

5-2009

ACADEMIC SELF-EFFICACY, ACADEMIC  
INTEGRATION, SOCIAL INTEGRATION,  
AND PERSISTENCE AMONG FIRST-  
SEMESTER COMMUNITY COLLEGE  
TRANSFER STUDENTS AT A FOUR-YEAR  
INSTITUTION

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ACADEMIC SELF-EFFICACY, ACADEMIC INTEGRATION, SOCIAL  
INTEGRATION, AND PERSISTENCE AMONG FIRST-SEMESTER  
COMMUNITY COLLEGE TRANSFER STUDENTS  
AT A FOUR-YEAR INSTITUTION

---

A Dissertation  
Presented to  
the Graduate School of  
Clemson University

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In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy  
Educational Leadership

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by  
Susan Stanley Whorton  
May 2009

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Accepted by:  
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## ABSTRACT

The purpose of this study was to investigate differences in the academic self-efficacy, academic integration, social integration, and persistence among community college students from a selected community college during their first semester at a four-year institution. More specifically, differences between students who participated in a first-year transfer transition program and students who did not participate in a transfer transition program were investigated. Using a quantitative cross-sectional survey research design, data regarding transfer students' academic self-efficacy and perceived cohesion beliefs were collected from a web-based survey. These data were analyzed along with students' first semester academic performance and persistence data collected from the student records database at a four-year institution following the students' first semester of enrollment.

Six research questions were examined in this study using an independent samples *t*-test, Mann Whitney *U* tests and logistic regression. Logistic regression results showed that the odds of transferring all community college course credits to the four-year institution were 3.29 times higher for transfer transition program participants. Results for the other five research questions indicated that there were not significant differences in academic self-efficacy, perceived cohesion, fall semester GPR, fall semester credits earned, and fall to spring semester persistence between transfer transition program participants and nonparticipants.

While this study yielded an important finding regarding how participation in the transfer transition program increased the likelihood of community college course credits

transferring to the four-year institution, more research is needed on how to increase the success and persistence of transfer students at four-year institutions. Recommendations for policy and practice as well as future research regarding community college transfer students and the factors affecting their persistence at the four-year institution are also presented.

## ACKNOWLEDGMENTS

I am grateful for the support and encouragement that committee members, colleagues, friends and loved ones provided during the process of writing this dissertation. That support and encouragement lifted me up during the challenging times and enabled me to reach my goal. To the many folks who supported me along the way, thank you just doesn't seem to be enough. You have my heartfelt appreciation. Some people made significant contributions that I would especially like to acknowledge.

First, I would like to recognize my committee chair and members. I thank them for generously sharing their most valuable resources: their time and expertise. My chair, Frankie Keels Williams, provided just the right blend of challenge and support. The feedback she provided during our meetings always helped me make forward progress. Ronnie Chrestman and Jim Witte provided invaluable assistance with the methodology and statistics. Tony Cawthon and James Satterfield offered helpful input and support. My success as a student is a reflection of my committee members' commitment to mentor graduate students so that they can become better learners and researchers.

Second, Rhonda Todd provided indispensable assistance with typing and formatting. Her flexibility and willingness to work nights and weekends was so helpful.

Third, Patrice Noel and John Mittelstaedt provided constant and significant support in countless ways. I am so grateful for their enduring collegiality and friendship.

Finally, words cannot express the gratitude I feel for my husband, Bob Whorton. His encouragement and pride in me inspired me to do my best work. And despite having to eat many dinners alone, he never wavered in his support. His generosity was a gift.

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## CHAPTER 1

### NATURE OF THE PROBLEM

#### Introduction

Attainment of the baccalaureate degree functions as a prerequisite for future social and economic mobility. The bachelor's degree is so vital that Pascarella and Terenzini (1991) described it as "a passport to the American middle class" (p. 369). Selected pathways to attainment of the baccalaureate degree include beginning one's education at a four-year baccalaureate degree-granting institution or by initially enrolling at a community college and then transferring to the four-year institution. The transfer function of a community college provides students with a pathway and access to the baccalaureate degree (Cohen & Brawer, 2008).

Transferring from a community college to a four-year institution has been and continues to be an attractive option for many students. Adelman (2006) reported growth over the past ten years in the number of community college students applying to and matriculating at four-year institutions. According to the American Association of Community Colleges (2008), 11.5 million Americans were enrolled at one of the 1,195 two-year colleges located in the United States. Approximately 43% of those students were 21 or younger. Cohen and Brawer (2003) reported that approximately 50% of first-time college students chose to begin their undergraduate studies at a community college. The significant number of students who elected to begin their undergraduate experiences at a community college may be correlated with the flexibility, smaller classes, open

access, and affordability available at these institutions (Cohen & Brower, 2008; Townsend, 2007).

The potential for growth in their transfer student populations has led to four-year institutions devoting additional attention and resources toward improving the transition, retention, and degree-attainment rates of transfer students (Jacobs, 2004). Because transfer students provide an important source of enrollment and financial stability for a college or university, four-year institutions are potential beneficiaries of the transfer function of community colleges (Cheslock, 2003; Townsend, McNerny, & Arnold, 1993). Creating the conditions and pathways to facilitate attainment of the baccalaureate degree for all students, both native and transfer students, is the responsibility of the four-year institution (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Townsend & Wilson, 2006b). Given the potential that increased numbers of students may elect to transfer to four-year institutions, increasing the existing knowledge base about transfer students is warranted in order to develop an enhanced understanding of this population.

While the option to transfer to the four-year institution provides students with flexibility, affordability, and access to the baccalaureate degree, structural and student-centered barriers to attainment of the baccalaureate degree exist for students who begin their college careers at a community college (Dougherty, 1994; Doyle, 2006; Eggleston & Lanaan, 2001; McDonough, 1997; Roksa & Calcagno, 2008). Researchers noted that these barriers included insufficient financial resources (McDonough, 1997), lack of transfer support services (Eggleston & Lanaan, 2001), academic underpreparation (Dougherty, 1994; Roksa & Calcagno, 2008), and nonacceptance of community college

course credits at the four-year institution (Doyle, 2006). Because these barriers, as well as others, have the potential to adversely impact the baccalaureate attainment rate of community college transfer students, they merit the attention of higher education administrators, researchers and educational policy makers alike.

### Statement of the Problem

While an increased number of students have chosen to start their college studies at the community college, findings from previous studies (Alfonso, 2006; Dougherty, 1992; Kinnick & Kempner, 1988) suggest that students who began their studies at a community college were statistically less likely to earn a baccalaureate degree than students who began their studies at a four-year institution. This problem has two dimensions.

First, some students with baccalaureate aspirations fail to transfer from the community college to the four-year institution. Brint and Karabel (1989) found that students with baccalaureate aspirations who began their undergraduate education at a community college failed to transfer to a four-year institution at rates higher than anticipated. According to the American Association of Community Colleges (2008), only 53% of students who began their postsecondary education at a community college earned an associate's degree or transferred within eight years. Clark (1960) argued that beginning one's undergraduate studies at the community college served to "cool" the baccalaureate aspirations of students. Townsend and Wilson (2006b) suggested that factors contributing to this problem included transfer articulation issues between two-year and four-year institutions, lowered enrollment ceilings at four-year institutions, increased emphasis on vocational and technical programs at the expense of the transfer mission,

and a burgeoning movement on the part of community colleges to offer baccalaureate degrees.

The second dimension of this problem is that, after transferring to a four-year institution, many community college transfer students with baccalaureate intentions fail to graduate from the four-year institution. In studying transfer students who successfully matriculated at four-year institutions, researchers (Alfonso, 2006; Dougherty, 1992; Pascarella & Terenzini, 2005) concluded that the baccalaureate attainment rate for community college students who transferred to a four-year institution was lower than for students who began their postsecondary studies at a four-year institution. Glass and Harrington (2002) reported that transfer junior-level status was associated with drop out at a four-year institution. In a study using data from the 1995-96 Beginning Postsecondary Student cohort, Berkner, He and Cataldi (2002) reported that only 36% of community college students who transferred to a four-year institution earned a bachelor's degree within six years of matriculating at the community college.

The reasons why some community college students with baccalaureate aspirations fail to transfer and others fail to subsequently earn a baccalaureate degree at the four-year institution after transfer are not fully understood. Nonetheless, this problem adversely affects students, community colleges, four-year institutions, and society in terms of unrealized student educational attainment as well as lost financial and instructional resources for colleges and universities (Sydow & Sandel, 1998). Moreover, with the baccalaureate degree providing a means to social and economic mobility in the United States, it is essential that higher education leaders increase their understanding of the

academic, social, economic and educational factors that affect the persistence and educational attainment of community college transfer students.

Higher education scholars studying the community college and transfer students called for enhancing student services and programs at both the community college and four-year institution to prepare students for the transfer process so that they may successfully transition to the four-year institution (Townsend, 2007; Zamani, 2001). Notwithstanding, a dearth of empirical evidence exists regarding the effectiveness of joint transfer transition programs between community colleges and four-year institutions that attempt to prepare prospective transfer students for successful transfer to four-year institutions. Moreover, the research literature on how such initiatives contributed to improving the persistence and baccalaureate degree attainment of students who began their undergraduate experiences at a community college is also limited. This lack of empirical evidence further necessitated additional research to investigate the efficacy of these programs.

#### Purpose of the Study

The purpose of this research study was to investigate selected persistence indicators among community college transfer students during their first semester at a four-year institution. More specifically, the study examined differences in academic self-efficacy, sense of belonging, academic performance, and persistence between transfer students who participated in a transfer transition program at a selected community college during their first year of college and transfer students from the same community college who did not participate in the program. There were two primary objectives of this study.

The first was to determine whether there were significant differences in levels of academic self-efficacy, perceived cohesion, fall semester credits earned and fall semester grade point ratio (GPR) between the two groups. The second objective was to determine whether the odds of students (a) transferring all of their community college course credits to the four-year institution and (b) persisting from the fall semester to the spring semester was predicted by transfer transition program participant status.

#### Transfer Transition Program

The transfer transition program was a first-year program for entering freshman students. The program was designed to facilitate successful student transfer from the selected community college to the four-year institution. Upon satisfaction of the following academic requirements: (a) 30 earned transferrable semester credits, and (b) a 2.5 cumulative GPR, students were guaranteed admission to the four-year institution beginning their sophomore year. Admission staff at the four-year institution determined the admission of students to the transfer transition program. Only those students who had previously applied for freshman admission to the four-year institution but were not admitted were eligible to participate in the program. The admission office sent letters and brochures to all students invited to participate in the program informing students of the academic requirements for matriculation at the four-year institution as well as programs and services available through the program.

Students electing to participate in the program were required to enroll at the selected community college during their first year of college. While enrolled in the transfer transition program, students were eligible to utilize selected services at the four-

year institution. These services included (a) use of an email account, (b) access to academic support services, health care services, student activities and organizations, campus fitness and recreation center services and career exploration services; and (c) the ability to purchase tickets to athletic events that permitted transfer transition program participants to sit in the student section. Additionally, an orientation program, jointly developed by the four-year institution and community college, was conducted for the participants in the summer prior to the students' matriculation at the community college. During the orientation session, participants were informed about the programs and services they were eligible to use at both institutions while enrolled at the community college. Additionally, a representative from the academic affairs division at the four-year institution participated in the summer orientation session and provided participants with written and oral information regarding: (a) academic outcomes required for successful matriculation to the four-year institution; (b) enrollment in transferrable course work; and (c) satisfaction of first year curriculum requirements for the student's intended major at the four-year institution.

Contact with program participants was maintained throughout the academic year through (a) weekly office hours of the transfer transition program coordinator from the four-year institution; (b) monthly participant information sessions during the fall semester; and (c) a spring information session specifically devoted to explaining the transition and admission process from the community college to the four-year institution. The first cohort to participate in the transfer transition program matriculated at the selected community college in fall 2006.

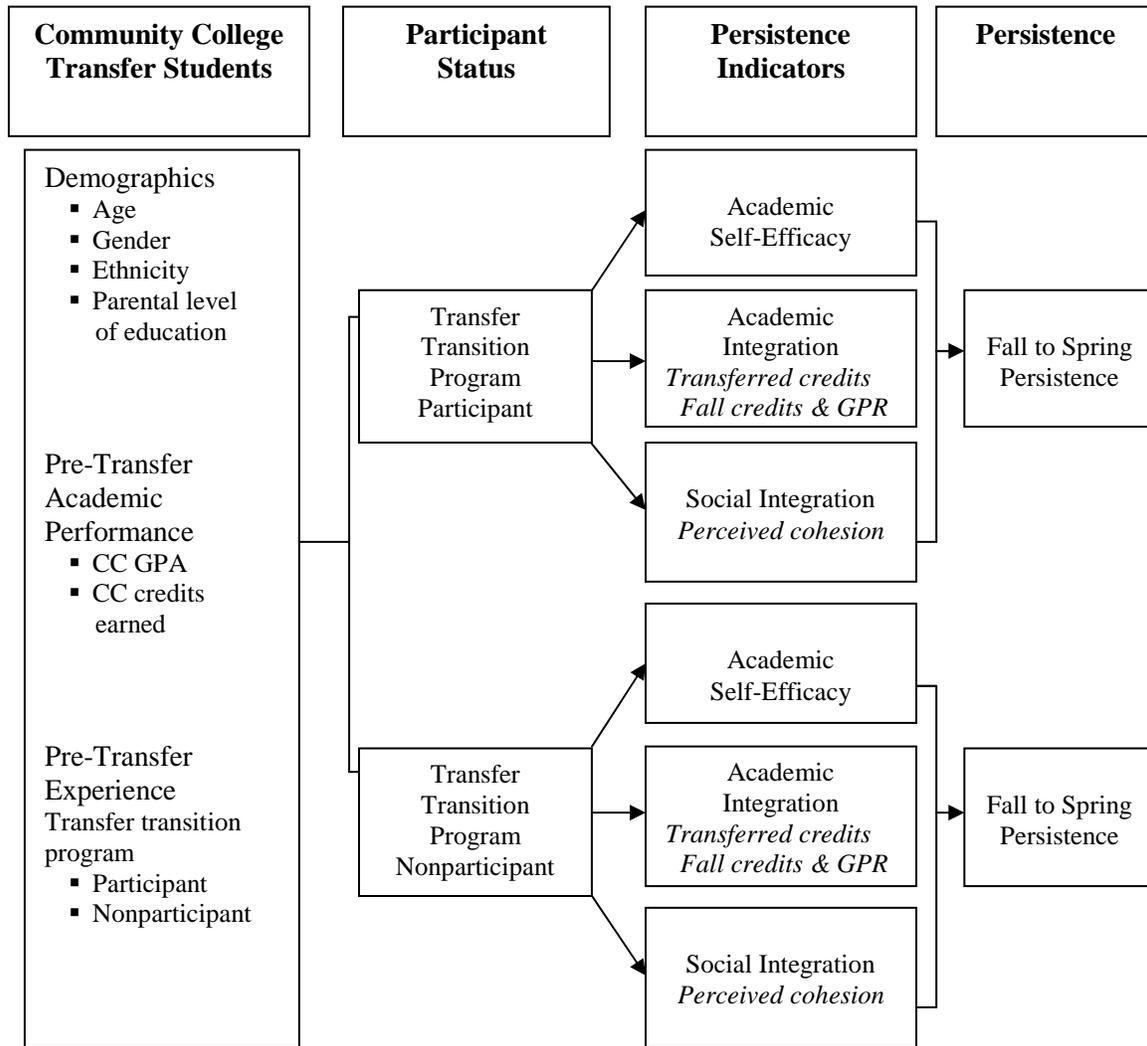
The participants for this study were (a) students from the transfer transition program cohort who matriculated at the selected community college in fall 2007 and subsequently enrolled at the four-year institution in fall 2008 and (b) students who matriculated at the selected community college in fall 2006 or fall 2007, and subsequently enrolled at the four-year institution in fall 2008, but who did not participate in the transfer transition program.

