistence of college students. Tinto has revised his model numerous times in response to criticism from his fellow colleagues. While the current version remedies

many of the problems identified previously by researchers, problems with this model still exist.

One major problem with this model is it primarily targets full-time, traditional aged students in 4-year institutions. As the number of students grows in community colleges, the number of potential transfer students grows as well. Transfer students vary by age from native students but they also vary on many external characteristics as well. While Tinto's model takes into account both age and external commitments (such as having a job, family responsibilities, etc.) his model only includes their effects on social and academic integration indirectly through a student's goals/commitments. Not living on campus, and having many external demands on your time may have a direct and significant influence on a student's academic and/or social integration. Other problems with the model include the lack of applicability to minority students, the vague and imprecise definition and suggested measurement of social and academic integration, as well as failure to explain how students become academically and socially integrated.

Most of the current and past research using Tinto's model (or one of the models derived from Tinto's original model) have a singular focus: student persistence. Researchers are so eager to explain and increase persistence that few studies have focused on what influences integration in a detailed manner. The few studies which have taken a detailed look at integration have done so either using a qualitative approach or a small population of students at a specific four-year institution (Laanan, 2007; Townsend & Wilson, 2006; Townsend, 2008). These studies have helped us to understand on an individual level and at a particular institution the difficulties students face. But there remains a lack of good, quality quantitative analysis with a national focus that would help us to understand what influences integration more generally.

A further problem with the existing studies on integration is their focus on traditional aged students. I included several sources in the review of literature that identified significant ways nontraditional students differ from traditional students. These

differences may have a significant influence on how and to what extent students become integrated academically and socially in the 4-year institution. With the increase in the population of older students in our postsecondary system, there is an increasing need to study traditional and nontraditional populations of students separately.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

Nearly half of all students begin their postsecondary schooling at a community college. Researchers have given much attention to the differences between those who begin their academic careers in community colleges versus 4-year institutions. There is a wide body of information demonstrating that when students transfer from community colleges to four year institutions they experience academic *transfer shock*. Recently researchers have noted that not only do students experience transfer shock academically but may also experience differences in academic and social integration.

Researchers often lump all community college transfer students into one category within the literature. This makes the assumption that they will experience the transfer process similarly. The purpose of this study is to identify whether traditional and nontraditional aged students experience academic transfer shock as well as academic and social integration in diverse ways. It is important to determine whether age influences the transfer experience so that policies and programs may be put in place to best serve specific groups of students as they continue their education in 4-year institutions.

This chapter discusses the research methodology and analysis used in this study. The following sections are included: research design, dataset, sample, variables, and data analysis.

Research Design

I determined the survey method as the best option to analyze differences in the transfer experiences of students. Ideally, one would include data from a national sample to get a broad understanding of this issue. I determined it was necessary to find existing data for analysis due to the financial and logistical constraints of collecting my own data on such a large scale. The use of already existing data is a common practice in

educational research as it is an effective way of determining outcomes quickly, and in a cost effective manner for a large population of people.

National survey dataset

The National Center for Education Statistics (NCES) provides many national, public use surveys of student's postsecondary experiences. The data I used for this dissertation were taken from the 2004-2009 Beginning Postsecondary Students Longitudinal Study (BPS: 04/09). The BPS is a longitudinal study which follows a cohort of students who are enrolling in postsecondary education for the first time. The BPS focuses on several areas in higher education including the persistence in and completion of postsecondary education, as well as changes in the student's personal goals, marital status, income and debt. It also examines the relationship between work and education, and the effect of education on the lives of the individuals.

Respondents for the BPS were initially surveyed through the National Postsecondary Student Aid Study (NPSAS) which is a "recurring survey of nationally representative, cross-sectional samples of postsecondary students designed to determine how students and their families pay for postsecondary education" (Cominole, Wheelless, Dudley, Franklin, & Wine, 2007, p.2). Three cohorts of students have been followed from the initial NPSAS. The first cohort was the BPS: 90/94, and the second was the BPS: 96/01. I used the third and most recent BPS cohort for this analysis who were initially interviewed in 2004 as part of the National Postsecondary Student Aid Study (NPSAS: 04). They were invited to participate in a follow up survey in 2006 (3 years after beginning their postsecondary experience) and again in 2009 (6 years after entry into postsecondary education). The NPSAS: 04 included 89,500 students at 1,670 postsecondary institutions that were a cluster sample of students receiving some type of federal aid for higher education (Cominole et al., 2007). The BPS 04/09 data collection began with a sample of 23,900 students who were a subset of students initially sampled for participation in the NPSAS:04 and classified by their NPSAS institutions as first time

beginners (FTBs) therefore making them eligible for inclusion in the BPS. The final BPS cohort (BPS:04/09) contains data from nearly 16,580 students at 1,360 postsecondary institutions.

The BPS focuses on first time beginner students regardless of when they completed high school making it unlike many samples which follow a particular high school graduating class. The BPS includes both traditional and nontraditional students in its sample. The BPS focuses on first time beginners making it ideal for studying nontraditional students who may have taken time off following high school graduation before pursuing a degree in higher education. It is important to have a dataset that does not collect data on a particular cohort to study the experiences of nontraditional students alongside their traditional peers. The BPS meets this important criterion and focuses on students beginning their postsecondary education for the first time regardless of age or high school graduation date.

I only used data from the initial survey (2004) and first follow up (2006) in this study. My primary research questions involve variables relating to academic outcomes as well as academic and social integration. The BPS asked questions on academic and social integration in the initial survey and the follow up in 2006; these questions were omitted in the 2009 follow up. The 2009 follow up focused more on labor force participation as opposed to academic outcomes; therefore I determined the data from the third follow up to be irrelevant for this particular study.

NCES gives researchers two options to analyze the BPS data: 1) apply for authorization to obtain the restricted use data file from NCES or 2) accept the NCES data usage agreement and use the web-based software data analysis application on their website <http://nces.ed.gov/datalab/>. I determined that the free access NCES provides to the public for their web-based software application called PowerStats was sufficient for my analysis. The PowerStats program allows the user to create tables, as well as run

correlational analyses including linear or logistic regression on the BPS: 04/09 dataset as well as eight other national datasets while protecting the anonymity of the respondents.

PowerStats produces the design-adjusted standard errors required to determine statistical significance of differences in the estimates. PowerStats also provides the user with a detailed description of how each variable was created, and in cases where an item comes directly from an interview the question wording is also provided. The output in PowerStats includes table estimates (either in percentages or means), the proper standard errors, ¹ and weighted sample sizes for the estimates. If the number of valid cases is too small to produce a reliable estimate (determined to be fewer than 30 cases), PowerStats prints the double dagger symbol instead of the estimate. (Radford, Berkner, Wheelless, & Shepherd, 2010, p. B-29)

PowerStats runs regression models in the same manner as SPSS. A separate program like SPSS would be advantageous in situations where a researcher would need to create many new variables from the raw data. I determined that using PowerStats for data analysis would not result in any significant disadvantage over using SPSS because it was unnecessary to create multiple variables. Using Powerstats to analyze the data would produce the same output without having to undergo the significant bureaucratic process in order to get the restricted use data file (which comes with extensive security requirements, i.e. being kept behind locked doors, on a private computer with no internet connectivity, etc.)

Sample

I used the BPS: 04/09 as the primary sample for this analysis. I was unable to calculate an exact sample size because the unweighted sample sizes are available only in the restricted data file and not available on PowerStats due to confidentiality. PowerStats gives a weighted sample size divided by 1,000 but this is a rough estimate of the actual population size. PowerStats provides the user the choice between two different weighted samples. The first weighted sample includes approximately 16,100 respondents and

¹ The BPS samples are not simple random samples; therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The PowerStats takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by PowerStats involves approximating the estimator by replication of the sampled population. The procedure used is a bootstrap technique.

includes data only from those who were initial respondents in 2004 and who responded to both follow ups in 2006 and 2009. The second weighted sample choice includes approximately 16,700 responses from respondents who were initially enrolled in 2004 and also responded again in 2009, any missing data from 2006 was imputed. I selected the first weighted sample choice for this analysis to ensure inclusion of those who had recorded responses in all three response periods since my analysis focuses on differences in experiences from the first response period to the second response period.

I then filtered the sample in order to focus solely on students who had transferred from 2 year to 4 year institutions. I filtered the data using the variable labeled Transfer (first): Institutions by level 2006 (TFINLV3Y). This variable indicates the level of the first institution attended in 2004 and the level of the destination institution to which they had transferred by 2006. This variable is constructed from two separate variables FSECTOR and TFIFTY3Y. The variable FSECTOR indicates the level (i.e. 2 year, 4 year, etc.) and control (i.e. public or private) of the first institution the respondent attended during the 2003-2004 academic year. While the variable TFIFTY3Y indicates the type of institution of the respondent's first transfer destination as of 2006; choices include both level and control for this variable as well. I selected the category labeled 2 year to 4 year for the filter variable TFINLV3Y so that analyses only included students who began their academic careers in 2-year institutions but had transferred to a four year institution by the time follow up data were collected in 2006. The sample for this study includes approximately 5.7% of the initial BPS: 04/09 sample after I applied the filter to include only transfer students.