### Conceptual Framework

The purpose of this research study was to investigate selected persistence indicators among community college transfer students from a selected community college during their first semester at the four-year institution. Figure 1 provides a visual map illustrating that participation in a transfer transition program may result in differences between transfer transition program participants and nonparticipants with regard to self-perceptions and attitudes as well as with academic performance and persistence at the four-year institution. This study included the following variables: (a) age; (b) gender; (c) ethnicity; (d) parental educational attainment; (e) community college grade point average (GPA); (f) community college credits earned; (g) transfer transition program participant status; (h) level of academic self-efficacy; (i) level of perceived cohesion; (j) transferred community college credits; (k) fall semester credits earned at the four-year institution; (l) fall semester GPR at the four-year institution; and (m) fall-to-spring persistence at the four-year institution. Student age, gender, ethnicity, and parental educational attainment constituted student demographic characteristics. Participant status, community college GPA, and community college credits earned corresponded to the pre-transfer community

college experience. Academic self-efficacy, perceived cohesion, transferred credits, fall semester credits, and fall semester GPR represented indicators associated with persistence. Academic self-efficacy represented the student's level of confidence to successfully complete course work at the four-year institution. The conceptual framework incorporated the constructs of academic and social integration theorized to impact persistence (Tinto, 1975, 1993). Transferred credits, fall semester earned credits, and fall GPR were proxies for academic integration and perceived cohesion was a proxy for social integration. The fall-to-spring persistence rate after one semester at the four-year institution represented transfer student persistence.

Figure 1: Conceptual Framework



### Research Questions

The purpose of this research study was to investigate selected persistence indicators among community college transfer students during their first semester at the four-year institution. Two groups of students- those who participated in a transfer transition program and those who did not participate in the transfer transition program- were the participants in this study. The following six research questions guided the study:

1. Is there a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
2. Is there a significant difference in the levels of perceived cohesion between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
3. Is there is a significant difference in the number of credits earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
4. Is there is a significant difference in the semester GPR earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
5. Does transfer transition program participant status significantly predict the likelihood that all of a student's community college course credits will transfer to the four-year institution?
6. Does transfer transition program participant status significantly predict the likelihood that a student will persist from fall to spring semester?

#### Definition of Terms

The definitions listed below were used in the study. These definitions were developed to clarify and operationalize terms, classifications, and groups commonly used

in the research literature regarding community college transfer students, persistence, and educational attainment.

*Academic Self-Efficacy:* The level of confidence a student possesses to successfully perform particular academic tasks (Lent, Brown & Gore, 1997).

*Age:* The number of years the student had lived at the time the survey instrument was completed.

*Community College:* A public regionally accredited institution that awards the associates degree as its highest degree (Cohen & Brawer, 2008).

*Community College Credits:* The number of semester credits a student earned at the community college before matriculating at the four-year institution.

*Community College GPA:* The grade point average a student earned during their first year at the community college prior to matriculation at the four-year institution.

*Community College Transfer Student:* A student who begins his or her postsecondary education at a community college and then transfers to the four-year institution (Jacobs, 2004).

*Ethnicity:* A student's racial identity as defined by the student on the initial application for admission to the four-year institution. The options provided on the application were Black, Non-Hispanic, American Indian or Alaskan Native, Asian or Pacific Islander, Hispanic/Latino(a), White, Non-Hispanic, or Other American Ethnic Minority. The four-year institution uses racial identity categories required by the United States Office of Civil Rights.

*Grade Point Average (GPA):* The metric used by the community college to describe a student's academic performance. GPA is calculated by dividing the total number of grade points earned by the total number of credits attempted. A student's grade point average may range from 0.0 to a 4.0.

*Grade Point Ratio (GPR):* The metric used by the four-year institution to describe a student's academic performance. GPR is calculated by dividing the total number of grade points earned by the total number of credits attempted. A student's grade point ratio may range from 0.0 to a 4.0.

*Native Student:* A student who began his/her postsecondary education at the four-year institution and who has remained continuously enrolled at that institution since the initial enrollment (Johnson, 1987).

*Persistence:* The act of remaining enrolled at an institution after completion of course work during the current semester and returning for the subsequent semester. (Berkner et al., 2002).

*Parental Level of Educational Attainment:* Defined by parent's level of education (some high school or below, high school degree, some college, baccalaureate degree, master's degree, doctoral or professional degree or higher).

*Perceived Cohesion:* An individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group (Bollen & Hoyle, 1990).

*Transferred credits:* The number of semester hour credits earned at the community college accepted for credit by the four-year institution (Doyle, 2006).

## Theoretical Framework

The theoretical framework for this study was grounded in organizational socialization theory (Merton, 1957; Van Maanen & Schein, 1979), social cognitive theory (Bandura, 1977, 1997) and retention theory (Tinto, 1975, 1993). Retention, social cognitive, and organizational socialization theories provided a robust framework for this study because these theories help to explain the potential influence of self-beliefs and organizational socialization practices on student persistence behaviors. Additionally, the theories incorporate the impact that the institutional community and peer groups can have on student departure decisions.

### *Organizational Socialization*

Organizational socialization involves the transmission and dissemination of information in an organization that new members need to know to effectively operate in the organization (Merton, 1957). Van Maanen and Schein (1979) described organizational socialization as “the process by which one is ‘taught and learns the ropes’ of a particular organizational role”. Pascarella, Terenzini, and Wolfle (1986) defined new student orientation as a socialization tactic that colleges and universities employed to socialize new members (students) to the new and unfamiliar organization (the college or university) and help students successfully integrate into this new and previously unknown environment. Further, Upcraft and Farnsworth (1984) defined the purpose of new student orientation as the means of introducing the new collegiate environment to students and to help them be successful academically. Pascarella et al. (1986) reported that new student orientation programs had a significant indirect effect on persistence.

### *Social Cognitive Theory*

Social cognitive theory (Bandura, 1977, 1997) is concerned with how, through observation of models, individuals learn and acquire knowledge. Bandura (1997) posited learning as a social enterprise and argued the most powerful models for learning were peers. Learning was enhanced when the learner experienced a personal connection to the model and internalized that he or she was capable of similar learning, action, or knowledge acquisition. The belief that one can successfully complete a domain-specific task constitutes self-efficacy. Bandura (1997) argued that the experience of observing others whom a learner considered peers successfully complete desired tasks increased a learner's self-efficacy through vicariousness. Further, the level of self-efficacy one possessed impacted the level of effort expended, perseverance in the face of adversity, and the belief that one could successfully execute a desired course of action. Previous studies found relationships between high levels of academic self-efficacy and academic success and persistence (Hsieh, Sullivan, & Guerra, 2007; Lent, Brown & Larkin, 1984, 1986; Multon, Brown, & Lent, 1991).

### *Retention Theory*

Retention models explain student persistence and withdrawal behaviors at a college or university. Braxton, Sullivan and Johnson, (1997) reported that Tinto's model of student departure (1975, 1993) was the most-often cited retention model in the higher education literature. According to Tinto (1975, 1993), student persistence was explained by a student's past educational experiences, educational goals, and level of commitment to an institution. Level of commitment was affected by a student's level of academic and

social integration at the institution. High levels of academic and social integration strengthened a student's goal orientation and commitment to the institution which resulted in continued persistence at the four-year institution. Moreover, when conditions that fostered high levels of commitment and connection were created, institutions reduced the likelihood of student departure. The degree to which a student felt connected to an institution through peer relationships also factored into a student's decision of whether to leave or remain at an institution. Alternately, Tinto (1975, 1993) hypothesized that students who did not feel fully integrated into the academic and social life of an institution were not committed to their institution and would be more likely to leave the institution.

#### Research Design and Methodology

This study utilized data from an existing student records database at the four-year institution and a cross-sectional survey research design. A survey research design was selected because the data required for investigating the research problem and questions could not be obtained through an experimental process. When the researcher is studying a problem that cannot be investigated experimentally, a survey design is appropriate (Creswell, 2003; Kerlinger & Lee, 2000). Surveys, specifically questionnaires, are widely used in social science research and provide a mechanism for the researcher to systematically collect data from a sample that can be analyzed and generalized to a population (Babbie, 2002; Creswell, 2003).

To collect the data needed to complete this study, the researcher utilized both primary and secondary sources of data. Primary data were collected during fall 2008 and

spring 2009 using the student records database and individual student transcripts. Secondary data were collected from a web-based survey instrument that was sent to all new enrolled transfer students. Data were analyzed using Statistical Package for the Social Sciences (SPSS) 16.0 for Microsoft Windows and Statistical Analysis System (SAS) 9.2 for Windows. The research questions were analyzed using descriptive statistics, an independent samples *t*-test, Mann-Whitney *U* tests, and logistic regression.

#### Delimitations

This study was confined to investigating the self-perceptions, academic performance, and persistence of one cohort of community college transfer students from a specific community college who matriculated at the four-year institution in fall 2008. The cohort included transfer transition program participants as well as students who did not participate in the transfer transition program. Only those students who (a) graduated from high school in 2006 or 2007; (b) matriculated at the community college as a first-time student in fall 2006 or fall 2007 prior to their enrollment at the four-year institution; and (c) completed the survey were included in the cohort. Additionally, the scope of this study consisted of an analysis of fall 2008 credits and GPR earned during the first semester at the four-year institution and fall 2008 to spring 2009 persistence data. Data collected and analyzed for this study included fall 2008 credits and GPR earned, spring 2009 persistence, and responses collected from a web-based survey. Another delimitation of this study was that academic self-efficacy and perceived cohesion data were collected solely through the use of a web-based survey instrument.

## Significance of the Study

The extent to which community college transfer students successfully attain the baccalaureate degree is an important policy question for both community colleges and four-year institutions. From an enrollment management perspective, transfer transition programs provide a framework for increasing the transfer rate from the community colleges to the four-year institution. Additionally, these programs provide the opportunity for enhancing communication regarding transfer-related policies and processes between the institutions and students. Such programs also have the potential to create economies of scale for both students and the institutions. Students can complete all first-year course work at the community college at a reduced cost. Given shrinking public financing in many states, implementation of these programs may result in savings for students and increased tuition revenues for institutions. Additionally, as community colleges serve nearly half of the nation's first-time freshmen, including high proportions of underrepresented students, community colleges will play a vital role in the education of America's high school graduates for the foreseeable future.

This study contributed to the body of research on transfer students and addressed a gap in the existing literature by exploring whether there were significant differences in the academic self-efficacy, perceived cohesion and fall semester credits earned and GPR between transfer students who participated in a transfer transition program and non-participating transfer students from the same community college. Moreover, the study investigated whether transfer transition program participant status predicted the likelihood that all of a student's community college credits transferring to the four-year

institution and of a student persisting from the fall to spring semester. This study increased the level of knowledge about collaborative transfer transition programs and provides a foundation and methodology for further exploration of whether participation in pre-transfer initiatives result in post-transfer student success at the four-year institution. Administrators at two-year and four-year institutions can use the findings from the study to create conditions necessary to facilitate higher persistence rates among those who transfer from community colleges to four-year institutions.

#### Organization of the Study

This study is comprised of five chapters and organized as follows: the first chapter introduced the relevance of and need for this study by describing the barriers to baccalaureate attainment encountered by community college transfer students. The conceptual and theoretical frameworks for the study were also presented. Chapter two presents a review of the relevant retention, community college and transfer student research literature. Chapter three provides the details of the research design, data collection, and analysis procedures used for this study. Findings from the data analysis are presented in chapter four. Chapter five provides a discussion of the findings, conclusions, and recommendations for future research.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Introduction

A significant number of researchers have concluded that community college transfer students attain the baccalaureate attainment rate at lower rates than students who began their postsecondary studies at a four-year institution (Alfonso, 2006; Berkner, He, & Cataldi, 2002; Dougherty, 1992; Kinnick & Kempner, 1988; Livingston & Wirt, 2003). Doyle (2006) described the baccalaureate degree attainment process for community college transfer students as a three-stage process through which students must progress to earn a baccalaureate degree. During the first stage, a student had to complete a sufficient amount of transferrable course work at the community college in order for the student to gain admission to the four-year institution. Secondly, the student needed to successfully transition from the community college to the four-year institution. Finally, to earn the bachelor's degree, the student had to complete all requirements for graduation at the four-year institution. Attrition occurred when a student failed to successfully pass through any of the three stages.

This chapter presents a review of the relevant research literature associated with community college transfer students including the transfer mission of the community college and the impact of pre- and post-transfer experiences on the persistence and baccalaureate attainment of community college transfer students. More specifically, the review focuses on the following four areas: (a) the effect of attending a community college on baccalaureate attainment; (b) the individual and structural factors shown to

impact and predict the transfer rate of community college transfer students; (c) the transition process from the community college to the four-year institution; and (d) the influence of transition experiences on student retention and academic performance at the four-year institution. While the literature review for the study was guided by the research questions and conceptual and theoretical frameworks for the study, Doyle's (2006) three stages of the baccalaureate degree attainment process provided additional direction. The chapter begins with an overview on retention theories followed by a review of the community college literature. The chapter concludes with a review of the research on the pre- and post-transfer experiences of community college transfer students.

#### Retention Theories

According to Tinto (1993), student persistence and baccalaureate attainment rates played an important role in an institution's survival in terms of financial stability as well as maintaining academic programs as well as for students' future economic and social mobility. Accordingly, college completion and student attrition rates have received considerable attention in the higher education literature. Pascarella, Smart and Ethington (1986) described the accumulated literature on student retention and persistence as "voluminous" (p. 47).