The sample size became considerably smaller, particularly for the analysis on the nontraditional group since I filtered the data down to include only transfer students and then further divided the sample into 2 categories by age group. I was unable to compute an exact sample size due to confidentiality; however, Powerstats does compute a coarsened number of cases in the analysis output. The output explains that "Per NCES

standards, the true sample size has been modified to minimize disclosure risk of individual survey responses.” I had a lengthy conversation with a researcher at NCES who works with the BPS data and he brought to my attention that the coarsened number of cases is pretty close to the sample size. Additionally, he also indicated that included in the output is the percentage of observed over total cases. He stated that an estimate of the sample size for each model could also be computed by taking the percent of observed over total cases of the initial weight that was chosen for analysis (16,100 for this analysis). He suggested I could estimate a sample size by triangulating the coarsened number of cases with the value obtained when taking the percent of observed over total cases for the initial sample weight (M. Soldner, personal communication, August 23, 2011).

For the two regression models I used to analyze academic and social integration the coarsened number of cases was 834. The percent of observed over total cases was 4%; taking 4% of 16,100 gives a value of 644. I then took an average of the values to estimate that approximately 700 respondents comprise the sample in my models. I ended up combining some categories within variables to ensure that the models would include enough valid cases to run because of the small sample size and the standard within Powerstats not to produce an estimate if the number of valid cases is less than 30

Institutional Review Board Approval

I submitted an application to the Institutional Review Board at the University of Iowa for the project. The board approved the new project saying it was exempt due to the use of secondary data. (see Appendix B).

Variables

Independent Variables

I included a total of 13 variables for examination in this study (see table 1 for a complete list of variables). Age was the main variable of interest used in the analysis. I also included 10 additional control variables in the models I ran.

Table 1

Variables From BPS: 04/09

Variable	Description	Values
TFINLV3Y	Indicates the level of the respondent's first (origin) institution and first transferred (destination) institutions attended as of 2006. Filter variable	Variable categories are: (0) Never transferred (1) 4-year to 4-year (2) 4-year to 2-year (3) 4-year to less-than-2-year (4) 2-year to 4-year (5) 2-year to 2-year (6) 2- year to less-than-2-year (7) Less-than-2-year to 4-year (8) Less-than-2-year to 2-year (9) Less-than-2-year to less-than-2 year
AGE	Indicates respondent's age as of 12/31/2003.	15–79
GENDER	Indicates the respondent's gender	(1) Male (2) Female
RACE	Indicates the respondent's race	(1) White (2) Black or African American (3) Hispanic or Latino (4) Asian (5) American Indian or Alaska Native (6) Native Hawaiian or other Pacific Islander (7) Other (8) More than one race
	Independent variables	

Table 1. Continued

Variable	Description	Values
PAREduc	Indicates the highest level of education of either parent of the respondent during the 2003-2004 academic year.	(0) Do not know parent's education level (1) Did not complete high school (2) High School diploma or equivalent (3) Vocational or technical training (4) Less than 2 years of college (5) Associate's degree (6) 2 or more years of college but no degree (7) Bachelor's degree (8) Master's degree or equivalent (9) First-professional degree (10) Doctoral degree or equivalent
SMAR06	Indicates the respondent's marital status as of 2006	(1) Single never married (2) Married (3) Separated (4) Divorced (5) Widowed
DEPANY06	Indicates whether the respondent had dependent children in 2006	(0) No (1) Yes
HRSWK06	Indicates the average hours the respondent worked per week during the last term of enrollment at school	1-60

Table 1. Continued

Variable	Description	Values
LOCALR06	Indicates the respondent's type of housing while enrolled at the most recent school.	(1) On campus/other school-provided housing (2) With parent(s)/guardian(s) (3) Somewhere else (off campus)
GPA	Indicates the respondent's cumulative Grade Point Average (GPA) for the 2003-2004 academic year on a 4 point scale, multiplied by 100.	4-400
GPA06	Indicates the respondent's grade point average (4 point scale) when last enrolled, multiplied by 100.	70-400
ACAINX04	Academic integration index referring to the overall level of academic integration the respondent experienced at the most recent institution attended. This continuous number is derived based on the responses indicating how often students had done the following: had social contact with faculty (FREQ06A), talked with faculty about academic matters outside of class (FREQ06B), met with an academic advisor (FREQ06C), or participated in study groups (FREQ06g). Response options for the items were: never-0, sometimes-1, often-2. The four item average response was multiplied by 100 to yield an index value.	0-200

Table 1. Continued

Variable	Description	Values
SOCINX04	<p>Social integration index refers to the overall level of social integration the respondent experienced at the most recent institution attended. This continuous number is derived based on the average of the responses indicating how often the respondent had done the following: attended fine arts activities (FREQ06D), participated in school clubs (FREQ06E), or participated in intramural or varsity sports (FREQ06F). Response options for the items were: never-0, sometimes-1, often-2. The three item average response was multiplied by 100 to yield an index value.</p>	0–200
Dependent Variables		
ACAINX06	<p>Academic integration index referring to the overall level of academic integration the respondent experienced at the most recent institution attended. This continuous number is derived based on the responses indicating how often students had done the following: had social contact with faculty (FREQ06A), talked with faculty about academic matters outside of class (FREQ06B), met with an academic advisor (FREQ06C), or participated in study groups (FREQ06g). Response options for the items were: never-0, sometimes-1, often-2. The four item average response was multiplied by 100 to yield an index value.</p>	0–200

Table 1. Continued

Variable	Description	Values
SOCINX06	Social integration index refers to the overall level of social integration the respondent experienced at the most recent institution attended. This continuous number is derived based on the average of the responses indicating how often the respondent had done the following: attended fine arts activities (FREQ06D), participated in school clubs (FREQ06E), or participated in intramural or varsity sports (FREQ06F). Response options for the items were: never-0, sometimes-1, often-2. The three item average response was multiplied by 100 to yield an index value.	0–200

Age. I used age as the primary variable of interest for all of the research questions analyzed. Following the lead of past research, I also chose the age of 24 to distinguish traditional from nontraditional students in my analysis (Bean & Metzner, 1985; Choy, 2002; and Horn & Nevill, 2006). I used the continuous variable age first year enrolled (AGE) and transformed it into a dichotomous variable to indicate whether the respondent was a traditional or nontraditional student. This variable was derived from the respondent's initial interview from the NPSAS and represents the respondent's age as of December 31, 2003.

I chose this variable as the best option for determining a student's age because respondents were not subsequently asked their age in early 2006 during the second wave of the BPS survey, nor was their exact birth date ever reported. Ideally I would have constructed a new variable prior to the analysis of the 2006 BPS data whereby I would have added 2 years to the student's reported age indicating the student's approximate current age; however the PowerStats system does not allow the user to create new variables. I had to use an alternative approach to represent current age so that I could account for the increase in age that had occurred since the initial data collection through NPSAS in December of 2003.

I categorized respondents into one of two groups based on what their current calculated age would have been in early 2006 when the second wave of the BPS data was collected as an alternative to creating a new variable. I used the following logic: [approximate age in early 2006 = age as of 12/31/2003 + 2 years]. Using this logic I determined that if the respondent's age had been asked in 2006, the traditional aged students would be less than 24 years old and therefore would have reported ages less than 22 years old in December 2003 during initial data collection. The nontraditional students (those who would have been 24 or more in 2006) would have reported ages of 22 or older in December 2003 during initial data collection. In other words, respondents who had indicated they were 22 years old as of December 31, 2003 would have subsequently been

24 years of age by December of 2005 placing them into the category of nontraditional. The second wave of the BPS data was collected in 2006 between March and June therefore all respondents who were 24 as of December 2005 would subsequently fit the classification of nontraditional student in the 2006 follow up (Cominole et. al, 2007). For the analysis of all data in this study I grouped traditional students as those less than 22, and nontraditional students as 22 or greater to indicate their current age in the second wave collected in 2006.

Demographic Variables

I included classic background variables of gender, race, and a measure of socioeconomic status in all analyses since they have been well documented in the literature as having an effect on academic success (Bogart & Price, 2003; Kao & Thompson, 2003). For the variable race I reduced the initial 8 categories into 2 categories, the reference category included those who selected (1) white or (4) Asian. The non-white (minority) category included respondents who chose the following racial categories: (2) black or African American, (3) Hispanic or Latino, (5) American Indian or Alaska Native, (6) Native Hawaiian or other Pacific Islander, (7) other, or (8) more than one race. The aforementioned group of white and Asian (referred to as white from this point forward) was combined because Asians tend to perform similarly to or higher than whites academically; while there remains a substantial gap academically between whites and Asians and less advantaged minority groups such as Blacks, Hispanics, and Native Americans (Kao & Thompson, 2003). Combining the groups was also necessary because several of the categories contained less than 30 cases and therefore Powerstats would not run the model when the original groupings were maintained.