Braxton, Sullivan, and Johnson (1997) reported that Tinto's (1975) model of student departure was the retention framework cited most often in the higher education literature over the past 30 years. Braxton (2000) noted that Tinto's framework had attained "near paradigmatic status" (p.7). According to Tinto (1993), students' past educational experiences, intentions, educational goals, and their level of commitment to

the institution were the factors that explained student persistence. Level of commitment was affected by a student's level of academic and social integration at the institution. Tinto theorized that academic and social integration were the two primary factors that determined whether a student chose to persist or withdraw from an institution. Further, high levels of academic and social integration strengthened a student's level of commitment to his or her goals and orientation to the institution, resulting in continued persistence at the four-year institution.

Tinto defined academic integration as the congruence an individual perceived between the individual's intellectual capabilities and aspirations and the intellectual climate at the institution as well as self-perceptions of intellectual and academic development and achievement. Other researchers (Nora & Cabrera 1996; Stage 1989) provided evidence that academic integration (as defined by grade point ratio) predicted persistence. According to Tinto, social integration incorporated the quality of a student's relationships and interactions with peer groups with their perceived sense of belongingness at the institution. The degree to which a student felt connected to an institution through peer relationships also factored into a student's decision of whether to remain at or leave an institution. Further, Tinto hypothesized that students who did not feel fully integrated into the academic and social life of an institution would not be committed to the institution and would thus be more likely to leave the institution.

Some scholars (Braxton, 2000; Pascarella & Terenzini, 1991; Townsend, 2006) asserted that Tinto's (1975) model, however useful, was bounded and limited by student and institution type. Pascarella and Terenzini (1991) acknowledged that the majority of

student retention research focused on first-time freshmen at residential four-year institutions. Braxton (2000) noted that further research and adaptations of the model were needed for other types of students and institutions. Townsend (2006) argued that because many first-time freshmen were electing to begin their postsecondary education at a two-year institution, additional research was warranted to determine whether Tinto's model adequately explained the persistence behaviors of community college students.

While Tinto (1975, 1993) was the researcher most often cited with regard to theories of retention and persistence (Braxton et al., 1997), Braxton (2000) noted the emergence of alternative environmental, psychological, and economic theories that attempted to explain student persistence and departure behaviors. In addition to Tinto's (1975, 1993) work, prior persistence research documented the predictive value of environmental variables and student intention (Bean, 1980) and involvement (Astin, 1993).

Astin (1993) postulated that involvement was the key to increasing student persistence. Students who became involved in campus activities and who made connections with faculty members outside of the classroom were more likely to persist. Astin argued that promoting opportunities for involvement with peers and faculty were the two most important tasks for increasing student persistence and retention. While the causes of student attrition and retention are not fully understood, both Astin and Tinto (1975, 1993) argued that institutions which actively involved students both inside and outside of the classroom and fostered a sense of connection that was real and meaningful to students produced campus environments that were conducive to student retention. In

addition to the aforementioned retention theories and frameworks, Braxton (2000) also reported the increased use of social cognitive theory (Bandura, 1977, 1997) as a theoretical framework for predicting student persistence behaviors.

### *Social Cognitive Theory*

Bandura's (1977, 1997) social cognitive theory has been used as a framework for explaining college student development and academic persistence and integration.

Bandura (1997) defined self-efficacy as one's belief in one's capability to successfully complete domain-specific tasks related to a specific outcome. Lent et al. (1984, 1986) suggested that the construct of self-efficacy could be extended to college students with regard to academic performance and the academic tasks performed by college students.

Moreover, Lent et al. (1997) defined academic self-efficacy as the level of confidence that a student felt regarding his or her ability to successfully complete academic tasks or reach selected academic milestones. Bandura (1997) argued that the level of confidence a student felt for achieving specific tasks within the academic domain was pivotal to academic success. Further, Bandura asserted that self-efficacy was a better predictor of academic success than skill level.

Bandura (1997) theorized that self-efficacy beliefs influenced behaviors, level of goal commitment, and degree of persistence in the face of perceived challenges or obstacles. Bandura identified personal agency or causal capability as an integral component of self-efficacy. Furthermore, the level of perceived self-efficacy one experienced was directly related to the level of control that individual perceived regarding his or her ability to achieve a desired outcome. According to Bandura, four

main factors influenced self-efficacy: (a) personal experience of success after attempting a specific task; (b) experiences of vicariousness after observing successes of peer group members; (c) acceptance of encouragement that a given task could realistically be achieved; and (d) physiological and emotional responses to a given event or experience. Further, behaviors and perceptions of available options were influenced by self-efficacy beliefs. According to Bandura, students who experienced past academic successes or who had observed someone in their peer group be successful were theorized to have higher levels of academic self-efficacy than students who experienced low levels of academic achievement.

Braxton (2000) noted the increased use and adoption of social cognitive theory and academic self-efficacy by higher education researchers as appropriate theoretical frameworks for retention models and studies. Findings from previous studies showed that level of academic self-efficacy was positively correlated to persistence and academic performance (Hsieh et al., 2007; Lent et al., 1984, 1986; Multon et al., 1991). Kahn and Nauta (2001) concluded that researchers should consider including social cognitive theory constructs such as outcome expectations and performance goals in future studies of multi-dimensional persistence models.

Multon et al. (1991) conducted a meta-analysis of the self-efficacy literature and concluded that self-efficacy positively correlated to academic performance ( $r = .38$ ) and persistence ( $r = .34$ ). The researchers concluded that high levels of personal efficacy beliefs strengthened student effort, persistence and coping skills in academic endeavors.

In a longitudinal study of first-year students, Chemers, Hu and Garcia (2001) investigated the effects of self-efficacy on academic performance and students' perception of the new university environment as either a challenge or threat. After controlling for student ability, the researchers found a statistically significant relationship between academic self-efficacy and academic achievement. Additionally, students with high levels of academic self-efficacy were confident and optimistic about successfully meeting the challenges that the first year of college presented to them.

Zajacova, Lynch and Espenshade (2005) investigated the effect of academic self-efficacy and stress on the grade point average, credit hours earned, and first-to second year persistence of 107 first-semester freshmen enrolled at a large urban four-year institution with a large minority and commuter student population. Results from the study indicated that academic self-efficacy was a better predictor of GPA and credit hours earned than perceived stress.

### *Organizational Socialization*

In general, organizations ensure their continued existence by retaining the new members who join the organization. Louis (1980) theorized that the process of entering a new organization resulted in uncertainty and shock for the newcomer. The resultant dissonance required that the newcomer make sense of the new environment. Tinto (1993) suggested that some new students left college shortly after their initial entry to the college environment because the transition to the new environment was too challenging for them.

Merton (1957) and Van Maanen and Schein (1979) described socialization tactics as practices in which organizations engaged to help newcomers adapt to the new

environment and cope with the shock they experienced after entering an unfamiliar environment. Socialization tactics have been employed to embed new members into the organization (Allen, 2006; Van Maanen & Schein, 1979), help newcomers learn the values and expectations of the organization (Merton, 1957; Van Maanen & Schein, 1979), and reduce attrition (Allen, 2006). Researchers found that attrition was highest among new employees (Griffeth & Horn, 2001) and students during their first year of college (Tinto, 1993).

Jones (2006) defined new employee orientation as a socialization tactic designed to acclimate new employees to the values, customs, and policies of the new organization and to decrease employee turnover. Jones found a positive correlation between new employee orientation programs that emphasized common learning experiences and provided opportunities for communication and social interactions among new members and on-the-job embeddedness. Additionally, Jones concluded that employee attrition was negatively correlated with on-the-job embeddedness.

Conceptually, Pascarella, Terenzini, and Wolfle (1986) defined new student orientation programs as a socialization tactic designed to introduce new students to the values and expectations of the college or university. New student orientation programs were developed to help students transition from their old environment into their new environment at the institution. Upcraft and Farnsworth (1984) defined orientation as “any effort on the part of an institution to help entering students make the transition from their previous environment to the collegiate environment and to enhance their success in college” (p. 28). Further, orientation programs were developed and implemented to

provide students with the information they needed to adjust to academic demands and to teach students what they needed to know in order to be academically successful (Perigo & Upcraft, 1989).

Empirical evidence of the direct effect of orientation programs on student retention in the scholarly literature was scarce. Limited evidence suggested a link between new student orientation programs and student retention (Upcraft & Farnsworth, 1984; Pascarella et al., 1986)

Using a survey research design, Pascarella et al. (1986) conducted a longitudinal study to test the hypotheses that attendance at the new student orientation program would have a positive effect on academic integration, social integration, and persistence. Results showed that participation in a new student orientation program had a small and nonsignificant direct effect on student persistence, but had a significant effect on social integration and institutional commitment. Social integration and institutional commitment were found to have a significant effect on persistence. Pascarella et al. concluded that orientation had an indirect influence on persistence. Further, the researchers suggested that the benefit of new student orientation programs may be in helping new students adjust to the new college environment and facilitating social integration.

## Community Colleges

### *Overview of Community Colleges*

In the United States, community colleges operate in all 50 states. Cohen and Brawer (2008) defined community colleges as “any institution regionally accredited to award the associate in arts or the associate in science as its highest degree” (p. 5).

Community colleges were established to provide the first two years of baccalaureate-level course work and to meet the educational needs of their local communities (Cohen & Brawer, 2008). From their beginnings at the turn of the twentieth century, the primary functions of the community college evolved to include academic transfer, vocational and technical education, continuing education, developmental education, and community service (Cohen & Brawer, 2008). Cohen and Brawer noted that the formation and establishment of community colleges created a new postsecondary educational pathway to the baccalaureate and made access to higher education available to students not previously served by four-year colleges and universities.

The new postsecondary educational option provided by community colleges resulted in a substantial increase in the number of these institutions over the past one hundred years. According to Koos (1924), there were 20 community colleges in existence in the United States in 1909. In 2008, there were 1,195 community colleges operating in the United States (American Association of Community Colleges, 2008).

Accordingly, increased educational access resulted in increased student enrollment. From 1965 to 2005, enrollment at community colleges grew from over one million students to over six million students (National Center for Education Statistics Digest, 2001, 2007). More specifically, Cohen and Brawer (2003) reported that approximately 43% of first-time college students chose to begin their undergraduate studies at a community college in 2003. Martinez (2004) forecasted that by 2015, enrollment at community colleges could increase by as much as 46% over 2000 enrollment levels.

The population of students served by community colleges has not only been large but also diverse. Community colleges enrolled students from varying educational, socio-economic, racial, gender, and cultural backgrounds including 47% African American students, 56% Hispanic students, and 57% of the Native American students in the United States (Geigerich, 2006). According to Horn and Nevill (2006), community college students were more likely to be female, Black, or Hispanic, and from low-income families.

The accumulated community college literature suggested that students chose to begin their postsecondary education at community colleges for a variety of reasons. Cohen and Brawer (2008) and Townsend (2007) attributed the increase in students who enrolled at community colleges to perceptions of flexibility, smaller classes, open access, and affordability available at these institutions. Wellman (2002) cited four primary factors that resulted in the growth of community college student enrollment: (a) increased numbers of high school graduates; (b) an increase in the number of students with lower socioeconomic status brought about by demographic shifts; (c) a more competitive admission landscape at four-year institutions; and (d) escalating costs at four-year institutions.

#### Effect of Attending a Community College on Baccalaureate Attainment

Community college proponents argued that by virtue of the underrepresented students that they serve, community colleges are a “democratizing ” force in higher education (Rouse, 1995). Dougherty and Townsend (2006) noted the resultant consequences associated with the open enrollment access provided by community

colleges: institutional mission-related conflicts and competing priorities. Cohen and Brawer (2008) argued that community colleges were expected to prepare students with baccalaureate aspirations for successful transfer to the four-year institution while at the same time mandated to serve a wide range of students with varying abilities, backgrounds, and educational aspirations.

Researchers defined the transfer function as one of the primary missions of the community college (Cohen & Brawer, 2008; Lanaan, 2001; Wellman, 2002) yet the transfer mission has also been subject to scrutiny. Varying conclusions about the effectiveness of the community college transfer function have been reported in the community college and transfer student literature. Researchers who investigated the effectiveness of the transfer function of community colleges produced evidence that of the students who matriculated at community colleges intending to transfer to a four-year institution, only a fraction actually transferred, and an even smaller fraction actually earned the baccalaureate degree (Alba & Lavin, 1981; Berkner et al., 2002; Brint & Karabel, 1989; Dougherty, 1992; McCormick & Carroll, 1997).

Critics of community colleges argued that the transfer mission of the community college was flawed and that community colleges “dampened” or “cooled out” (Clark, 1960) students’ educational aspirations. Dougherty (1994) argued that community colleges tracked students towards vocationally-oriented programs, even those students with baccalaureate aspirations. Earlier, Dougherty (1991) suggested that because community college students took longer to graduate, real costs for earning the baccalaureate degree were actually higher for community college students than for

students who began and completed their postsecondary education at a four-year institution, resulting in greater costs to both students and taxpayers. Pascarella (1999) suggested that students who began their postsecondary education at a community college were 15% less likely to attain a bachelor's degree in the same amount of time as students who commenced their studies at a four-year institution.

Supporters of the community college argued that these findings must be considered in light of (a) community colleges' open enrollment policies; (b) the characteristics of students who attend community colleges; and (c) how the transfer function and transfer rates were defined (Cohen & Brawer, 2008; Townsend, 2007; Townsend & Wilson, 2006b; Wellman, 2002). Researchers concluded that community colleges served a disproportionately higher number of (a) students requiring remediation, (b) minority students, and (c) low-income students (Cohen & Brawer, 2008; Roska & Calcagno, 2008; Wellman, 2002). Consequently, the expansion of access to the community college resulted in higher levels of attrition due to increased numbers of academically underprepared students (Cohen & Brawer, 2008)

Rouse (1995) concluded that many research studies on community college students were flawed from the outset because researchers failed to account for the possibility of discernible differences between students who chose to start at a community college and students who started their education at a four-year institution. Rouse suggested that in terms of educational goals and aspirations, community college students qualitatively differed from students at baccalaureate institutions. Rouse's work was supported by Grubb's (1991) earlier finding that the community college served an

important role for a group of students termed “experimenters”, defined as students who came to the community college without concrete future educational goals. According to Grubb, “experimenters” utilized the community college as a mechanism for ascertaining their educational aspirations and goals.

Further, Hilmer (1997) concluded that the transfer function of community colleges played an important educational mobility role for students from lower socioeconomic backgrounds. Controlling for precollege and socioeconomic variables, Hilmer found that students who began their postsecondary education at a community college were more likely to transfer to a more selective college or university than would have been possible for a student with similar qualifications directly out of high school.