The traditional dichotomous categories of male and female were included for gender.

I also included student's socioeconomic status (SES) as a control variable. SES has consistently been found to have an influence on academic achievement and

attainment (Astin, 1993; Pascarella & Terenzini, 1991; Tinto, 1993). In the BPS 04/09 dataset there is no direct measure of SES, however the variable PAREduc (Parent's highest level of education) was used as a proxy for SES. The initial categorical variable included 11 responses; I combined several categories together to create 3 main categories; High School or less, some college, or bachelor's degree or beyond. The category *high school or less* included the responses: (1) Did not complete high school and (2) high school diploma or equivalent. The second category *some college* included the responses: (3) Vocational or technical training, (4) Less than 2 years of college, (5) associate's degree and (6) 2 or more years of college but no degree. The final category *bachelor's degree or beyond* included the following responses: (7) bachelor's degree, (8) master's degree or equivalent, (9) first-professional degree, and (10) doctoral degree or equivalent. I included five additional control variables in the models aside from the conventional background variables of race, gender and SES.

Additional Control Variables

I added two variables related to respondent's family status into the models: student's marital status, and whether the respondent had dependent children. It is well documented in the literature that students at community colleges are more likely to be married and have children than their counterparts at four year institutions (Adelman, 2005; Provasnik & Planty, 2008). Like the abovementioned race variable, student's marital status in 2006 (SMAR06) underwent some regrouping of categories to ensure the minimum number of cases was met for analysis. The initial categorical variable was reduced to a dichotomous variable by creating 2 categories (married and non-married) from the initial 5. The choice (2) married comprised one category, and a nonmarried category was created using responses (1) single, (3) separated, (4) divorced, and (5) widowed. I also included the variable DEPANY06 in all analyses, it is a dichotomous variable that indicates whether the respondent had any dependent children in 2006.

An additional control variable I included in the models was a continuous variable related to the number of hours the respondent worked in the paid labor force. This variable (HRSWK06) indicated the average hours the respondent worked per week during the last term of enrollment at school. Astin (1993) concluded that heavy work during college can have a negative influence on college grades. Several other studies have indicated that not only does paid work affect grade point average but it also reduces the number of hours a student spends on academics (King & Bannon, 2002; Kulm & Cramer, 2006).

I included a fourth control variable in the models (LOCALR06) indicating the location of the student's residence (on campus, off campus, or living with parents). Past literature indicates that working and living off campus are detrimental to study (King & Bannon, 2002; Pascarella & Terenzini, 2005). Tinto (1993) and Astin (1984) also emphasized that being connected to the organizational life of campus affected student involvement in clubs and organizations.

I included the respondent's 2003-2004 and 2006 GPA in the analysis. GPA in 03/04 was reported in a different manner than GPA in 2006. The respondent's cumulative Grade Point Average (GPA) for the 2003-2004 school year is a continuous variable indicating GPA on a 4 point scale, multiplied by 100. The data for this variable were collected through institutional data. In 2006 the GPA is self-reported by the respondent. GPA06 indicates the respondent's grade point average (4 point scale) when last enrolled, multiplied by 100 as reported by the student.

Dependent Variables

I used the variable academic integration index (ACAINX06) from 2006 as the dependent variable in the first model. This continuous variable refers to the overall level of academic integration the respondent experienced at the most recent institution attended. It is a composite of the average of the responses indicating how often the student engaged in several academic related behaviors. The respondent was asked to

indicate how often (0-never, 1-sometimes, or 2-often) they engaged in the following activities: had social contact with faculty, talked with faculty about academic matters outside of class, met with an academic advisor, or participated in study groups. The values for these items were averaged and that average was multiplied by 100 to give an index value.

I used the variable social integration index (SOCINX06) from 2006 as the dependent variable in the second regression model. This variable is continuous and refers to the overall level of social integration experienced by the respondent at the most recent institution attended. This variable is an average of the responses indicating how often the student engaged in several social behaviors. The respondent was asked to indicate how often (0-never, 1-sometimes, or 2-often) they engaged in the following activities: attended fine arts activities, participated in school clubs, and participated in intramural or varsity sports. The values for these items were averaged and that average was multiplied by 100 to give an index value.

Data Analysis

I first compared the mean GPA of traditional students in 03/04 to the mean GPA for traditional students in 2006 to determine whether students experienced academic transfer shock. A drop in GPA would indicate the presence of academic transfer shock. I did the same for nontraditional students as well to determine whether a drop in GPA (as expected from the literature) had occurred following transfer.

Second, I used an independent samples t-test in order to determine whether traditional students and nontraditional students who transfer from a community college to a 4-year institution experienced similar levels of academic transfer shock. The first t-test analyzed whether there was a significant difference in GPA for traditional and nontraditional students in 03/04 at the community college. The second t-test analyzed whether there was a significant difference in GPA for traditional and nontraditional students in 2006 at their transfer institution.

Multiple Regression

I used regression to test the relationship between age and level of academic integration as well as age and level of social integration. Linear regression is an appropriate choice in this situation since there are multiple independent variables in each model which are either continuous or dichotomous, and each model also contains a continuous dependent variable (Allison, 1999). I transformed age into a dichotomous variable for both of the models to allow for a comparison of the outcomes for traditional vs. nontraditional students.

The first model tested for the level of academic integration students experienced. Model one analyzed the influence of age, along with background variables (race, gender, SES), and other controls (marital status, presence of children, average number of hours worked per week, respondent's residential location, student's grade point average) on an index of academic integration.

The second model tested for the level of social integration students experienced. Model two analyzed the influence of age, along with background variables (race, gender, SES), and other controls (marital status, presence of children, average number of hours worked per week, respondent's residential location, student's grade point average) on an index of social integration.

Hypotheses

Based on the literature review and current empirical studies the following hypotheses were developed:

1. Nontraditional students will experience greater levels of academic transfer shock than traditional students.
2. Nontraditional students will exhibit lower levels of academic integration than traditional students.
3. Nontraditional students will exhibit lower levels of social integration than traditional students.

Summary

This study seeks to determine whether traditional and nontraditional students who transfer from community colleges to 4-year institutions experience academic transfer shock, academic integration, and social integration in diverse ways. The primary method of analysis for this study was a secondary analysis of longitudinal data from the BPS 04/06 using linear regression. I identified many control variables and included them in the models as deemed relevant by previous research. This study contributes to the existing literature by looking at traditional students and nontraditional student outcomes separately. Previous studies have combined all transfer students into one group thereby ignoring the noticeable differences between traditional and nontraditional students which could potentially have an influence on their experiences at a transfer institution.

CHAPTER 4

RESULTS

Introduction

The purpose of this study is to explore whether traditional and nontraditional students experience academic transfer shock as well as academic and social integration in similar or different ways. Previous studies on transfer shock and integration have focused on community college transfer students as one population; this study further breaks transfer students down by age to determine whether their experiences are unique. I will report significant findings at the $p \leq .10$ level because the population of 2-year to 4-year transfer students was relatively small and the subsample of nontraditional students was considerably smaller in the BPS 04/09 dataset. This study addresses three main research questions:

1. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic transfer shock?
2. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic integration at the 4-year institution?
3. Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of social integration at the 4-year institution?

In this chapter a summary of the methodology used in the study, along with descriptive statistics for each of the independent variables is included. A presentation of the results of the analysis for the three main research questions is presented in three distinct sections.

Summary of Methodology

This study included transfer students who began at a community college and subsequently transferred to a 4-year institution. I conducted secondary analysis of longitudinal data from the 2004-2009 Beginning Postsecondary Students survey to determine whether traditional and nontraditional students experienced transfer in similar or diverse ways. The Beginning Postsecondary Students survey consists of three waves of data. I utilized only the first two waves to answer the current research questions since they focus on academic experiences while the third wave focuses on transition to work and labor force participation. T-tests along with ordinary least squares regression was used to determine if significant differences in transfer shock, academic integration, and social integration for traditional and nontraditional students were present following transfer.

Descriptive Statistics

All three major research questions used the same full sample of transfer students. The sample included all students who transferred from a community college to a 4-year institution regardless of age. The sample includes approximately 700 respondents. Table 2 contains descriptive statistics on the full sample analyzed in the main three research questions, as well descriptive statistics for the subsample of traditional and nontraditional students used in the additional analyses.

Full Sample

Approximately 45.5% of the sample is male while 54.5% of the sample is female. This is consistent with recent literature suggesting more women are enrolled in college than men (Knapp, Kelly-Reid, & Whitmore, 2006). About 75.2% of respondents were white, while 24.8% came from a minority background. A measure of respondent's socioeconomic status was estimated using parent's highest level of education. Approximately 25.6% of the sample had a parent whose highest education was a high school degree or less, 28.6% had a parent who had some college, while 45.8% of the

Table 2

Descriptive Statistics of Full Sample and Subsamples

Variable	% of total sample	Traditional students (%)	Nontraditional students (%)
Sex			
Male	45.5	45.3	46.6
Female	54.5	54.7	53.4
Race			
White	75.2	77.8	53.1
Minority	24.8	22.2	46.9
Parent's education			
HS or less	25.6	24.0	38.6
Some college	28.6	28.9	26.3
BA or above	45.8	47.1	35.1
Marital status			
Single	90.1	92.9	67.2
Married	9.9	7.1	32.8
Dependents			
No	91.3	94.4	65.7
Yes	8.7	5.6	34.3
Housing			
On campus	16.3	20.0	2.7
With parent	33.1	37.0	18.8
Off campus	50.1	43.0	78.6
Job while enrolled			
Didn't work	29.2	28.0	39.5
Less than full-time	60.6	63.5	36.7
Full-time	10.1	8.5	23.8
Mean	16.7	16.5	18.1
Grade point 2004			
Less than 2.0	12.2	13.1	9.5
2.0–2.99	30.7	33.8	21.4
3.0 or above	57.1	53.1	69.0
Mean	3.07	3.07	3.09
Grade point 2006			
Less than 2.0	2.4	2.6	1.4
2.0 –2.99	29.7	32.6	18.8
3.0 or above	67.9	64.7	79.7
Mean	3.13	3.12	3.28

sample had a parent who possessed a Bachelor's degree or above. The average age of the sample of transfer students was 19.6 years.

A majority of the respondents were not married (90.1%) while a negligible 9.9% were married. Similarly most of the sample reported no dependents (91.3%) with 8.7% indicating the presence of dependents. In terms of residential location following transfer, a majority of respondents lived off campus; approximately 50.6% of respondents reported living off campus (not with their parents), while 33.1% lived with parents and only 16.3% lived on campus or in school-provided housing. More than two-thirds of the sample reported working while enrolled. Approximately 10.1% worked full time (40 hours or more); while 60.6% worked less than full-time, and 29.2% of respondents did not work while enrolled at the transfer institution. Those who did work averaged approximately 23.5 hours per week at their job. Following transfer, 57.1% of respondents indicated they had a GPA of 3.0 or above; 30.7% had a GPA of 2.0-2.99; while only 12.2% reported a GPA below 2.0. The correlation matrix with all bivariate correlations for all pairs of independent variables can be found in Appendix C.

Research Question 1

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic transfer shock? I examined the mean GPA at the 2-year school and subsequently compared it to the reported GPA at the transfer school in order to determine whether students experienced transfer shock (a dip in GPA) following transfer to a 4-year institution. The presence of transfer shock would be indicated by a drop in GPA as established by numerous prior studies (Cejda, Kaylor, & Rewey, 1998; Diaz, 1992; Hills, 1965). Interestingly, the BPS data are inconsistent with previous findings on transfer shock. Both traditional and nontraditional students reported a GPA that was higher at the 4-year institution than it was prior to transfer. It could be loosely concluded that transfer shock was not present for this particular sample of students.

One possible explanation for the inconsistent findings of this analysis and its failure to replicate previous research may be due to inconsistencies in how GPA data were collected in the first and second waves of data. In the first wave of the sample GPA data were institutional level data and obtained through official records, while the GPA data that were collected in 2006 was self-report data directly from the student interviews. Prior studies have indicated that self-report data has problems of validity (Bahrlick, Hall, & Berger, 1996, Kuncel, Crede, & Thomas, 2005).

Table 3

Mean Grade Point Average Prior to and Following Transfer

	GPA 2004	GPA 2006
Traditional students	3.07	3.12
Nontraditional students	3.09	3.28

When comparing GPA data for traditional and nontraditional students at the 2-year institution, nontraditional students had a slightly higher average grade point (3.09) compared to their traditional aged counterparts (3.07). These numbers, however, are not significantly different. In looking at median GPA at the 2-year institution, traditional students tended to have a higher GPA (3.17) than their nontraditional counterparts, indicating that nontraditional students had a larger GPA range.

When GPA was compared following transfer, the GPA of traditional students increased only slightly, while the GPA for nontraditional students increased considerably more. At the transfer institution, traditional students reported an average grade point of 3.12; while their nontraditional classmates reported an average GPA of 3.28. The difference in GPA for traditional and nontraditional students following transfer is statistically significant at the $p \leq .05$ level ($t = -1.97$). When comparing median GPA for

traditional vs. nontraditional students, the younger students reported a median GPA of 3.19; and nontraditional students reported a median GPA of 3.40. In looking at the change in GPA it is interesting to see that older students had a fairly large increase in GPA from the 2-year to the 4-year school; while younger students do not see much of an increase following transfer.

I also conducted a bivariate regression analysis to determine the relationship between 2004 GPA data and 2006 GPA data. After I filtered the data to include only traditional students, GPA at the 2-year institution was a highly significant ($t = 4.74$; $p \leq .001$) predictor of GPA at the transfer institution. When I filtered the data to include only nontraditional students, GPA at the 2-year institution is not a significant predictor of GPA at the transfer institution ($t = 1.18$; $p \leq .05$).

Research Question 2

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic integration at the 4-year institution?

A t-test was conducted to compare the difference in mean level of academic integration at the 4-year institution for traditional and nontraditional students. Results from the t-test determined whether students experienced similar levels of academic integration at the transfer institution. Traditional students reported a mean academic integration level of 92.1 (on a scale of 0-200); while their nontraditional counterparts reported a slightly higher average integration of 96.6. The difference in the reported means was not statistically significant ($t = -.60$; $p \leq .05$).

Due to the nonsignificant findings for the difference in mean academic integration at the transfer institution, I subsequently ran a t-test on the mean level of reported academic integration at the 2-year institution prior to transfer to see if the findings were

Table 4

Mean Level of Academic Integration Prior to and Following Transfer

	Academic integration 2004	Academic integration 2006
Traditional students	69.0	92.1
Nontraditional students	67.9	96.6

consistent prior to and after transfer. The mean level of academic integration at the 2-year institution for traditional and nontraditional students were also not significant at the 2-year institution prior to transfer ($t = .08; p \leq .05$). At the 2-year institution, traditional aged students reported a mean academic integration score of 69.0; while nontraditional students reported a score slightly lower at 67.9. Two interesting trends do occur however. Both sets of students report higher levels of academic integration at the 4-year institution. It also happens that traditional students report higher levels of academic integration at the 2-year school and that flips at the 4-year institution.

Generally when a t-test indicates there are no significant differences in two means no further analysis is conducted on a relationship of the two variables. However; I ran a full OLS regression model due to the exploratory nature of this study and to be certain that the control variables aren't causing a suppressor effect in the analysis. The regression model indicated what influence the control variables have on academic integration. As expected, the overall finding was not significant; however a few of the control variables were significant predictors of academic integration within the model. Living on campus had a positive effect on a student's academic integration ($p = .022$). While student's whose parent's had low education (High School degree or less) had a marginally negative effect on academic integration ($p = .059$). The most significant predictor of academic integration at the 4-year institution within the model was prior academic integration at the community college ($p = .000$).

Table 5

Multiple Regression Analysis Summary for Predicting Academic Integration

Variable	b	SE	β
Traditional aged student	-3.931	7.776	-0.028
Minority	7.361	4.974	0.073
Male	-2.210	4.28	-0.026
Married	-10.637	7.797	-0.075
Has Dependents	3.978	10.887	0.026
Hours worked per week	-0.138	0.134	-0.048
GPA 2006	0.025	0.036	0.034
Lives on campus	9.768*	4.216	0.094*
Parent's educ. HS or less	-8.082 [^]	4.260	-0.083 [^]
Parent's educ. some college	0.627	4.857	0.007
Academic integration 2004	0.245***	0.049	0.251***

Note: $R^2 = .102$.

[^] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Research Question 3

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of social integration at the 4-year institution?

A t-test was conducted to compare the difference in mean level of social integration at the 4-year institution for traditional and nontraditional students. Results from the t-test determined whether students experienced similar levels of social integration at the transfer institution. Traditional students reported a mean social integration level of 51.8 (on a scale of 0-200); while their nontraditional counterparts reported a slightly lower average integration of 44.6. The difference in the reported means was not statistically significant ($t = .47$; $p \leq .05$). Powerstats indicated that the estimates for nontraditional students should be interpreted with caution because the standard error represents more than 30% of the estimate.

Table 6

Mean Level of Social Integration Prior to and Following Transfer

	Social integration 2004	Social integration 2006
Traditional students	30.9	51.8
Nontraditional students	11.1	44.6

Due to the nonsignificant findings for the difference in mean social integration at the transfer institution, I subsequently ran a t-test on the mean level of reported social integration at the 2-year institution prior to transfer to see if the findings were consistent prior to and after transfer. The mean level of social integration at the 2-year institution for traditional and nontraditional students was statistically significant at the 2-year institution prior to transfer ($t = 4.65$; $p \leq .05$); however Powerstats indicated that the estimates for nontraditional students should be interpreted with caution because the standard error represents more than 30% of the estimate. Therefore, while the relationship appears to be significant it is possible there is some error in the calculation.