Townsend (2007) argued that many first-time college students had legitimate reasons for choosing to begin at a community college. The students’ reasons fell outside of the traditional college attendance paradigm and researchers failed to consider those reasons in their analyses of the effects of attending a community college on transfer and attainment of a baccalaureate degree. Some of the reasons included lower costs of attendance, geographical proximity, open access, academic goal exploration and smaller classes. Townsend also concluded that researchers failed to account for the fact that students uncertain of their future educational aspirations often viewed taking courses at a community college as an opportunity to sort out and discern their educational goals. Earlier, Tinto (1993) suggested that for some students, enrollment in exploratory courses at the community college actually increased their commitment to attain the baccalaureate degree. Moreover, Townsend argued that a shared paradigm did not exist within the

educational research and policy community for empirically understanding students' perceptions about the function of the community college and their purposes for enrolling at community colleges. Alfonso, Bailey and Scott (2005) reported that community colleges enrolled many students who did not intend to transfer to the four-year institution and earn the baccalaureate degree.

### *Community College Transfer Rates*

In the area of transfer rates, Bradburn and Hurst (2001) illustrated the difficulty in clearly articulating community college transfer rates. Analyzing data from the 1990 Beginning Postsecondary Students Longitudinal Study (BPS 1990/1994) Bradburn and Hurst analyzed students' self-reported educational attainment aspiration data to develop eight definitions of transfer students. The definitions included (a) "expected to complete a bachelor's degree or higher"; (b) "enrolled in an academic program"; (c) "enrolled continuously in 1989-90"; (d) "enrolled anytime during 1990-91"; (e) "pursuing academic major or taking courses towards a bachelor's or both"; (f) "enrolled for 12 or more credit hours"; (g) "taking courses towards bachelor's"; and (h) pursuing academic major and taking courses towards bachelor's" (p. vi). Depending on which definition was applied, actual transfer rates ranged from 25% to 52%.

Further, Bradburn and Hurst (2001) concluded that in some studies regarding transfer rates, researchers who used a survey methodology failed to account for social desirability bias. Asking students about their educational aspirations through a survey or interview process likely resulted in some students responding that they intended to earn a baccalaureate degree. Bradburn and Hurst concluded that, in fact, those students did not

actually aspire to earn a baccalaureate degree, but stated so because of their perceptions that it was the socially desirable response.

The community college research literature provided evidence of the methodological problems in defining transfer rates. Notwithstanding, community college researchers also concluded that students with baccalaureate aspirations who choose to begin their postsecondary education at a community college decreased their chances for earning the baccalaureate degree (Alfonso, 2006; Kinnick & Kemper, 1988). In their review of educational attainment studies, Pascarella and Terenzini (1991, 2005) joined other researchers (Brint & Karabel, 1989; Dougherty, 1992; Pascarella, 1999) in determining that the odds of attaining a baccalaureate degree were significantly reduced by initial enrollment at a community college.

#### Facilitating Transfer to the Four-Year Institution

The process of successful transfer from a two-year institution to a four-year institution involves both structural and individual processes and attributes. Researchers concluded that individual factors such as educational aspirations (Livingston & Wirt, 2003), academic preparation (Dougherty, 1994), and intent to transfer (Harbin, 1997) were associated with transferring from the community college to the four-year institution.

While students' personal characteristics were shown to be associated with whether or not a student successfully transferred from a community college to a four-year institution, researchers also investigated structural and intrainstitutional factors theorized to impact baccalaureate attainment (Anderson, Sun, & Alfonso, 2006; Goldhaber, Gross, & DeBurgomaster, 2008; Keith, 1996.) Structural factors reviewed included community

college governance systems, articulation agreements and formalized partnerships between community colleges and four-year institutions.

#### *Community College Governance Systems*

In a national study of statewide community college systems, Keith (1996) found that community college transfer rates were correlated with a state's structure and governance of its community college system. States with more formal and centralized community college structures and transfer articulation agreements had higher transfer rates than states with decentralized community college systems and transfer articulation policies.

#### *Articulation Agreements*

Some researchers viewed articulation agreements as an important mechanism for promoting and facilitating the successful transfer of community college students (Ignash & Townsend, 2000). Anderson et al. (2006) described an articulation agreement as an instrument designed to facilitate transfer from the two-year to the four-year institution while Goldhaber, Gross, & DeBurgomaster (2008) defined articulation agreements as intra-institutional or statewide agreements that addressed the equivalency and transferability of courses between two- and four-year and satisfaction of degree program requirements.

While some community college researchers argued that articulation agreements enhanced transfer rates (Ignash & Townsend, 2000), other researchers suggested that articulation agreements did not improve the transfer rate of community college students (Anderson et al., 2006; Goldhaber et al., 2008). In a study of 12 states with statewide

transfer articulation agreements, Anderson et al. found no relationship between the existence of a statewide transfer articulation agreement and the probability of students transferring from two-year colleges to four-year colleges. The researchers compared the transfer rates in the 12 states with formal articulation policies and the 37 states without specific articulation policies (Maine did not have a community college system). The researchers found that there was not a significant difference in the transfer rate of community college transfer students between states with formal articulation policies and states without such policies. Further, the researchers concluded that the assumption that statewide transfer articulation agreements promoted transfer from the community college to the four-year institution was not supported by the data. Anderson et al. cautioned that this finding must be considered in the context that the sample of students was taken from the Beginning Postsecondary Students 1989 cohort when only 12 states had statewide transfer articulation agreements. The authors also noted that additional states mandated transfer articulation agreements after 1991 and that with additional time, the effect of transfer articulation agreements on the transfer rate of community college students may change.

Using a national dataset of students who enrolled at the community college directly after high school, Goldhaber et. al (2008) investigated the relationship between having a statewide articulation agreement and transfer rates. Similar to Anderson et al. (2006), Goldhaber et. al found no significant relationship between the statewide rate of transfer and existence of an articulation agreement.

In a qualitative study of transfer students, Davies and Dickman (1998) explored students' perceptions of the transfer process and awareness of available resources to assist them in their transition from the community college to the four-year institution. In their findings, the researchers reported the failure of any student to mention the statewide articulation agreement governing transfer of credit. No student mentioned this agreement as either a helpful feature or a hindrance to the transfer process. This finding was consistent with the conclusions of Anderson et al. (2006) and Goldhaber et al. (2008) that articulation agreements alone were not sufficient for facilitating successful and seamless transfer.

*Transfer Program Partnerships between Community Colleges and Four Year Institutions*

A review of the literature documented the existence of dual admission and transfer program partnerships between community colleges and baccalaureate degree granting institutions designed to encourage transfer to the four-year institution. The majority of the existing literature, however, was descriptive and anecdotal in nature. Two studies (Kisker, 2007; Cameron, 2005) investigated the efficacy of transfer program partnerships.

Utilizing a qualitative case study approach and the theoretical framework of network embeddedness, Kisker (2007) explored how levels of trust and quality of relationships between administrators at two-year and four-year institutions impacted work relationships and the effectiveness of community college-university transfer partnerships. Semi-structured individual interviews with faculty and administrators at a large Southern California university and nine community colleges in the surrounding

region were conducted regarding the effectiveness of transfer partnerships. Kisker identified participant beliefs about the importance of these partnerships and how the strength of relationships between administrators at community colleges and four-year institutions impacted levels of interpersonal trust. Kisker's findings included that (a) faculty at the two-year institution were key players in determining course content and course equivalencies and should be included in transfer partnership discussions; (b) levels of trust felt by faculty and administrators inversely impacted levels of territorialism; if high levels of trust were felt, the level of territorialism felt was lower; and (c) in order for the program to be sustained, faculty and administrators at both institutions had to believe that transfer partnerships were essential in enhancing the transfer function of the community college.

Cameron (2005) conducted a mixed-methods study with third-year community college transfer students majoring in nursing who had participated in a collaborative post-transfer baccalaureate nursing program at a large, urban, multicultural, commuter Canadian four-year university. Cameron explored students' perceptions and attitudes about starting their baccalaureate degree program at a community college and their subsequent participation in the collaborative nursing program at the four-year institution. Cameron also examined how students described their experiences during the transition from community college to the university and whether students from each of the community colleges shared common experiences at the university. Data were gathered through an initial survey administered to all third-year nursing transfer students. Through purposeful sampling, 13 students were identified for in-depth interviews to better

understand students' experiences, feelings, and perceptions. Findings from this study were grouped into six emerging themes: (a) transition stress; (b) geographic relocation; (c) academic shock; (d) professional transformation; (e) social life; and (f) adaptation. Cameron found that students described the transition to the four-year as stressful and students experienced academic and personal difficulties at the four-year institution. Cameron's recommendations included: (a) fostering better relationships and scholarly exchanges between faculties at community colleges and four-year institutions to facilitate a smoother transition for students; and (b) enhancing transfer orientation programs to ameliorate the stresses associated with transfer to the four-year institution.

#### *Predictors of Transfer to the Four-Year Institution*

While the accumulated research literature indicated that students who began their postsecondary education at a community college were less likely to earn a baccalaureate degree than native students, researchers identified factors that predicted the transfer of community college students to the four-year institution. Using a sample from the National Longitudinal High School and Beyond 1980 cohort, Eddy, Christie and Rao (2006) found that full-time enrollment at the community college, being male, higher composite family socioeconomic status, obtaining an associate's degree prior to transfer, and having high school friends who intended to earn a college degree predicted transfer. Further, researchers found that strength of baccalaureate aspirations (Livingston & Wirt, 2003; McCormick & Carroll, 1997; Wirt et al., 2003), intention to transfer (Harbin, 1997), and availability of transfer resources, and information at the community college (Monroe & Richtig, 2002) were also associated with transfer.

## The Transition Process at the Four-Year Institution

The transfer transition process not only required students to persist long enough at the two-year institution to successfully transfer, but also involved a transition from the familiar environment of the community college to the new environment of the four-year institution (Doyle, 2006; Flaga, 2006). According to Schlossberg (1981), “a transition can be said to occur if an event or nonevent results in a change in assumptions of oneself and the world, thus requiring a corresponding change in one’s behavior” (p. 5). Louis (1980) suggested that making the transition to a new organization resulted in uncertainty and surprise. The transition to the four-year institution required students to learn and adapt to new values and expectations embedded in the academic and social systems at the four-year institution. Vaala (1989) reported that community college transfer students’ expectations of what the four-year institution environment would be like were incongruous with their actual experiences. Students reported that they “found the university to be substantially different than what they anticipated” (p. 36). Researchers concluded that successful transition and adaptation to the four-year institution was essential for a transfer student to reach his or her goal of attaining the baccalaureate degree (Cameron 2005; Flaga, 2006; Townsend & Wilson, 2006a).

Early research on the transition of transfer students to the four-year institution focused on the concept of “transfer shock,” coined by Hills (1965). “Transfer shock” was defined as the likelihood of the transfer student’s GPA to decline during the first year at the four-year institution because of the change in culture. Subsequent research on community college transfer students at four-year institutions further explored the transfer

shock concept. Diaz (1992) conducted a meta-analysis of transfer shock studies and found that 79% of the studies presented evidence of transfer shock. Cejda, Kaylor and Rewey (1998) found an association between transfer shock and a student's major. Diaz also found that the majority of transfer students recovered from transfer shock during their first year at the four-year institution. Studies by House (1989) and Monotondon and Eikner (1997) found that transfer students performed as well academically as native students, while other accumulated research revealed that community college transfer students did not persist and attain the baccalaureate degree at the same rate as native students (Pascarella & Terenzini, 1991, 2005).

Researchers expanded on the work of earlier scholars by investigating not only the academic performance of native and transfer students, but also the transfer transition experiences of students at the four-year institution. Upon transfer, community college transfer students were found to experience a different institutional culture at the four-year institution. Bauer and Bauer (1994) found that transfer students experienced the environment at the four-year institution as less nurturing and more impersonal. Using structured interviews, Townsend (1993) interviewed 9 community college transfer students about their academic experiences at the community college and the four-year institution. Townsend reported that transfer students perceived faculty at the four-year institution as less caring and student-centered than community college faculty.

Using focus groups, Davies and Dickman (1998) conducted a qualitative study to better understand community college transfer students' (a) overall transfer experiences; (b) perceptions of the transfer process; and (c) level of awareness regarding the resources

available to them at both the community college and four-year institution. To determine if there were differing perceptions about the transfer process and transition between highly successful students and students who were struggling academically, the researchers divided students into two groups: students with GPAs of 3.25 or higher and students on academic probation. Students eligible to participate were randomly selected and invited to participate in the focus group appropriate to their academic status. Two common themes emerged from both groups: the inadequacy, clarity and accuracy of information regarding transfer policies and procedures and uncertainty about how to access information they needed. Further, Davies and Dickman suggested that students viewed the transfer process as being the shared responsibility of community colleges and four-year institutions

Flaga (2006) introduced a model to explain the dimensions and nature of the transfer experience and the transitional tasks in which new transfer students must engage. These dimensions included (a) learning resources; (b) connecting; (c) familiarity; (d) negotiating; and (e) integrating. Flaga conducted her research by interviewing new transfer students at various points throughout their first year at the four-year institution.

The first dimension of Flaga's work, learning resources, described transfer students' need to become familiar with the academic, financial, and social resources at the new institution. Students had to learn how to use these resources to gain information about the campus and the academic system. At this stage, students collected information about vital information they needed related to academics such as how to drop and add a

class, and how to get their transfer credits evaluated and posted, or other things such as how to pay their bills, obtain a parking permit, or get a meal plan.

Connecting was the process in which students attempted to develop relationships with faculty, advisors, and peers in their new environment. Once students started developing satisfying relationships, they began to feel connected. Feeling connected meant feeling as if they were actually part of the campus community and not standing on the outside looking in.

As students began to internalize the information they obtained and began to form connections, a sense of familiarity developed. In this stage, students started to feel as if they knew and understood how things worked. The students felt confident that they could direct another student to the proper place and knew the answer to questions about campus, academics, and student life.

Negotiating was the fourth dimension and it described the feeling transfer students had when students realized they knew how to get things done on campus and how they could get their needs met. Flaga summarized negotiating as the feeling students had that they knew “how to work the system” and “how things were done” at the new institution.

The fifth stage, integrating, was the change transfer students experienced when they felt that “everything was coming together.” Integrating was the culmination of a student feeling like he or she knew available resources, understood how the institution actually worked, and now felt a part of the university community.