At the 2-year institution, traditional aged students reported a mean social integration score of 30.9; while nontraditional students reported a score much lower at 11.1. Both sets of students report higher levels of social integration at the 4-year institution.

Typically when a t-test indicates there are no significant differences in two means no further analysis is performed on the relationship of the two variables. However; I again ran a full OLS regression model due to the exploratory nature of this study and to be certain that the control variables aren't causing a suppressor effect in the analysis. The regression model indicated what influence the control variables have on social integration. As expected, the overall finding was not significant; however many of the control variables within the model were significant predictors of social integration.

Table 7

Multiple Regression Analysis Summary for Predicting Social Integration

Variable	b	SE	β
Traditional aged student	-6.547	10.472	-0.039
Minority	-3.781	5.370	-0.031
Male	13.341**	5.142	0.130**
Married	-13.710 [^]	7.247	-0.080 [^]
Has dependents	-14.522 [^]	8.534	-0.077 [^]
Hours worked per week	-0.413*	0.162	-0.119*
GPA 2006	0.077*	0.039	0.088*
Lives on campus	31.959***	6.477	0.256***
Parent's educ. HS or less	-1.752	7.037	-0.015
Parent's educ. some college	3.191	4.886	0.028
Social integration 2004	0.219***	0.061	0.177***

Note. $R^2 = .196$.

[^] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

As would be expected, being married ($p = .060$) and having dependents present in the home ($p = .090$) had marginally significant negative effects on social integration.

Another predictor of lower social integration was having a job while enrolled; this also had a statistically significant, negative influence on social integration ($p = .011$).

Several variables had a positive effect on social integration. Students' grade point average at the transfer institution was a significant predictor of their social integration ($p = .050$); while being male also increased one's social integration ($p = .010$). Again, similar to academic integration, a student's prior level of social integration at the community college had a significantly positive effect on social integration at the transfer institution ($p = .000$). One other major positive predictor of social integration was living on campus ($p = .000$); it would make sense that living on campus would increase one's social integration into the college environment as they would be immersed into the culture by virtue of living on campus.

Additional Analyses

I further analyzed the data to explore any additional interesting trends for each age group separately. I conducted additional analyses because of the nonsignificant findings of the main research questions and the fact that this research was exploratory in nature. I further filtered the data by age and ran two separate OLS regression models using several of the previous controls to look for effects on GPA, social integration and academic integration. I first ran models only for traditional aged students and then subsequently for nontraditional aged students. I had to limit the number of variables in the model in order for it to run because the sample size decreased significantly (especially for the nontraditional students).

Models for both traditional and nontraditional students on academic integration contained no variables that were statistically significant. The GPA model for nontraditional students also had no statistically significant predictors. There were however several statistically significant predictors for traditional students GPA, as well as social integration at the transfer institution. In the social integration model for nontraditional students there were a few statistically significant predictors of social integration. The correlation matrix with all bivariate correlations for all pairs of independent variables for the models filtered to include only traditional students can be found in Appendix D, and the correlation matrix with all bivariate correlations for all pairs of independent variables for the models filtered to include only nontraditional students can be found in Appendix E.

When looking at predictors of GPA at the transfer institution, being male had a marginal negative effect on GPA ($p = .066$), this is consistent with current research on GPA for undergraduates. Another marginally significant predictor of GPA was being married, which had a positive effect ($p = .067$) A more significant predictor of GPA for traditional aged students was whether they had dependents. Having dependents

Table 8

Multiple Regression Analysis Summary for Predicting Grade Point Average for Traditional Students at Transfer Institution

Variable	b	SE	β
Male	-11.368 [^]	6.161	-0.095 [^]
Minority	2.433	7.080	0.017
Married	23.070 [^]	12.531	0.098 [^]
Hours worked per week	0.087	0.182	0.021
Has dependents	-43.839 [*]	18.033	-0.160 [*]
GPA 2004	0.259 ^{***}	0.055	0.332 ^{***}

Note. $R^2 = .148$.

[^] $p \leq .10$. ^{*} $p \leq .05$. ^{**} $p \leq .01$. ^{***} $p \leq .001$.

decreased GPA ($p = .016$). As expected, a student's GPA prior to transfer also was a significant predictor of GPA at the transfer institution ($p = .000$).

The model for social integration of traditional students contained several variables that were statistically significant. Being male had a marginally positive effect on social integration ($p = .072$). It is possible this is because one of the measures of social integration relates to playing sports or intramural sports; it is generally thought that men engage in sports more than women. Being married had a negative effect on social integration ($p = .020$); as did having a job while enrolled ($p = .001$). A respondent's GPA had a marginal positive effect on social integration ($p = .076$).

The social integration model was the only model which had any statistically significant predictors for nontraditional students. Similar to the model for traditional students there was a positive effect for males in predicting greater social integration ($p = .048$). Being married also has a negative influence on social integration in this model ($p = .009$). Additionally having a job while enrolled had a marginal negative effect on social integration ($p = .084$).

Table 9

Multiple Regression Analysis Summary for Predicting Social Integration for Traditional Students

Variable	b	SE	β
Male	10.283 [^]	5.678	0.100 [^]
Minority	-5.439	5.982	-0.043
Married	-15.545*	6.640	-0.077*
Hours worked per week	-0.594***	0.172	-0.167***
Has dependents	-13.229	10.376	-0.056
GPA 2006	0.069 [^]	0.038	0.080 [^]

Note. $R^2 = .074$.

[^] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 10

Multiple Regression Analysis Summary for Predicting Social Integration for Nontraditional Students

Variable	b	SE	β
Male	35.334*	17.793	0.364*
Minority	21.597	19.291	0.224
Married	-31.306**	11.910	-0.311**
Hours worked per week	-0.836 [^]	0.482	-0.306 [^]
Has dependents	-1.145	11.658	-0.011
GPA 2006	0.099	0.127	0.103

Note. $R^2 = .511$.

[^] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Summary

In this chapter I presented a description of the sample used to analyze the three main research questions in this study. Overall there were no significant differences found between traditional students and nontraditional students on academic transfer shock, academic integration, or social integration. I analyzed several additional models because of the exploratory nature of this study. Analyses from the models and many variables

were discussed giving a greater understanding of some of the predictors of the main dependent variables in the study.

In chapter 5 I begin with a discussion of the findings for each of the three main research questions along with the additional analyses in my study and connect the findings to the current literature. Limitations of my study are identified and suggestions for future research are offered. Finally I discuss implications for future policy and programs related to the current research.

CHAPTER 5 DISCUSSION

Introduction

Higher education has become increasingly important for upward mobility in society. While access to postsecondary schooling can be limited for some groups, the open door policies of most community colleges have allowed less fortunate groups to ease their way into college. Each year nearly half of all students choose to begin their academic careers in a community college, many successfully transferring to 4-year institutions en route to the baccalaureate (Adelman, 2005). Over the past four decades a large amount of research has been devoted to understanding the academic success of transfer students within their new institutions by comparing them to their native peers. While the literature is well established on academic outcomes, studies examining social and academic integration for transfer students are just beginning and current data are primarily qualitative in nature. Further, previous studies often treat transfer students as one entity, potentially ignoring relevant characteristics which may differentially influence their integration experiences. Very rarely in the literature are the differences between traditional and nontraditional students examined. Using longitudinal data from the BPS 04/09, I was able to explore whether differences in transfer shock, academic integration, and social integration were present for traditional and nontraditional transfer students. While overall results indicate that no differences exist, several interesting trends emerged.

The remainder of this chapter includes a discussion of the results along with a comparison of my results to previous research. I then discuss limitations and suggestions for future research. Finally, implications of my results for policy and practice are presented.

Discussion of Results

Research Question 1

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic transfer shock? Transfer shock, as previously discussed, is a drop in grade point average following transfer from a 2-year to a 4-year institution (Hills, 1965). The results presented in table 3 show an increase in grade point average after transfer for both traditional and nontraditional students indicating the absence of transfer shock. Traditional aged students saw a .05 increase in their GPA from 3.07 to 3.12 following transfer, while nontraditional students saw a larger .19 increase in their GPA from 3.09 to 3.28. This is inconsistent with a majority of the previous transfer shock literature. Diaz (1992) conducted a meta-analysis of transfer shock and found that in 79% of the studies students experienced a drop in their grade point average. In the current analysis, neither group experienced the drop in GPA as expected and nontraditional students actually had a sizeable increase following transfer making their after transfer GPA significantly different than the traditional aged students.

While unexpected, the increase in GPA for both groups can be potentially explained by the inconsistency in the reporting method of GPA in the two waves of the data. Data on grade point average in the 2004 wave of the BPS data were collected using institutional data and obtained through official records, while GPA data in 2006 were self-reported by the respondent. Numerous studies have compared the accuracy of self-reported GPA data to actual GPA as determined through official records and generally it has been found that self-report data is not nearly as accurate and in many cases is inflated particularly for students who have low ability and lower grade point averages (Bahrlick, Hall, & Berger, 1996, Kuncel, Crede, & Thomas, 2005). Because of the possibility that respondents over estimated their GPA in 2006, it is feasible that one or both of these groups may have actually experienced a dip in GPA that is not reflected in the data. This

may be more likely for traditional students since their pre-transfer and post-transfer GPA was nearly identical (.02 difference). While the data show there was a slight increase in GPA for traditional students and a more moderate increase for nontraditional students I didn't definitively rule out the possibility that some transfer shock may have occurred. Future research on transfer shock of students can avoid this problem by either using self-report data or institutional data in both waves ensuring consistency for comparison sake.

Research Question 2

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of academic integration at the 4-year institution? Being integrated into the academic environment is a strong predictor of persistence; this was initially theorized by Tinto (1975) and has consistently held true over the past four decades in many other studies (Astin, 1984; Jalomo, 1995; Laanan, 2007; Pascarella & Terenzini, 2005; Tinto 1993, 1997). In my analysis both traditional and nontraditional students showed similar levels of academic integration at the transfer institution and were not significantly different from each other. As seen in table 4, Nontraditional students reported a slightly higher mean level of academic integration than traditional students, about 4.5 points higher on a 200 point scale following transfer. While no significant differences were found for the two groups, some interesting trends emerged, particularly the sizeable increase in academic integration following transfer.

Both traditional and nontraditional students reported a large increase in their academic integration at the transfer institution compared with the 2-year college. Traditional students reported an increase of 23.1 points, while nontraditional students saw an increase of 28.7 points on the 200 point scale. These findings are quite unexpected as the qualitative literature in this area supports the notion that students often feel alienated following transfer. The academic index variable in this analysis included four different questions, two of which asked students to indicate how often they had social contact with

faculty outside of class and how often they talked with faculty about academic matters outside of class. In her in-depth interviews with community college transfer students, Townsend (1995) reported that students found interaction with faculty difficult at the transfer institution, and that community college transfers are not accustomed to the faculty's impersonal attitude and lack of interest in knowing their students and whether they come to class (Townsend, 2008). It would be likely that if students initially found interaction difficult they would avoid subsequent interaction with faculty, but the data do not seem to support that rationalization.

One possible explanation for the increased frequency of interaction with faculty is that former transfer students may seek out faculty in an attempt to better understand the material and academic expectations at the new institution because past research shows they perceive the academic environment to be more difficult. Previous qualitative studies indicate that the community college is more nurturing and faculty are more helpful. Due to small class sizes at the community college perhaps faculty spend more one on one time in the classroom with students explaining expectations and providing assistance. Having that kind of in class support would decrease the frequency a student would need to have interaction with a professor outside of class at the community college. However, large classes at the university may prevent much of the individual attention that students are accustomed to, encouraging them to increase the frequency which they seek out faculty outside of class.

In looking at the full OLS model on academic integration, results in table 5 show that a few of the control variables in the model were significant. Prior academic integration is a major predictor of academic integration at the transfer institution as would be expected based on previous literature; Astin (1984) theorized that community college transfer students having high levels of involvement both socially and academically at their 2-year institution would most likely continue to have high levels of social involvement at their 4-year institution. This is also consistent with Laanan's (2007, p.55)

statement, “It is likely that what a student brings to the college environment will have an influence on their academic and social experiences.” Living on campus was also statistically significant in the model. Living on campus would provide more opportunity for a student to seek out interaction with a faculty member or other students. When students live and work off campus, the amount of time spent on campus would diminish likely decreasing their likelihood of integrating themselves.

Research Question 3

Do traditional students and nontraditional students who transfer from a community college to a 4-year institution experience similar levels of social integration at the 4-year institution? Similar to the findings on academic integration, there were no significant differences between traditional and nontraditional students on their mean level of social integration following transfer (see table 6). Not surprisingly traditional students reported higher levels of social integration both prior to and after transfer than their nontraditional peers. Much of the literature indicates that nontraditional students are more likely to have jobs and family obligations which would take away from their ability to interact socially with their peers, decreasing their social integration levels (Adelman, 2005; NCES, 2011; Phillippe & Patton, 2000). While several interesting trends emerged, Powerstats indicated the estimates should be interpreted with caution due to the standard error representing more than 30% of the estimate.

Like the model for academic integration, again several interesting findings on social integration were found. First, unlike with academic integration where traditional and nontraditional students reported similar mean levels (less than 5 points on a 200 point scale), the reported means for social integration varied quite a bit more between the groups. At the 2-year institution nontraditional students reported extremely low levels of social integration (11.1), while their traditional counterparts reported levels nearly 3 times higher at 30.9. The difference between these means is statistically significant at the $p \leq .05$ level. Following transfer, surprisingly the means for the two groups not only both

rise, but the social integration level of nontraditional students increases dramatically more than for traditional students. Following transfer the mean social integration levels between traditional and nontraditional students is just over 7 points different compared to nearly 20 points at the community college. This is surprising since nontraditional students would likely have peers at the community college to associate with that are more similar in age and lifestyle to themselves promoting integration more so than at the transfer institution where the student characteristics are much different. This does not support the previous research by Townsend (2008, p.448) where a nontraditional female stated, "In the community college there were a lot more people like myself that were either working and going to school...I feel very old and out of place here sometimes..." In general, Townsend (2008) found that most of the transfer students she interviewed, regardless of age, experienced difficulty with social integration following transfer.

In order to explore more in depth the nature of what influences social integration at the 4-year institution for traditional and nontraditional students I ran an OLS regression model in which several of the control variables were statistically significant. Being married and having dependents at home are both marginally significant at the $p \leq .10$ level. This is not surprising as previous literature shows that adults put work and family concerns before campus involvement (Ashar & Skenes, 1993). In this model having a paid job also has a statistically significant, negative influence on social integration. Having work and family obligations limits the amount of time one has to spend on campus, and likely reduces the social integration level of nontraditional students.

Consistent with the findings on academic integration, social integration at the community college was a statistically significant predictor of social integration at the transfer institution. Similarly, living on campus was also a significant predictor of social integration; being immersed in the college environment not just academically but residentially would logically increase the ability for one to become integrated to the social aspects of college. A gender difference also emerged in the model for social

integration, being male is positively associated with higher social integration. An explanation for this gender difference may be related to the activities respondents were asked about in the social integration questions. In one of the three questions comprising the social integration index; respondents were asked how often they participated in intramural or varsity sports. It is well known that males tend to have higher participation rates in sports, particularly in intramurals where it isn't mandated by Title IX that certain proportions of male and female athletes be maintained.

Additional Analyses

Because my research is exploratory in nature I further analyzed the data to explore any additional interesting trends for traditional and nontraditional students by running separate models. In order to be able to make comparisons between the findings for traditional and nontraditional students I included the same variables in each of the models. Due to the small sample size after the data were filtered for nontraditional students I was unable to include all of the variables that were included in the full models above, I included as many of the variables as the model would allow. Not included in the following models are variables related to residence, parent's education level, and prior academic and social integration. No variables reached statistical significance in the academic integration model for either traditional or nontraditional students. In the GPA model for nontraditional students no variables were statistically significant either.

Grade-Point-Average Model for Traditional Students

There were several variables which reached statistical significance in the GPA model for traditional students. Consistent with previous literature, table 8 shows that GPA at the 2-year institution is a strong predictor of GPA at the transfer institution; this isn't surprising and supports the reasoning that a minimum GPA prior to transfer is necessary for admittance into most 4-year institutions. Being married and having dependents were also significantly related to GPA; although in different ways. Having dependents had a negative influence on GPA, this is logical because having children

likely takes time away from one's ability to study thereby affecting your overall grade point average. A little more surprising is the fact that being married has a positive influence on grade point average for traditional aged students. Perhaps an explanation for this could be that being married may decrease one's likelihood of spending a lot of time socializing, and prior research shows that students who were more involved socially tended to see the greatest decline in their grades (Berger & Malaney, 2003). Again a gender difference appears in the model, being male had a negative relationship to grade point average; this is consistent with current literature that shows females to be more successful in college than their male counterparts (Bogart & Price, 2003).

Social Integration Model for Traditional Students

When I ran the model for social integration on data filtered to include only traditional students several variables were statistically significant (see table 9). Being male had a marginally positive effect on social integration. Like the explanation for its significance in the full model, it is in all probability due to men's increased participation in sports. Being married and having a job had a statistically significant negative effect on a respondent's social integration level. As explained above, family and work obligations often take time away from the possibility of engaging in social activities. In this model having dependents didn't reach statistical significance as it did in the full model; but all other variables remained significant that were previously significant.

Social Integration Model for Nontraditional Students

For the model on social integration filtered only to include nontraditional students, the variables which reached statistical significance were very similar however the level of significance differed (see table 8). Again being male was a positive, significant predictor of social integration. For nontraditional students it was significant at the $p \leq .05$ level while for traditional aged students the significance level was $p \leq .10$. Consistent with the prior social integration models I presented, being married and having a job are negatively related to social integration. The number of hours worked for a

nontraditional student is only marginally significant ($p \leq .10$ level), while it is very significant ($p \leq .001$) for traditional aged students on social integration level. Being married is also strongly related to social integration for nontraditional students in a negative manner, consistent with the findings for traditional students. Aside from the differences in significance levels for the variables in the last two models, GPA did not reach significance for nontraditional students, but it did for traditional students.