Townsend and Wilson (2006a) conducted a qualitative study to explore the academic and social factors that facilitated the success of community college transfer students at a large, public, research-extensive university. The purpose of this study was to examine the perceptions of community college transfer students regarding their adjustment, transition, and fit at the receiving university. Because many of the existing studies focused on quantitative measures such as GPA and graduation rates, the researchers elected to use qualitative structured interviews to gain insight on the nature of the students' academic and social experiences at the university and their perceptions about how well they were transitioning to the four-year institution. A set of 14 questions were asked. Participants were initially asked closed-ended questions which were then followed up by an open-ended question that allowed for elaboration on topics such as transfer orientation and transfer student support services. Participants reflected on their academic and social experiences at the new institution and compared those experiences with their experiences at the community college. Townsend and Wilson found that students had varying perceptions about the level of academic support they felt they had received at the community college as compared to the university. Some of the students felt that their academic and social support networks were stronger at the community college. The nature and quality of faculty interactions, both inside and outside of the classroom, were seen as very different by students when asked to compare their interactions with faculty at the university as compared to the interactions they had with instructors at the two-year institution. Community college faculty were viewed as less intimidating and more approachable than university faculty.

Townsend and Wilson (2006a) noted community college transfer students may be coming from educational environments they perceived as very supportive from both a social and academic perspective. Students who did not experience this same level of support at the four-year institution felt less integrated into the academic and social fabric of the four-year institution. Townsend and Wilson recommended the design and delivery of orientation and transition programs for transfer students that integrated them academically and socially into the community at the four-year institution.

Using five distinct constructs and integrating the persistence and transfer literature, Alpern (2000) proposed a conceptual model to explain the factors that contributed to transfer students' perceptions of personal fit and level of satisfaction at the baccalaureate institution. Alpern selected and tested the following constructs for her model: (a) personal elements; (b) institutional influences; (c) baccalaureate program choice; (d) academic goals, preparation, and performance; and (e) social integration. Utilizing a purposeful sample of community college transfer students, Alpern conducted a survey regarding students' satisfaction at the baccalaureate institution. The survey data were analyzed and three significant direct effects on transfer student satisfaction and persistence emerged: (a) students' perceptions of the quality of information regarding financial aid; (b) the transfer process; and (c) the degree to which a student felt socially integrated at the four-year institution. Results of this study supported the need for pre-entry socialization and orientation practices, and information that facilitate a seamless transition for students transferring from the community college to the baccalaureate institution.

## Predictors of Academic Success at the Four-Year Institution

Researchers have concluded that some individual characteristics may predict the academic success and persistence of community college transfer students at the four-year institution. Some of these predictors included pre-transfer factors such as community college GPA (Townsend, McNerny, & Arnold, 1993), number of credits completed at the community college (Cejda, Rewey & Kaylor, 1998), level of involvement at the community college (Kinnick & Kemper, 1988), interaction with faculty outside of class (Graham & Hughes, 1994), and quality of instruction (McGrath & Spear, 1991).

The degree of success experienced by a transfer student at the four-year institution was also predicted by post-transfer factors. In a study of community college transfer students, Pascarella, Smart and Etherington (1986) found support for Tinto's (1975, 1993) model. Students with high levels of academic and social integration were found to be more likely to persist at the four-year institution.

Doyle (2006) found a relationship between the number of community college credits that transferred to the four-year institution and graduation rates. Using data collected from the 2001 Beginning Postsecondary Students survey, Doyle found that 82% of the students who transferred all of their community college course credits graduated within six years. For those students who had some of their credits accepted, only 42% earned the bachelor's degree within six years.

Piland (1995) reviewed the records of randomly selected transfer students who earned baccalaureate degrees. Findings from the study included a significant relationship between community college GPA and graduation rates as well as declaration of a major

upon entry at the four-year institution. Highly successful students graduated by a margin of two to one over marginally successful students

### Chapter Summary

This chapter presented a review of the relevant literature related to community college transfer students. Theoretical perspectives regarding student persistence were reviewed with a focus on Tinto's (1975, 1993) theory of student departure and Bandura's (1977, 1997) social cognitive theory. Specific attention was focused on the effects of attending a community college on baccalaureate attainment, individual and structural factors that impacted and predicted the transfer rate of community college transfer students, the transition process to the four-year institution, and the influence of transition experiences on student retention and academic performance at the four-year institution.

Key findings from the literature review included the following: (a) community colleges provided the entry point to postsecondary education for 50% of first-time college students; (b) community college students earned the baccalaureate degree at lower rates than native students; (c) transfer students experienced "transfer shock" in their transition to the four-year institution; and (d) the transition process to the four-year institution was complex and required transfer students to develop skills to successfully navigate their way through the new environment at the four-year institution.

## CHAPTER 3

### RESEARCH DESIGN AND METHODOLOGY

#### Introduction

The purpose of this research study was to investigate selected persistence indicators among community college transfer students during their first semester at a four-year institution. More specifically, the study examined differences in academic self-efficacy, sense of belonging, academic performance, and persistence between transfer students who participated in a transfer transition program at a selected community college and transfer students from the same community college who did not participate in the program. There were two primary objectives of this study. The first was to determine whether there were significant differences in academic self-efficacy, perceived cohesion, fall semester credits earned and fall semester GPR between the two groups. The second objective was to determine whether transfer transition program participant status predicted the likelihood that all of a student's community college course credits would transfer to the four-year institution and of a student persisting from the fall semester to the spring semester.

This chapter presents the research design, variables, and research questions used for this study. Further, descriptions of the sampling, data collection, preliminary data analysis, and final data analysis procedures employed for the study are also discussed in this chapter.

#### Research Design

Selection of an appropriate research design, data collection method and data

analysis procedure are dictated by the research questions (Kerlinger & Lee, 2000). A cross-sectional quantitative survey research design was selected for this study. A survey research design was appropriate because the problem the researcher sought to investigate, the low baccalaureate attainment rate of community college transfer students, could not be investigated experimentally (Creswell, 2003; Kerlinger & Lee, 2000). The research questions for this study required the collection and analysis of academic performance and persistence data as well as academic self-efficacy and perceived cohesion data. Academic performance and persistence data were accessed from an existing student records database at the four-year institution. Obtaining academic self-efficacy and perceived cohesion data required a different data collection method. For this reason, the survey research design was selected. Use of a survey research design is appropriate when collecting data regarding an individual's attitudes, beliefs or perceptions (Creswell, 2003; Kerlinger & Lee, 2000).

Surveys, specifically questionnaires, are widely used in social science research and provide a mechanism for the researcher to systematically collect data from a sample that can be analyzed and generalized to a population (Babbie, 2001; Creswell, 2003). In addition, Babbie (2001) suggested that survey research "is probably the best method available to the social researcher who is interested in collecting original data for describing a population that is too large to observe directly" (p. 240). According to Kerlinger and Lee (2000), "survey research is a useful fact finding tool for education and is best adapted to obtaining personal and social facts, beliefs, and attitudes."

The researcher for the present study designed the survey to collect data on academic self-efficacy and perceived cohesion and chose to administer the survey in a web-based format. Use of a web-based survey instrument was appropriate because it reduced the chance of non-coverage error. Because all new transfer students were provided with an active email address by the four-year institution, all students had the opportunity to complete the survey instrument. Further, a web survey was less costly than a mail or phone survey and afforded the opportunity to create built-in skip patterns that were invisible to the respondents.

Dillman's (2007) guidelines for creating web surveys were followed in the design and delivery of the survey. These guidelines included (a) utilizing the social exchange elements such as developing trust; (b) sending follow-up requests; (c) thanking respondents for their participation, and making completing the survey seem essential; (d) creating an easy-to-follow layout; (e) posing questions that were clear, understandable and worded as simply as possible; (f) making the survey easy to navigate; (g) using shading to help differentiate various questions within a category; and (h) consistently placing a radio button before each possible response.

### Research Questions

This study was guided by six primary research questions. The conceptual framework of the study, data collection, data analysis, findings, and conclusions of this study were based on the research questions. The questions were as follows:

1. Is there a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
2. Is there a significant difference in the levels of perceived cohesion between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
3. Is there is a significant difference in the number of credits earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
4. Is there is a significant difference in the semester GPRs earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
5. Does transfer transition program participant status significantly predict the likelihood that all of a student's community college course credits will transfer to the four-year institution?
6. Does transfer transition program participant status significantly predict the likelihood that a student will persist from fall to spring semester?

## Variables

The researcher gathered data on student demographic variables for this study as well as the variable proxies for academic and social integration, academic self-efficacy, and the outcome variable of persistence as described in the conceptual framework. Table 3.1 lists the variables and descriptors used for this study.

Table 3.1

*Demographic, Independent, and Dependent Variables*

Type of Variable	Variables	Descriptions
Demographic variables	Age	Age at time of survey administration
	Gender	Male = 1 Female = 2
	Ethnicity	White = 1 Black = 2 Other = 3
	Father's educational level	Did not graduate from high school = 1 Some high school = 2 Completed high school = 3 Bachelor's degree = 4 Master's degree = 5 Doctoral or professional degree = 6 Don't know = 7
	Mother's educational level	Did not graduate from high school = 1 Some high school = 2 Completed high school = 3 Bachelor's degree = 4 Master's degree = 5 Doctoral or professional degree = 6 Don't know = 7
Independent variable	Transfer transition program participant status	Nonparticipant = 0 Participant = 1
Dependent variables	Academic self-efficacy	Score between 0 – 72
	Perceived cohesion	Score between 0 – 36
	Fall credits earned	Scale between 0 – 21
	Fall GPR	Scale between 0 – 4
	Transferred credits	Not all credits transferred = 0 All credits transferred = 1
	Fall-to-spring persistence	Did not persist = 0 Persisted = 1

Demographic data were collected from the student records database at the four-year institution and the survey instrument. Age, gender, and ethnicity data were collected from the student records database. Parental educational attainment data were collected from the survey instrument.

Community college experience data were collected from student transcripts. Community college experience data included GPA and credits earned at the community college.

The independent variable was transfer transition program participant status. Participant status was determined using the student records database. Students were placed into one of two groups: those who participated in the transfer transition program and those who did not participate in the transfer transition program. Students were coded as either a participant or a nonparticipant.

The dependent variables were: (a) academic self-efficacy; (b) perceived cohesion; (c) fall 2008 credits earned; (d) fall 2008 GPR; (e) transferred credits; and (f) fall-to-spring persistence. The dependent variables were operationalized as academic integration, social integration, and academic self-efficacy. Fall semester GPR and transferred credits served as proxies for academic integration. Perceived cohesion proxied social integration. Academic self-efficacy and perceived cohesion data were collected from the survey instrument. Data for the other dependent variables were collected from the four-year institution's student records database.

### Sampling

The census sampling method was utilized for this study. When using census

sampling, the researcher identifies and surveys all known members of the population (Lodico, Spaulding, & Voegtle, 2006). The initial population for this study was comprised all new transfer students who matriculated at the four-year institution for the fall 2008 semester ( $N=946$ ). The four-year institution's student records database constituted the sampling frame. All students coded as a new transfer student in the four-year institution's student records database for the fall 2008 semester were populated into a cohort. The researcher invited all students in the fall 2008 cohort to complete the survey instrument utilized for this study.

Criteria for selecting the participants for the study were based on the objectives of the study. Students were eligible to be included in one of the samples if they: (a) matriculated at the selected community college in fall 2006 or fall 2007; (b) graduated from high school in 2006 or 2007; (c) matriculated at the four-year institution in fall 2008; and (d) completed the survey instrument. Application of the sampling criteria resulted in a maximum population of 239 students if all of the students completed the survey.

#### Description of Institutions

This study included the analysis of academic performance, persistence and self-reported survey data of transfer students from a selected community college who enrolled at a selected four-year institution in fall 2008. Because the transfer transition program sponsored by both institutions was central to this study, brief descriptions of both institutions are provided.

### *Community College*

The community college is a public two-year institution with an enrollment of approximately 5200 students. The college's Carnegie classification is Associates-Public Suburban-serving Single Campus (Assoc/Pub-S-SC) (Carnegie Foundation for the Advancement of Teaching, n.d.). The college has a university transfer program and offers associate degrees, diplomas or certificates in over 70 programs. Slightly more than half of the students (53.3%) were enrolled on a full-time basis and 70% of the students were under the age of 25.

### *Four-Year Institution*

The four-year institution is a selective, public, land-grant university with an enrollment of approximately 17,000 students. The university's Carnegie classification is Research University-High (RU/H) (Carnegie Foundation for the Advancement of Teaching, n.d.). The university has five academic colleges and offers over 70 undergraduate majors. Most undergraduate students were enrolled on a full-time basis (93.2%) and were under the age of 25 (96%).

### Instrumentation

The survey instrument was used to collect demographic data as well as data regarding perceptions of academic self-efficacy and perceived cohesion. Two existing scales, *Self-Efficacy for Broad Academic Milestones Scale* (SE-Broad) (Lent, Brown & Gore, 1997) and *Perceived Cohesion Scale* (Bollen & Hoyle, 1990), were utilized for the study.

*Self-Efficacy for Broad Academic Milestones Scale*

The *Self-Efficacy for Broad Academic Milestones Scale* (SE-Broad) (Lent et al., 1997) was selected and used to measure academic self-efficacy. Researchers have empirically linked academic self-efficacy to academic performance and persistence (Lent, et al, 1984, 1986; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). Permission to use the SE-Broad was granted to the researcher and is documented in Appendix A. The SE-Broad instrument was comprised of 12 items representing various academic outcomes or milestones. Students rated their levels of confidence for achieving these academic outcomes. Broad descriptions of the items on the scale are displayed in Table 3.2.

Table 3.2

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

Item number	Short description of item
1	Written communication courses
2	Arts and humanities courses
3	Natural and mathematical sciences
4	Social and behavioral sciences
5	Academic performance in two years
6	Academic performance in three years
7	Change majors
8	Academic major
9	Excel next term
10	Excel two terms
11	Excel three terms
12	Graduate

Each item utilized a seven-point Likert scale with responses that indicated varying levels of confidence. A score of zero indicated no confidence at all and a score of six indicated complete confidence. The scores for the 12 items were totaled to create a total academic self-efficacy score. The lowest possible total score was zero and the highest possible score was 72. A higher total score indicated a higher level of academic self-efficacy. The higher the total score, the greater the level of confidence a student felt to successfully complete an academic-related behavior.

Results from prior administrations of this scale in the literature indicated the instrument's acceptable reliability and predictive validity. Lent et al. (1997) and Elias and Loomis (2000) reported coefficient alphas between .88 and .94 for the SE-Broad. These findings indicated sufficient reliability. For the present study, the Cronbach alpha was .92 for the *SE-Broad Scale* scores (Appendix B). In addition, the instrument also had sufficient predictive validity as findings from multiple research studies suggested a positive relationship between academic self-efficacy and grades earned in college (Bong 2001; Hsieh et al., 2007; Lent, et al., 1984, 1986; Multon et al., 1991; Pajares, 1996)

#### *Perceived Cohesion Scale*

The *Perceived Cohesion Scale* (Bollen & Hoyle, 1990) was used to measure students' sense of belonging at the four-year institution and served as a proxy for social integration. Perceived cohesion was defined as sense of belonging and is related to social integration, which was theorized to impact persistence (Tinto, 1975, 1993). The *Perceived Cohesion Scale* was freely available. The authors' published consent to use the scale is found in Appendix C. The six-item scale measures the sense of belonging a respondent feels to the four-year institution community and the respondent's feelings of morale associated with belonging to the four-year institution community. Broad descriptions of the scale items are displayed in Table 3.3.

Table 3.3

*Items on the Perceived Cohesion Scale*

Item number	Short description of item
1	Sense of belonging
2	Enthusiastic
3	Member
4	Happy
5	Part of
6	Best school

Each item utilized a seven-point Likert scale with responses of varying levels of disagreement or agreement. A score of zero indicated strong disagreement about feeling a sense of belongingness or high morale and a score of six indicated strong agreement about feeling a sense of belongingness or high morale. Scores for each of the six items were totaled to create a total perceived cohesion score. The lowest possible total score was zero and the highest possible score was 36. A higher total score indicated a higher sense of belongingness and morale.

Results from Bollen and Hoyle's (1990) study suggested that this scale had satisfactory validity and reliability. With an  $r = .92 - .96$  between sense of belonging and feelings of morale, the *Perceived Cohesion Scale* evidences satisfactory construct validity. In a test of the *Perceived Cohesion Scale*, Chin, Salisbury, Pearson, and Stollak (1999) reported a correlation of .92 between the two constructs. Additionally, Chin et al.

reported Cronbach alphas of .95 for the belongingness construct and .87 for the morale construct. The Cronbach alpha for the present study was .92 for the *Perceived Cohesion Scale* scores (Appendix D).

#### *Demographic and Community College Experience Data*

Demographic data such as gender, age, and parental level of education were collected on the survey instrument. Ethnicity and transferred credits data were collected from the four-year institution's student records database. Community college GPA and credits earned were collected from student transcripts.

#### Data Collection

Prior to the data collection process, the researcher successfully completed training modules on conducting research on human subjects. The researcher secured approval to conduct the study from the four-year institution's office of research compliance's institutional review board (Appendix E). The researcher also obtained permission to access the students' records database and student transcripts.

To collect the data needed to complete this study, the researcher utilized both primary and secondary sources of data. Primary data were collected using the four-year institution's student records database and individual student transcripts. The following primary data were collected from the student records database or student transcripts: (a) transfer transition program participant status; (b) community college GPA; (c) community college credits earned; (d) fall 2008 credits earned; (e) fall 2008 GPR; (f) transferred credits; (g) fall-to-spring persistence; and (h) ethnicity.

Selected primary and secondary data were collected from the web-based survey instrument. Primary data collected were (a) age; (b) gender; and (c) parental educational attainment. Secondary data collected from the survey instrument included students' academic self-efficacy and perceived cohesion scores.

The procedural steps outlined in Dillman's (2007) total design method provided direction for the survey data collection process. The first step, prior to the actual administration of the survey, was to send all participants an electronic announcement about the survey. A copy of the announcement used for the study is provided in Appendix F. The announcement was designed to build social trust and goodwill between the researcher and the respondents. Following the announcement, the second step was to send all participants an invitation to complete the survey that included a link to the survey instrument and a statement explaining that participation in the survey was voluntary and could be discontinued at any time. The participants were also informed that completing the survey presented minimal risks. The invitation also included an incentive to complete the survey. A copy of the invitation is shown in Appendix G. Follow up communications were sent to encourage nonrespondents to complete the survey and to thank respondents who completed the survey.

Data collection took place over a 30-day period in October and November, 2008, and over a 10-day period in January 2009. The instrument was sent a second time to all nonrespondents in January 2009 in an attempt to increase the overall survey response rate. The survey was closed at the end of January 2009.

### *Fall 2008 Data Collection*

In October 2008, a link to the survey instrument was sent to the unique email address of every new transfer student in the fall 2008 transfer student cohort ( $N=946$ ). The researcher selected this timeframe because it allowed sufficient time for the participants to (a) experience the academic and social environment of the four-year institution and (b) construct a frame of reference that enabled them to respond to the questions on the instrument. As the survey data were collected, a unique identifier was generated for each survey respondent. This provided the researcher with the mechanism for matching the respondent's survey data with the respondent's fall 2008 academic performance and spring 2009 persistence data. Because of the Thanksgiving holiday break and administration of final examinations, data collection concluded at the end of November. Table 3.4 presents the fall 2008 survey response rate data for all transfer students.

Table 3.4

#### *Fall 2008 Survey Response Rates of All Transfer Students*

	<i>N</i>	%
Completed survey	474	50.1%
Did not complete survey	472	49.9%
Total students	946	100%

At the end of November 2008, 475 students started the survey and 474 students completed the survey for an overall response rate of 50.1%. One student opened the

survey but failed to respond to any of the survey questions. The student was counted as a nonrespondent.

Response rates by students' previous institution are also provided. Table 3.5 presents the fall 2008 survey response rates of transfer students from the selected community college as compared to transfer students who did not previously attend the selected community college.

Table 3.5

*Fall 2008 Survey Response Rates of Transfer Students from the Selected Community College and Transfer Students who did not Previously Attend the Selected Community College*

	Students who attended selected community college		Students who did not attend selected community college		Total transfer students	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Completed survey	135	52.1%	339	49.3%	474	50.1%
Did not complete survey	124	47.9%	348	50.7%	472	49.1%
Total students	259	100%	687	100%	946	100%

The survey was sent to 259 students from the selected community college and 687 transfer students who did not previously attend the selected community college. The response rate was higher for students who previously attended the selected community college (52.1%) as compared to the students who did not previously attend the selected community college (49.3%).

Additional details regarding respondents from the selected community college are provided in the next table. Table 3.6 presents the fall 2008 survey response rates of students from the selected community college by transfer transition program participant status.

Table 3.6

*Fall 2008 Survey Response Rates of Transfer Students from the Selected Community College by Transfer Transition Program Participant Status*

	Transfer transition program participant		Transfer transition program nonparticipant		Total transfer students from the selected community college	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Completed survey	100	56.8%	35	42.2%	135	52.1%
Did not complete survey	76	43.2%	48	57.8%	124	47.9%
Total students	176	100%	83	100%	259	100%

The survey was sent to 176 transfer transition participants and 83 nonparticipants. The survey was completed by 100 participants (56.8%) and 35 nonparticipants (42.2%) for an overall response rate of 52.1%.

*Spring 2009 Data Collection*

To increase response rates, the survey was resent in January 2009 to 436 transfer students who (a) first enrolled at the four-year institution in fall 2008; (b) were enrolled in spring 2009; and (c) did not complete the survey during the fall 2008 semester. The

survey was not resent in January 2009 to 510 students who (a) completed the survey during the fall 2008 semester ( $n=474$ ) or (b) were enrolled during the fall 2008 semester but were not enrolled at the beginning of the spring 2009 semester ( $n=36$ ). Table 3.7 presents the spring 2009 survey response rates for all fall 2008 nonrespondent transfer students who were enrolled during the fall 2008 semester and remained enrolled for the spring 2009 semester.

Table 3.7

*Spring 2009 Survey Response Rates of all Fall 2008 Nonrespondents*

	<i>N</i>	%
Sent the survey and completed survey	103	21.8%
Sent the survey and did not complete survey	333	70.6%
Not sent the survey and did not complete survey	36	7.6%
Total	472	100%

At the end of the fall 2008 semester, 472 nonrespondents were identified. The survey was not sent to 36 transfer students who were previously enrolled in fall 2008 because they were no longer enrolled at the beginning of the spring 2009 semester. The survey was sent to the remaining 436 students whose first enrollment was in fall 2008 and who returned to the four-year institution for the spring 2009 semester. Of the 436 students sent the survey, 21.8% of the students completed the survey.

The spring 2009 survey response rates of fall 2008 nonrespondents from the selected community college and fall 2008 nonrespondents who did not previously attend the selected community college are compared next. Table 3.8 shows the response rates.

Table 3.8

*Spring 2009 Survey Response Rates of Fall 2008 Nonrespondents from the Selected Community College and Fall 2008 Nonrespondents who did not Previously Attend the Selected Community College*

	Students who attended selected community college		Students who did not attend selected community college		Total transfer students	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Sent the survey and completed survey	26	21%	77	22.1%	103	21.8%
Sent the survey and did not complete survey	93	75%	240	69%	333	70.6%
Not sent the survey and did not complete the survey	5	4%	31	8.9%	36	7.6%
Total students	124	100%	348	100%	472	100%

The survey was sent to 119 students from the selected community college and 317 students who had not previously attended the selected community college. The survey was not sent to 36 students who were enrolled in fall 2008 because they were not enrolled at the beginning of the spring 2009 semester. The survey was completed by 26 students from the selected community college and 77 students who did not previously attend the selected community college.

Additional details regarding spring 2009 respondents from the selected community college are provided in the next table. Table 3.9 displays the spring 2009 survey response rates of students from the selected community college by transfer transition program participant status.

Table 3.9

*Spring 2009 Response Rates of Fall 2008 Nonrespondents from the Selected Community College by Transfer Transition Program Participant Status*

	Transfer transition program participant		Transfer transition program nonparticipant		Total transfer students from the selected community college	
	N	%	N	%	N	%
Sent the survey and completed survey	14	18.4%	12	25%	26	21%
Sent the survey and did not complete survey	61	80.3%	32	66.7%	93	75%
Not sent the survey and did not complete the survey	1	1.3%	4	8.3%	5	4%
Total students	76	100%	48	100%	124	100%

The survey was sent to 75 transfer transition program participants and completed by 14 students. The survey was not sent to one transfer transition program participant because the student was not enrolled at the beginning of the 2009 semester. The survey was sent to 44 transfer transition program nonparticipants and completed by 12 students.

The survey was not sent to four transfer transition program nonparticipants because those students were not enrolled at the beginning of the spring 2009 semester.

*Fall 2008 and Spring 2009 Data Collection*

This section provides a summary of the survey data collected during fall 2008 and spring 2009. Table 3.10 presents the fall 2008, spring 2009, and combined survey response rates for all transfer students.

Table 3.10

*Fall 2008, Spring 2009, and Combined Survey Response Rates of all Transfer Students*

	Fall 2008		Spring 2009		Overall	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Sent the survey and completed survey	474	50.1%	103	21.8%	577	61%
Sent the survey and did not complete survey	472	49.9%	333	70.6%	333	35.2%
Not sent the survey	0	0%	36	7.6%	36	3.8%
Total students	946	100%	472	100%	946	100%

In fall 2008, the survey was sent to 946 transfer students and 474 students completed the survey. At the start of the spring 2009 semester, the survey was resent to the 436 students who (a) did not complete the fall 2008 survey and (b) were enrolled for the spring 2009 semester. The survey was completed by 103 students in spring 2009. A total of 577 students completed the survey in either fall 2008 or spring 2009 for a combined response rate of 61%.

The following table displays survey response rates for all transfer students. Table 3.11 presents the fall 2008, spring 2009, and combined survey response rates for all transfer students by previous institution attended.

Table 3.11

*Fall 2008, Spring 2009, and Combined Survey Response Rates of Transfer Students who Attended the Selected Community College and Transfer Students who did not Attend the Selected Community College*

	Attended selected community college						Did not attend selected community college					
	Fall 2008		Spring 2009		Combined		Fall 2008		Spring 2009		Combined	
	N	%	N	%	N	%	N	%	N	%	N	%
Sent the survey and completed survey	135	52.1%	26	21%	161	62.2%	339	49.3%	77	22.1%	416	60.6%
Sent the survey and did not complete survey	124	47.9%	93	75%	93	35.9%	348	50.7%	240	69%	240	34.9%
Not sent the survey and did not complete the survey	0	0%	5	4%	5	1.9%	0	0%	31	8.9%	31	4.5%
Total students	259	100%	124	100%	259	100%	687	100%	348	100%	687	100%

The survey was sent to 259 students who attended the selected community college. The survey was completed by 135 students in the fall and 26 students in the spring for a combined total of 161 respondents. The survey was sent to 687 students who did not attend the selected community college. The survey was completed by 339 students in the fall and 77 students in the spring for a combined total of 416 respondents. The overall response rate was 62.2% for students who attended the selected community college and 60.6% for students who did not attend the selected community college.

The next table provides data regarding the combined survey response rates for all transfer students from the selected community college by transfer transition program status. Table 3.12 presents the fall 2008, spring 2009, and combined survey response rates for all transfer students from the selected community college by transfer transition program status.

Table 3.12

*Fall 2008, Spring 2009, and Combined Survey Response Rates of Transfer Students from the Selected Community College by Transfer Transition Program Participant Status*

	Transfer transition program participants						Transfer transition program nonparticipants					
	Fall 2008		Spring 2009		Combined		Fall 2008		Spring 2009		Combined	
	N	%	N	%	N	%	N	%	N	%	N	%
Sent the survey and completed survey	100	56.8%	14	18.4%	114	64.8%	35	42.2%	12	25%	47	56.6%
Sent the survey and did not complete survey	76	43.2%	61	80.3%	61	34.7%	48	57.8%	32	66.7%	32	38.6%
Not sent the survey and did not complete the survey	0	0%	1	1.3%	1	.5%	0	0%	4	8.3%	4	4.8%
Total students	176	100%	76	100%	176	100%	83	100%	48	100%	83	100%

The survey was sent to 259 students from the selected community college. Of the 259 students, 176 participated in the transfer transition program and 83 did not participate in the transfer transition program. The survey was completed by 100 transfer transition program participants in fall 2008 and 14 transfer participants in spring 2009 resulting in an overall response rate of 64.8% for transfer transition program participants. Of the 83

transfer transition program nonparticipants, 35 students completed the survey in fall 2008 and 12 students completed the survey in spring 2009 for a combined response rate of 56.6% for transfer transition program nonparticipants.

The second administration of the survey closed at the end of January 2009. Survey response data were reviewed to determine which of the 239 students who met the initial sampling criteria also met the final sampling criteria of completing the survey. Students were included in the preliminary sample if they (a) graduated from high school in 2006 or 2007; (b) matriculated at the selected community college in fall 2006 or fall 2007; and (c) matriculated at the four-year institution in fall 2008. Table 3.13 presents the survey response rates of the 239 students initially eligible to be included in the study.