Summary of Results

By analyzing longitudinal data from the BPS 04/09, I explored whether differences in transfer shock, academic integration, and social integration were present for traditional and nontraditional transfer students. While overall results indicate that no differences exist on any of my outcomes, some of my findings contrasted with previous research. The lack of transfer shock experienced by both traditional and nontraditional students was particularly surprising. It has been well documented in the literature for many decades that most students experience a dip in GPA following transfer. It was also interesting that findings from my quantitative analysis on integration did not support the minimal existing qualitative literature on integration conducted by Townsend (2008).

Due to the exploratory nature of this study several additional analyses were completed and many of the control variables in the models were statistically significant. This supports findings from previous studies indicating that certain characteristics such as gender, and family and work obligations continue to influence academic outcomes and integration. Several of my significant control variables are consistent with the pre-entry and commitment factors Tinto included in his model to explain how academic and social integration influence persistence. Tinto made several adjustments to his model as a result of criticisms from researchers further studying the factors influencing academic integration, social integration and persistence.

I used Tinto's model as a conceptual framework for this study to identify factors which may influence academic and social integration. In my analysis of academic

integration, parent's educational background and prior academic integration were both statistically significant in the model. This finding supports Tinto's decision to include family background and prior schooling in his model. In the social integration model; marital status, having dependents, working, and living on campus were all statistically significant again supporting Tinto's inclusion of external commitments in his model. In my analyses there were several variables which were significant predictors of either academic integration or social integration or both of these. While my overall findings didn't indicate a difference in academic integration and social integration for traditional and nontraditional students, my findings are consistent with previous studies and support Tinto's inclusion of various factors which may influence academic and social integration and subsequently persistence.

Limitations

The current study has several limitations that restrict the generalization of its results. Like all secondary data analyses, this study is limited to some extent by the data. One major limitation is the minimal sample size of transfer students, particularly nontraditional students. For this analysis I only used the first two waves of data because the third wave didn't ask about academic behaviors (no questions on GPA, academic or social integration); it focuses mainly on the transition to work. The third wave of the BPS assumes that most students would have completed their degrees and subsequently moved to the labor force. While that is likely, the problem with that assumption is that for students who have family and work obligations, they may take longer than the average student to complete their degrees. By not asking questions related to academics in the third wave it is possible that a large number of transfer students, particularly those who work full time or have family obligations, are overlooked reducing the sample size. There are many characteristics within the existing literature which influence academic and social integration, but with a limited sample the number of control variables which can be included in the analysis becomes restricted. There were several variables included

in the full model which were statistically significant that couldn't be included in the separate models that analyzed transfer shock, academic integration, and social integration for traditional and nontraditional students separately. Future research should aim to target transfer students specifically to get a larger, more representative sample. They should also take into account the possibility that it may take transfer students longer to obtain a degree due to the other obligations they must juggle along with their classes.

The second major limitation of this study is also related to the problem of using secondary data. The inconsistency in the way grade point average was recorded in the first two waves of the BPS may have suppressed the presence of transfer shock. Because GPA were obtained through official records in the first wave, it is likely very accurate. However; the GPA in the second wave of the data were through self-reporting which previous research has shown to be less accurate than institutional level data. Because of the inconsistency in the reporting methods it can't be specified whether transfer shock actually occurred. While the data analysis in this study didn't find transfer shock to be present, the difference in GPA particularly for traditional students was so minimal that it is possible that even slight over reporting of grade point average would mask the finding of transfer shock. Future studies should take steps to ensure data are reported in a consistent manner for all waves.

Suggestions for Future Research

For nearly four decades, studies grounded in the work of Tinto (1975) have used academic and social integration as predictors of persistence and other academic outcomes. Findings from these studies are then used to develop policies and programs on campuses across the U.S. with the intent to increase integration and subsequently encourage persistence. While many programs focus on increasing integration very few previous studies have sought to explain which individual characteristics actually influence integration. It would be interesting and potentially informative to expand the current study to explain more fully which characteristics influence social and academic

integration; this information could help update and improve programs which seek to increase integration and persistence so they more effectively target populations most at risk of low integration.

A second area that needs further development is the measurement of social integration. Critics of Tinto's model point out that he fails to specifically define social integration and how to measure it, so studies aren't consistent in their measurement of this concept. A minimal amount of research has compared transfer students to their native peers on social integration, but the research that has been done is solely qualitative in nature. The current study is an attempt to investigate problems of integration reported in qualitative studies on a broader level by using quantitative data. The problem with this study and past research is that the measure of academic and social integration in many datasets is based on Tinto's original model which was developed more than 35 years ago. Questions on social integration in the current study ask about the attendance of fine art events, joining school clubs, and playing sports which historically may have been good measures of social integration. In current qualitative studies, students who report difficulty related to social integration focus on the difficulty of making friends, establishing relationships, and fitting into the already established groups on campus. To better understand social integration, future researchers should update questionnaires to more accurately reflect the modern student's perception of social integration and provide a specific definition for ease of measurement across studies.

Related to this, qualitative studies often focus on the difficulty or ease of integration while past quantitative studies have asked respondents about the frequency of which they engaged in certain activities. It is difficult to compare previous and current quantitative findings to the qualitative findings on social integration because their approach to integration is so different.

Finally, there remains a large absence of good, quality, nationally representative data which can be used to study the behavior of transfer students. Studies on transfer

students can be divided into two groups. The first are those that study outcomes related to persistence and academic success (GPA, graduation rates) at the transfer institution generally using quantitative data (Berger & Malaney, 2003; Carlan & Byxbe, 2000; Glass & Harrington; Melguizo & Dowd, 2009; Pascarella & Terrenzini, 1991). The other group of studies take a more in depth approach by studying transfer experiences, and integration into the new environment using qualitative methods Townsend (1993, 1995, 2008). Laanan (2007) has tried to bridge that gap by taking a more complex approach to studying integration following transfer, he focuses on the social, psychological, and background issues which influence the adjustment process but his data focused on community college transfers who begin in the California system and subsequently transfer to one major California university. While Laanan's work provides a greater understanding of the complex adjustment process; the California community college transfer process is very different than much of the rest of the country making it difficult to generalize to transfer students nationwide. While researchers are continuing to identify the importance of studying transfer students, there remains a lack of high quality, nationally representative data in order for us to study and explain this growing population of American transfer students on issues beyond retention, grade point average, and graduation.

Implications for Policy

As the rate of transfer students who begin in community colleges with the intent to transfer to 4-year institutions continues to rise, it is increasingly important for us to understand who these transfer students are so we can make that adjustment process smooth. While the literature on transfer students continues to develop it is clear from the most current research that students still struggle following transfer. In this particular study no significant differences were found between traditional and nontraditional students, but due to the minimal sample size it is unclear whether these results would hold up if a larger, more comprehensive study were conducted in a similar manner. It is

quite possible that with more extensive data we would find the needs of nontraditional and traditional students to be different following transfer.

Until such information becomes available past studies continue to show that both community colleges and universities can do much more to make the transfer process smooth. Community colleges need to continue to partner with universities to ensure articulation agreements are in place which make for a seamless transfer of courses. Community colleges can also help to prepare their students for what to expect following transfer by offering panel discussions by former transfer students, seminars to help students understand how the environment will be different, and community college professors can continue to have discussions with university professors on how best to prepare students academically for transfer. At the university level more focus needs to be placed on transfer students. Many universities spend time helping to acclimate their incoming freshman with extensive orientation programs, but the orientation programs for transfer students are much simpler, making the assumption that because they have been to college previously they need less guidance. Qualitative studies continue to find the opposite to be true; because the environment at a 4-year institution is so much different than the community college, students need and desire more support from both the community college and transfer institution to help with their transition.

Summary and Conclusions

In conclusion, this study sought to explore whether traditional and nontraditional students experienced transfer shock, academic integration, and social integration in similar ways. Although this study did not find evidence that age influences the experiences of transfer students it can't be ruled out for certain due to the small sample size. Using national data to explore these issues was a unique contribution of this study to the current literature which mainly uses qualitative data or data gathered from single institutions to explain the transfer process. Further research using a larger sample of

transfer students of all ages is necessary to aid in our understanding of how diverse students experience transfer shock, academic integration, and social integration.

APPENDIX A

SURVEY QUESTIONS FROM BPS: 04/09

Note: This appendix contains only the questions used for this study from both the original NPSAS and the BPS 04/06 and not the entire instrument.

Questions from the original NPSAS:

So that the rest of this interview may be customized for you, please answer the following questions. What is your gender?

Male

Female

In what month and year were you born?

-- / -----

What is your race? (Please check all that apply.)