Table 3.13

*Overall Survey Response Rates of Students Meeting Initial Sampling Criteria*

	<i>N</i>	%
Completed survey	139	58.2%
Did not complete survey	100	41.8%
Total students	239	100%

Of the 239 students eligible to be included in the study sample, the overall response rate was 58.2%. Review of the survey response data resulted in a final sample of 139 students who met all of the criteria for inclusion in the study sample.

The next table provides additional details regarding the study sample. Table 3.14 presents the transfer transition program participant status of the 139 students who met all of the criteria required for inclusion in the study sample.

Table 3.14

*Transfer Transition Program Participant Status of Students Meeting the Sampling Criteria*

	<i>N</i>	% of sample
Participant	114	82%
Nonparticipant	25	18%
Total students	139	100%

Of the students eligible to be in the sample, 114 students were transfer transition program participants and 25 were nonparticipants. Transfer transition program participants comprised 82% of the sample.

Preliminary Data Analysis

The objectives of the study were to investigate differences in academic self-efficacy, perceived cohesion, academic performance, and persistence among new transfer students from the selected community college. These objectives dictated that the sample be delimited to students who (a) graduated from high school in 2006 or 2007; (b) matriculated at the community college as a first-time freshman in fall 2006 or fall 2007; (c) matriculated at the four-year institution in fall 2008; and (d) completed the survey. Application of these criteria resulted in a sample of 139 students. The sample included

transfer transition program participants ( $n=114$ ) and transfer transition program nonparticipants ( $n=25$ ).

Prior to analyzing the data, data preparation steps outlined by Sproull (2002) were followed. These steps included (a) assigning a unique identifier for each element of the sample; (b) coding the data; and (c) examining the data to ensure that it met the assumptions of the statistical tests the researcher planned to use in the analysis of the data and to look for problems such as missing data or unanticipated results.

Units of analysis for this study were individual students and transfer transition program participant status. Transfer transition program participant status, previous institution, and community college experience data were verified by reviewing student records in the student records database and individual student transcripts. These data were entered into an Excel database. Data collected from participants' responses on the survey instrument as well as their fall 2008 GPR, fall 2008 credits earned, transferred credits, and spring 2009 semester enrollment status were also entered into the Excel database and analyzed using SPSS 16.0 for Microsoft Windows. All information that could uniquely identify individual students were removed from the data set.

After all data were entered into the Excel database, preliminary data analyses were conducted. These analyses included: (a) checking for missing data; (b) testing data for normality and constant variance assumptions; and (c) testing for differences in academic self-efficacy and perceived cohesion data between the fall 2008 and spring 2009 survey respondents.

### *Missing Data*

After all data were entered, the researcher searched for missing survey data. There were no missing perceived cohesion data. Five respondents failed to respond to one of the twelve SE-Broad items. All five of the respondents were transfer transition program participants. One student failed to respond to the “academic performance in two years” item, one student failed to respond to the “academic performance in three years” item, two students failed to respond to the “change majors” item and one student failed to respond to the “academic major” item. A seven-point Likert scale was utilized for each SE Broad item. A score of zero indicated no confidence at all and a score of six indicated complete confidence. The lowest possible combined SE-Broad score was zero and the highest possible combined score was 72. An overall academic self-efficacy score was generated for the respondents who responded to all of the SE-Broad items by totaling the scores for the 12 SE-Broad items. For the five respondents who failed to respond to all 12 SE-Broad items, an overall academic self-efficacy score was generated by totaling the scores of the 11 SE-Broad items to which they responded. In failing to respond to one of the items, the possible combined academic self-efficacy score was reduced by a maximum of six points. With 12 items on the scale and 139 respondents, there were 1668 total possible item responses. The missing data constituted .3%% of the SE-Broad item data.

The academic self-efficacy data were tested for normality and constant variance to determine if the assumptions of the *t*-test were met. Assumptions for the *t*-test include: (a) random sampling; (b) data are normally distributed; (c) equal variances and (d)

independent observations (Grimm, 1993). The data were determined to be normally distributed (Appendix H). An independent samples *t*-test was appropriate to use because the researcher wanted to compare the means of two independent samples to determine if there were significant differences in the means.

Independent-samples *t*-tests were conducted to determine whether there were significant differences in academic self-efficacy between: (a) respondents who completed all of the SE-Broad items ( $n=134$ ) and respondents who did not complete all of the SE-Broad items ( $n=5$ ); (b) transfer transition program participants who completed all of the SE-Broad items ( $n=109$ ) and transfer transition program participants who did not complete all of the SE-Broad items ( $n=5$ ); and (c) transfer transition program participants who did not complete all of the SE-Broad items ( $n=5$ ) and transfer transition program nonparticipants who completed all of the SE-Broad items ( $n=25$ ).

For the first independent samples *t*-test, students were placed into two groups, the first group was populated with students who completed all of the SE-Broad items ( $n=134$ ) and the second group was comprised of students who did not complete all of the SE-Broad items ( $n=5$ ). An independent samples *t*-test was conducted to determine if there were significant differences in the levels of academic self-efficacy between the groups.

Academic self-efficacy data were analyzed using SPSS 16.0 for Microsoft Windows to determine if there were differences in the levels of academic self-efficacy between respondents with no missing SE-Broad items and respondents with one missing SE-Broad item. Table 3.15 presents the mean level of academic self-efficacy for both groups with standard deviations, difference in means, 95% confidence interval and level

of significance at  $p < .05$ .

Table 3.15

*Comparison of Mean Levels of Academic Self-Efficacy Between Respondents with no Missing SE-Broad Items and Respondents with one Missing SE-Broad Item*

	Academic self-efficacy	
	Mean (SD)	Difference (95% CI)
No missing SE-Broad items	53.22 (10.14)	4.62 (-13.68 – 4.45)
One missing SE-Broad item	48.60 (7.02)	

Test of significance:  $t(137) = -1.01, p = .32$

An independent-samples  $t$ -test was performed comparing the mean levels of academic self-efficacy between the respondents with no missing SE-Broad responses ( $M = 53.22, SD = 10.14$ ) with that of the respondents with one missing SE-Broad response ( $M = 48.60, SD=7.02$ ). The alpha level was .05. The results of this test,  $t(137) = -1.01, p = .32$ , indicated that the difference between these groups was not statistically significant. These results suggested that the overall academic self-efficacy scores for students who failed to complete one of the SE-Broad items were not significantly different than the academic self-efficacy scores of students who completed all of the SE-Broad items.

For the second independent-samples  $t$ -test, students were placed into two groups, the first group was populated with transfer transition participants who completed all of

the SE-Broad items ( $n=109$ ) and the second group was comprised of transfer transition participants who did not complete all of the SE-Broad items ( $n=5$ ). Academic self-efficacy data for the two samples were normally distributed (Appendix I).

Academic self-efficacy data were analyzed using SPSS 16.0 for Microsoft Windows to determine if there were differences in the levels of academic self-efficacy between transfer transition program participants with no missing SE-Broad items and transfer transition program participants with one missing SE-Broad item. Table 3.16 presents the mean level of academic self-efficacy for both groups with standard deviations, difference in means, 95% confidence interval and level of significance at  $p < .05$ .

Table 3.16

*Comparison of Mean Levels of Academic Self-Efficacy Between Transfer Transition Program Participants with no Missing SE-Broad Items and Transfer Transition Program Participants with one Missing SE-Broad Item*

	Academic self-efficacy	
	Mean (SD)	Difference (95% CI)
No missing SE-Broad items	52.91 (10.08)	4.31 (-13.36 – 4.74)
One missing SE-Broad item	48.60 (7.02)	

Test of significance:  $t(112) = -.94, p = .35$

An independent-samples  $t$ -test was performed comparing the mean levels of

academic self-efficacy between the transfer transition program participants with no missing SE-Broad responses ( $M = 52.91$ ,  $SD = 10.08$ ) with that of the transfer transition program participants with one missing SE-Broad response ( $M = 48.60$ ,  $SD=7.02$ ). The alpha level was .05. The results of this test,  $t(112) = .94$ ,  $p = .35$ , indicated that the difference between these groups was not statistically significant. These results suggested that the overall academic self-efficacy scores for transfer transition program participants who failed to complete one of the SE-Broad items were not significantly different than the academic self-efficacy scores of transfer transition program participants who completed all of the SE-Broad items.

For the third independent samples *t*-test, students were placed into two groups, the first group was populated with transfer transition nonparticipants who completed all of the SE-Broad items ( $n=25$ ) and the second group was comprised of transfer transition participants who did not complete all of the SE-Broad items ( $n=5$ ). Academic self-efficacy data for the two samples were normally distributed. (Appendix J).

Academic self-efficacy data were analyzed using SPSS 16.0 for Microsoft Windows to determine if there were differences in levels of academic self-efficacy between transfer transition program nonparticipants with no missing SE-Broad items and transfer transition program participants with one missing SE-Broad item. Table 3.17 presents the mean level of academic self-efficacy for both groups with standard deviations, difference in means, 95% confidence interval and level of significance at  $p < .05$ .

Table 3.17

*Comparison of Levels of Academic Self-Efficacy Between Transfer Transition Program Nonparticipants with no Missing SE-Broad Items and Transfer Transition Program Participants with one Missing SE-Broad Item*

	Academic self-efficacy		
	Mean (SD)	Difference (95% CI)	<i>p</i>
No missing SE-Broad items	54.56 (10.51)	5.96 (-16.08 – 4.16)	.24
One missing SE-Broad item	48.60 (7.02)		

Test of significance:  $t(28) = 1.21, p = .24$

An independent-samples *t*-test was performed comparing the mean levels of academic self-efficacy between the transfer transition program nonparticipants with no missing SE-Broad responses ( $M = 54.56, SD = 10.51$ ) with that of the transfer transition program participants with one missing SE-Broad response ( $M = 48.60, SD=7.02$ ). The alpha level was .05. The results of this test,  $t(28) = 1.21, p = .24$ , indicated that the difference between these groups was not statistically significant. These results suggested that the overall academic self-efficacy scores for transfer transition program participants who failed to complete one of the SE-Broad items were not significantly different than the academic self-efficacy scores of transfer transition program nonparticipants who completed all of the SE-Broad items.

The missing data constituted .3%% of the SE-Broad item data. Further, the results of the three independent samples *t*-tests showed no significant differences in levels of academic self-efficacy between: (a) respondents who completed all SE-Broad items ( $n=134$ ) and respondents who failed to complete one SE Broad item ( $n=5$ ); (b) transfer transition program participants who completed all SE-Broad items ( $n=109$ ) and transfer transition program participants who failed to complete one SE Broad item ( $n=5$ ); and (c) transfer transition program nonparticipants who completed all SE-Broad items ( $n=25$ ) and transfer transition program participants who failed to complete one SE-Broad item ( $n=5$ ). For these reasons, the missing data were assumed to be missing completely at random (MCAR) (Allison, 2002). This assumption was made because there were no significant differences between the two groups with regard to the variables of interest in the study (Allison, 2002).

#### *Test for Normality and Constant Variance*

The academic self-efficacy, perceived cohesion, fall semester credits earned, and fall semester GPR data from the transfer transition participant and transfer transition nonparticipant samples were tested to determine if the data met the normality and constant variance assumptions required for using the *t*-test. The academic self-efficacy data were determined to be normally distributed (Appendix K). The perceived cohesion (Appendix L), fall semester credits earned (Appendix M), and fall semester GPR data (Appendix N) were not normally distributed.

When the researcher plans to use a *t*-test to analyze data but is unable to because of violations of the assumptions of normality and constant variance, a Mann Whitney *U*

test is commonly used (Cohen & Lea, 2004). The test is used when the scores of two independent groups can be ranked on the same variable (Blaikie, 2003). The test for significance for the Mann Whitney  $U$  is whether the scores from the two samples came from the same underlying distribution or from different distributions. Significant results occur when the distributions of the two groups differ in shape or spread (Cohen & Lea, 2004). The  $Z$ -score is used to determine if there is a significant difference in the ranks of scores between the two groups (Blaikie, 2003). Because the perceived cohesion, fall semester credits and fall semester GPR data were not normally distributed, a Mann Whitney  $U$  test was used.

#### *Comparison of Early (Fall 2008) and Late (Spring 2009) Respondent Data*

Because the survey was administered during two discrete time periods, there was the possibility of significant differences in the levels of academic self-efficacy and perceived cohesion between the early and late survey respondents. The academic self-efficacy and perceived cohesion data collected from the fall 2008 and spring 2009 respondents were tested for normality and constant variance. The researcher determined that academic self-efficacy data were normally distributed (Appendix O) and perceived cohesion data were not normally distributed (Appendix P). These data were further analyzed using an independent samples  $t$ -test to determine if there were significant differences in the mean levels of academic self-efficacy between fall 2008 and spring 2009 survey respondents and a Mann Whitney  $U$  test to determine if there were significant differences in the median ranks of perceived cohesion scores.

Academic self-efficacy data were analyzed using SPSS 16.0 for Microsoft

Windows to determine if there were differences in the levels of academic self-efficacy between early and late respondents. Table 3.18 presents the mean level of academic self-efficacy for early and late respondents with standard deviations, difference in means, 95% confidence interval and level of significance at  $p < .05$ .

Table 3.18

*Comparison of Mean Levels of Academic Self-Efficacy Between Early (Fall 2008) Survey Respondents and Late (Spring 2009) Survey Respondents*

	Academic self-efficacy	
	Mean (SD)	Difference (95% CI)
Fall 2008 responses	52.35 (9.79)	4.85 (.09 - 9.60)
Spring 2009 responses	57.20 (10.91)	

Test of significance:  $t(137) = 2.02, p = .05$

An independent-samples  $t$ -test was performed comparing the mean academic self-efficacy level of the fall 2008 respondents ( $M = 52.35, SD = 9.79$ ) with that of the spring 2009 respondents ( $M = 57.20, SD = 10.91$ ). The alpha level was .05. The results of this test,  $t(137) = 2.02, p = .05$ , indicated that the difference between these groups was statistically significant. These results suggested that the differences in academic self-efficacy between students who completed the survey in fall 2008 and spring 2009 were significant.

Perceived cohesion data were analyzed using SPSS 16.0 for Microsoft Windows. Table 3.19 presents the medians and median ranks for perceived cohesion for early and

late respondents with the Z-score and level of significance at  $p < .05$ .

Table 3.19

*Comparison of Median Levels of Perceived Cohesion Between Early (Fall 2008) Survey Respondents and Late (Spring 2009) Survey Respondents*

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	Perceived Cohesion	
	Median	Median ranks
Fall 2008 respondents	31.0	70.55
Spring 2009 respondents	31.0	66.75

---

Test of significance:  $Z = -.39, p = .69$

---

A Mann Whitney  $U$  test was conducted to compare the distributions of perceived cohesion scores of fall 2008 and spring 2009 survey respondents. The distribution of the ranks of perceived cohesion scores for fall 2008 and spring 2009 survey respondents did not differ significantly ( $Z = -.39, p = .69$ ). These results suggest that the perceived cohesion scores of fall 2008 and spring 2009 responses did not come from different distributions and that there was not a significant difference in the levels of perceived cohesion between of fall 2008 and spring 2009 survey respondents.