White

Black or African American

Asian

American Indian or Alaska Native

Native Hawaiian or Other Pacific Islander

Other, specify _____

Questions from the BPS 04/06:

Please indicate whether you participate in the following activities never, sometimes, or often.

While enrolled at [primary school], how often do you...

Talk with faculty about academic matters, outside of class time

0= never

1= sometimes

2= often

Meet with advisor concerning academic plans.

0= never

1= sometimes

2= often

Have informal or social contacts with faculty members outside of classrooms and offices.

0= never

1= sometimes

2= often

Attend study groups outside of the classroom

0= never

1= sometimes

2= often

Participate in school clubs

0= never

1= sometimes

2= often

Attend music, choir, drama, or other fine arts activities

0= never

1= sometimes

2= often

Participate in varsity, intramural, or club sports.

0= never

1= sometimes

2= often

What was your cumulative GPA at [Primary school] through the end of your most recent term there?

While enrolled at [Primary school], how many hours do you work per week (on average)? Please exclude summer hours if you were not enrolled during the summer.

What is your current marital status?

1= Single never married

2= Married

3= Separated

4= Divorced

5= Widowed

Do you or your spouse have any children that you support financially?

0=No

1= Yes

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL


**Human Subjects Office/
Institutional Review Board (IRB)**

105 Hardin Library for the Health Sciences
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Iowa City, Iowa 52242-1098
319-335-6564 Fax 319-335-7310
irb@uiowa.edu
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IRB ID #: 201007745

To: Brooke Strahn-Koller

From: IRB-02 DHHS Registration # IRB00000100,
Univ of Iowa, DHHS Federalwide Assurance # FWA00003007

Re: Academic Transfer Shock and Social Integration: A comparison of outcomes for traditional and nontraditional students transferring from 2 year to 4 year institutions.

Approval Date: 08/31/10

**Next IRB Approval
Due Before:** N/A

Type of Application:

- New Project
 Continuing Review
 Modification

Type of Application Review:

- Full Board:
Meeting Date:
 Expedited

 Exempt

Approved for Populations:

- Children
 Prisoners
 Pregnant Women, Fetuses, Neonates

Source of Support:

This approval has been electronically signed by IRB Chair:
Elona McLees, CIP
08/31/10 0922

IRB Approval: IRB approval indicates that this project meets the regulatory requirements for the protection of human subjects. IRB approval does not absolve the principal investigator from complying with other institutional, collegiate, or departmental policies or procedures.

Agency Notification: If this is a New Project or Continuing Review application and the project is funded by an external government or non-profit agency, the original HHS 310 form, "Protection of Human Subjects Assurance Identification/IRB Certification/Declaration of Exemption," has been forwarded to the UI Division of Sponsored Programs, 100 Gilmore Hall, for appropriate action. You will receive a signed copy from Sponsored Programs.

Recruitment/Consent: Your IRB application has been approved for recruitment of subjects not to exceed the number indicated on your application form. If you are using written informed consent, the IRB-approved and stamped Informed Consent Document(s) are attached. Please make copies from the attached "masters" for subjects to sign when agreeing to participate. The original signed Informed Consent Document should be placed in your research files. A copy of the Informed Consent Document should be given to the subject. (A copy of the *signed* Informed Consent Document should be given to the subject if your Consent contains a HIPAA authorization section.) If hospital/clinic patients are being enrolled, a copy of the signed Informed Consent Document should be placed in the subject's chart, unless a Record of Consent form was approved by the IRB.

Continuing Review: Federal regulations require that the IRB re-approve research projects at intervals appropriate to the degree of risk, but no less than once per year. This process is called "continuing review." Continuing review for non-exempt research is required to occur as long as the research remains active for long-term follow-up of research subjects, even when the research is permanently closed to enrollment of new subjects and all subjects have completed all research-related interventions and to occur when the remaining research activities are limited to collection of private identifiable information. Your project "expires" at 12:01 AM on the date indicated on the preceding page ("Next IRB Approval Due on or Before"). You must obtain your next IRB approval of this project on or before that expiration date. You are responsible for submitting a Continuing Review application in sufficient time for approval before the expiration date, however the HSO will send a reminder notice approximately 60 and 30 days prior to the expiration date.

Modifications: Any change in this research project or materials must be submitted on a Modification application to the IRB for prior review and approval, except when a change is necessary to eliminate apparent immediate hazards to subjects. The investigator is required to promptly notify the IRB of any changes made without IRB approval to eliminate apparent immediate hazards to subjects using the Modification/Update Form. Modifications requiring the prior review and approval of the IRB include but are not limited to: changing the protocol or study procedures, changing investigators or funding sources, changing the Informed Consent Document, increasing the anticipated total number of subjects from what was originally approved, or adding any new materials (e.g., letters to subjects, ads, questionnaires).

Unanticipated Problems Involving Risks: You must promptly report to the IRB any serious and/or unexpected adverse experience, as defined in the UI Investigator's Guide, and any other unanticipated problems involving risks to subjects or others. The Reportable Events Form (REF) should be used for reporting to the IRB.

Audits/Record-Keeping: Your research records may be audited at any time during or after the implementation of your project. Federal and University policies require that all research records be maintained for a period of three (3) years following the close of the research project. For research that involves drugs or devices seeking FDA approval, the research records must be kept for a period of three years after the FDA has taken final action on the marketing application.

Additional Information: Complete information regarding research involving human subjects at The University of Iowa is available in the "Investigator's Guide to Human Subjects Research." Research investigators are expected to comply with these policies and procedures, and to be familiar with the University's Federalwide Assurance, the Belmont Report, 45CFR46, and other applicable regulations prior to conducting the research. These documents and IRB application and related forms are available on the Human Subjects Office website or are available by calling 335-6564.

APPENDIX C
BIVARIATE CORRELATIONS FOR
INDEPENDENT VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 2006 Academic integration index	1.0													
2 Traditional student	-0.030	1.0												
3 Minority	0.097	-0.187	1.0											
4 Male	-0.015	-0.003	-0.036	1.0										
5 Married	-0.070	-0.308	0.015	-0.154	1.0									
6 Has dependents	-0.005	-0.369	0.102	-0.090	0.510	1.0								
7 Has job	-0.083	-0.013	0.037	-0.153	0.203	0.054	1.0							
8 2006 GPA	0.034	-0.099	-0.033	-0.144	0.066	-0.027	-0.014	1.0						
9 Lives on campus	0.118	-0.014	0.066	0.048	-0.083	-0.055	-0.234	-0.006	1.0					
10 Parents degree: HS or less	-0.066	-0.111	0.124	0.054	0.001	0.033	-0.019	0.026	0.037	1.0				
11 Parents degree: Some college	0.037	-0.035	-0.077	-0.106	0.104	0.040	0.082	0.013	0.049	-0.360	1.0			
12 2004 academic integration index	0.264	-0.028	0.096	0.009	-0.032	-0.007	-0.032	0.011	0.02	0.011	0.038	1.0		
13 2006 social integration index	---	0.037	-0.033	0.168	-0.196	-0.153	-0.233	0.067	0.300	-0.020	.008	---	1.0	
14 2004 social integration index	---	0.143	-0.004	0.023	-0.180	-0.073	-0.086	-0.026	0.006	-0.077	-0.028	---	0.204	1.0

APPENDIX D
BIVARIATE CORRELATIONS FOR INDEPENDENT
VARIABLES FOR TRADITIONAL
STUDENT SAMPLE

	1	2	3	4	5	6	7	8	9
1 2006 academic integration index	1.0								
2 Male	-0.027	1.0							
3 Minority	0.076	-0.057	1.0						
4 Married	-0.041	-0.152	-0.028	1.0					
5 Has job	-0.054	-0.169	0.058	0.251	1.0				
6 Has dependents	0.025	-0.048	0.130	0.336	0.073	1.0			
7 2006 GPA	0.047	-0.149	-0.054	0.056	-0.002	-0.114	1.0		
8 2006 social integration index	---	0.133	-0.068	-0.147	-0.209	-0.113	0.069	1.0	
9 GPA 03/04	---	-0.127	-0.162	-0.021	-0.157	0.013	.333	---	1.0

APPENDIX E
BIVARIATE CORRELATIONS FOR INDEPENDENT
VARIABLES FOR NONTRADITIONAL
STUDENT SAMPLE

	1	2	3	4	5	6	7	8	9
1	2006 Academic integration index	1.0							
2	Male	0.042	1.0						
3	Minority	0.234	0.063	1.0					
4	Married	-0.290	-0.223	-0.154	1.0				
5	Has job	-0.242	-0.089	-0.051	0.046	1.0			
6	Has dependents	-0.191	-0.293	-0.241	0.678	1.0			
7	GPA 2006	-0.101	-0.014	-0.174	0.055	0.187	1.0		
8	2006 social integration index	---	0.468	0.289	-0.436	-0.375	0.093	1.0	
9	GPA 03/04	---	-0.175	-0.099	0.265	0.211	0.191	---	1.0

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