#### Data Analysis

The research questions for this study were analyzed using an independent samples  $t$ -test , Mann-Whitney  $U$  tests, and logistic regression. An alpha level of .05 was used for all statistical tests. Descriptive statistics were computed for the demographic variables of the sample.

An independent-samples *t*-test was conducted to test the difference of the means of two independent samples. An independent samples *t*-test was appropriate to use because the researcher wanted to compare the means of two independent samples to determine if there were significant differences in the means. Assumptions for the *t*-test include (a) random sampling; (b) data are normally distributed; (c) equal variances and (d) independent observations, (Grimm, 1993). An independent samples *t*-test was conducted to determine if there was a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program.

The Mann Whitney *U* test was conducted to determine if there were significant differences in the median ranks of perceived cohesion scores, fall 2008 credits earned and fall 2008 GPR. As stated earlier, the most common use of the Mann Whitney *U* is when the researcher planned to use an independent samples *t*-test to analyze data but was unable to because of violations of the assumptions of normality and constant variance (Cohen & Lea, 2004). The test is used when the scores of two independent groups can be ranked on the same variable (Blaikie, 2003). The test for significance for the Mann Whitney *U* test is whether the scores from the two samples came from the same underlying distribution or from different distributions. Significant results occur when the distributions of the two groups differ in shape or spread (Cohen & Lea, 2004). Thus, the *Z*- statistic was again used to determine if there was a significant difference in the median ranks of perceived cohesion scores, fall 2008 credits earned, and fall 2008 GPR between the two groups (Blaikie, 2003).

Logistic regression was used to determine whether transfer transition program participant status was a significant predictor of the likelihood that all of a student's community college credits would transfer to the four-year institution and of the likelihood that a student would persist from the fall 2008 to spring 2009 semester. The use of logistic regression was appropriate because the researcher wished to study the relationship between one or more predictor variables and a dichotomous categorical outcome variable (Peng & So, 2002). In the case of this study, transfer transition program participant status was the categorical predictor variable and transferred course work and persistence were the dichotomous categorical outcome variables.

#### Ethical Considerations

Approval to conduct this study was obtained from the office of research compliance's institutional review board (IRB) at the four-year institution. Because the researcher linked participants' responses to the survey instrument and to GPR and persistence data, participants were identifiable. As a result, the researcher had to ensure that proper precautions were taken to safeguard the privacy and confidentiality of all participants. All respondents' data were maintained on the researcher's secure computer in a password protected file.

Additionally, for the sake of transparency and credibility, the researcher's full-time job entailed working directly with the student population under investigation. Thus, the researcher acknowledged the potential for personal biases to impact all aspects of the study. Every effort was made to control these biases for the fullest extent possible in the design and analysis of this study.

## Chapter Summary

This chapter provided an explanation of the research methodology, data collection, and data analysis procedures employed for this study. A cross-sectional survey research design was utilized to collect the data for the study. Data were collected from students who participated in the transfer transition program at the selected community college and from students who did not participate in the transfer transition program at the selected community college. Data from the SE-Broad and Perceived Cohesion items were tested for reliability using Cronbach's alpha. For the present study, the Cronbach alpha was .92 for the SE-Broad and .92 for the Perceived Cohesion scale. Preliminary data analysis were conducted to (a) check for missing data; (b) test the data for the assumptions of normality and constant variance; and (c) test for differences in levels academic self-efficacy and perceived cohesion between the fall 2008 and spring 2009 survey respondents. Chapter Four presents descriptive statistics of the sample and results of the data analysis for the study.

## CHAPTER 4

### ANALYSIS OF THE DATA

#### Introduction

This study focused on the constructs of academic self-efficacy, perceived cohesion, and academic performance as they related to the transition and persistence of new transfer students at a four-year institution. More specifically, the purpose of this research study was to investigate selected persistence indicators among community college transfer students during their first semester at the four-year institution. Two groups of students from a selected community college- those who participated in a transfer transition program and those who did not participate in the transfer transition program were the study participants. Six research questions guided the study:

1. Is there a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
2. Is there a significant difference in the levels of perceived cohesion between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
3. Is there is a significant difference in the number of credits earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

4. Is there is a significant difference in the semester GPR earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
5. Does transfer transition program participant status significantly predict the likelihood that all of a student's community college course credits will transfer to the four-year institution?
6. Does transfer transition program participant status significantly predict the likelihood that a student will persist from fall to spring semester?

This chapter presents the results for each of the questions as well as a description of the sample and descriptive statistics. The descriptive statistics are presented first followed by the results for the six research questions.

## Descriptive Statistics

### *Description of the Sample*

The survey instrument was sent to all new transfer students in fall 2008 and to nonrespondents in spring 2009. Criteria for selection of the sample for this study included transfer students who (a) graduated from high school in 2006 or 2007; (b) matriculated at the community college as a first-time freshman in fall 2006 or fall 2007; (c) matriculated at the four-year institution in the fall 2008 semester; and (d) completed the survey instrument. Applying these criteria resulted in a sample of 139 students. Data were collected on age, gender, ethnicity, parental education attainment, and date of first-time college entry. Table 4.1 presents descriptive statistics for the sample.

Table 4.1

*Descriptive Statistics of the Sample*

	<i>N</i>	% of the sample
Transfer transition program status		
Participant	114	82.0%
Nonparticipant	25	18.0%
Age		
18	5	3.6%
19	90	64.7%
20	36	25.9%
21	7	5.1%
22	1	0.7%
Gender		
Male	74	53.2%
Female	65	46.8%
Ethnicity		
White	131	94.2%
Black	5	3.6%
Other	3	2.2%
Father's educational attainment		
Did not complete high school	2	1.4%
Completed high school	14	10.1%
Completed some college	24	17.3%
Bachelor's degree	66	47.5%
Master's degree	19	13.7%
Doctoral or professional degree	9	6.5%
Did not know	5	3.5%
Mother's educational attainment		
Did not complete high school	2	1.4%
Completed high school	20	14.4%
Completed some college	32	23%
Bachelor's degree	53	38.1%
Master's degree	27	18.7%
Doctoral or professional degree	3	2.2%
Did not know	3	2.2%
First time college entry		
Fall 2006	18	12.9%
Fall 2007	121	87.1%

The sample was comprised of 53.2% men ( $n=74$ ) and 46.8% women ( $n=65$ ). The age of participants ranged from 18 to 22 years. Approximately four out of five participants participated in the transfer transition program (82%). In terms of ethnicity, more than 90% of the students ( $n = 131$ ) identified themselves as Caucasian. The parental educational attainment data indicated that the majority of the fathers and mothers had attained the baccalaureate degree or higher. For the fathers, 67.7% had earned at least a bachelor's degree while 59% of the mothers had attained the baccalaureate or higher. With regard to first time college entry, 8.7 out of 10 students in the sample entered college for the first time in 2007.

After identifying the 139 students who met the initial sampling criteria, the sample was then divided into two samples in order to complete the data analysis process. One sample was comprised of transfer transition program participants ( $n=114$ ) and the other sample was comprised of transfer transition program nonparticipants ( $n=25$ ). Table 4.2 presents descriptive statistics for the two samples.

Table 4.2

*Descriptive Statistics of Transfer Transition Program Participants and Transfer Transition Program Nonparticipants*

	Transfer transition program participants		Transfer transition program nonparticipants	
	<i>N</i>	%	<i>N</i>	%
Age				
18	5	4.4%	0	0%
19	84	73.7%	6	24%
20	25	21.9%	11	44%
21	0	0%	7	28%
22	0	0%	1	4%
Gender				
Male	63	55.3%	11	44%
Female	51	44.7%	14	56%
Ethnicity				
White	107	93.9%	24	96%
Black	5	4.4%	0	0%
Other	2	1.7%	1	4%
Father's educational attainment				
Did not complete high school	1	.9%	1	4%
Completed high school	9	7.9%	5	20%
Completed some college	18	15.8%	6	24%
Bachelor's degree	60	52.6%	6	24%
Master's degree	15	13.2%	4	16%
Doctoral or professional degree	7	6.1%	2	8%
Did not know	4	3.5%	1	4%
Mother's educational attainment				
Did not complete high school	1	.9%	1	4%
Completed high school	11	9.6%	9	36%
Completed some college	26	22.8%	6	24%
Bachelor's degree	49	43%	4	16%
Master's degree	22	19.3%	4	16%
Doctoral or professional degree	3	2.6%	0	0%
Did not know	2	1.8%	1	4%
First time college entry				
Fall 2006	0	0%	18	72%
Fall 2007	114	100%	7	28%

The data showed that transfer transition program participants tended to be 18 to 20 years old. The majority of the participants were male (55.3%,  $n = 63$ ) and white (93.9%,  $n = 107$ ). Transfer transition program nonparticipants tended to range in age from 19 to 22 and the majority were female (56%,  $n = 14$ ) and white (96%,  $n = 24$ ). The parents of transfer transition program participants tended to have higher overall levels of educational attainment than the parents of nonparticipants. In terms of first-time college entry, all of the transfer participants were first-time freshmen in fall 2007 while only 28% ( $n = 7$ ) of the transfer transition program nonparticipants were first time freshmen in fall 2007

Age and parental educational attainment means of transfer transition program participants and nonparticipants were also calculated. Table 4.3 presents the means, standard deviations and standard errors for student age for both samples.

Table 4.3

*Mean Participant Age by Transfer Transition Program Participant Status*

	Age		
	Mean	SD	SE
Transfer transition program participants	19.18	.48	.05
Transfer transition program nonparticipants	20.12	.83	.17

These data indicated that, on average, the transfer transition program nonparticipants were approximately one year older than program participants. The range of student age was 18 to 22.

Means were calculated for the educational attainment level of parents using the scores from the survey scale with: (a) one equal to some high school; (b) two equal to high school graduate; (c) three equal to some college; (d) four equal to bachelor's degree; (e) five equal to master's degree; and (f) six equal to doctoral or professional degree. Means, standard deviations and standard errors for parental educational attainment level are presented in Table 4.4.

Table 4.4

*Mean Parental Educational Attainment by Transfer Transition Program Participant*

*Status*

	Parental educational attainment		
	Mean	SD	SE
Transfer transition program participants			
Father	3.91	.98	.09
Mother	3.79	.98	.09
Transfer transition program nonparticipants			
Father	3.54	1.35	.28
Mother	3.04	1.19	.24

The data showed that the mothers of transfer transition program nonparticipants had the lowest mean educational attainment level ( $M = 3.04$ ), while fathers of transfer transition program participants had the highest mean level of education ( $M = 3.91$ ). The parental educational attainment level was higher for transfer transition program participants for both parents.

*Community College Experience Descriptive Statistics*

The community college experience variables were participant status, community

college GPA, and community college semester hour credits earned. The data for these variables were collected from student transcripts and the student records database. Table 4.5 presents the means, standard deviations and standard errors for community college GPA and community college course credits earned.

Table 4.5

*Community College GPA and Community College Credits Earned by Transfer Transition Program Participant Status*

	Community college GPA			Community college credits		
	Mean	SD	SE	Mean	SD	SE
Transfer transition program participants	3.02	.35	.03	30.97	2.71	.25
Transfer transition program nonparticipants	2.97	.37	.07	49.64	13.68	2.74

The data indicated that, on average, transfer transition program nonparticipants earned 18.67 more credit hours at the community college than transfer transition program participants. Transfer transition program participants earned a slightly higher GPA at the community college than transfer transition program nonparticipants.

*Post-Transfer Descriptive Statistics*

The variables representing the post-transfer transition were academic self-efficacy, perceived cohesion, fall semester GPR, fall semester credits earned, transferred credits, and fall-to-spring persistence. Academic self-efficacy and perceived cohesion data were collected from the survey instrument and fall semester GPR, fall semester credits earned, transferred credits, and fall-to-spring persistence were collected from the

student records database. Summaries of the data for the post-transfer variables are presented in Tables 4.6 through 4.11. The academic self-efficacy and perceived cohesion data collected from the survey are presented first followed by the fall 2008 credits earned, fall 2008 GPR, transferred credits, and persistence data that were collected from the student records database.

Table 4.6 presents the means, standard deviations, and standard errors for academic self-efficacy by participant status. The lowest possible score for academic self-efficacy was zero and the highest possible score was 72. Scores for the present study ranged from 24 to 72. The higher the total score, the greater the level of confidence a student felt to successfully complete an academic-related task or behavior.

Table 4.6

*Academic Self-Efficacy Means by Transfer Transition Program Participant Status*

	Academic self-efficacy		
	Mean	SD	SE
Transfer transition program participants	52.72	9.98	.94
Transfer transition program nonparticipants	54.56	10.51	2.10

These data showed that both participants and nonparticipants had moderately high levels of academic self-efficacy. The mean of nonparticipants (54.56) was slightly higher than that of participants (52.72).

Perceived cohesion data were also collected from the survey instrument. Table 4.7 presents the means, standard deviations and standard errors for perceived cohesion by

participant status. The lowest possible score for perceived cohesion was zero and the highest possible score was 36. Scores for the present study ranged from 4 to 36. The higher the total score, the greater the sense of belonging the student felt to the university community.

Table 4.7

*Perceived Cohesion Means by Transfer Transition Program Participant Status*

	Perceived cohesion		
	Mean	SD	SE
Transfer transition program participants	30.79	5.20	.49
Transfer transition program nonparticipants	28.80	7.08	1.42

The data showed that both groups had a moderately high mean level of perceived cohesion. Transfer transition program participants had a slightly higher mean level ( $M = 30.79$ ) of perceived cohesion than transfer transition program nonparticipants ( $M = 28.80$ ).

Fall 2008 credits earned data were collected from the student records database. Table 4.8 presents the means, standard deviations, and standard errors for fall 2008 GPR by participant status.

Table 4.8

*Fall 2008 Credits Earned Means by Transfer Transition Program Participant Status*

	Fall 2008 credits earned		
	Mean	SD	SE
Transfer transition program participants	13.21	2.90	.27
Transfer transition program nonparticipants	12.96	2.42	.49

The results indicated that, on average, transfer transition program participants earned more credits (13.21) during the fall 2008 semester than transfer transition program nonparticipants (12.96). The difference in credits earned, .25, was very small.

Fall 2008 GPR data were collected from the student records database. Table 4.9 presents the means, standard deviations, and standard errors for fall 2008 GPR by participant status.

Table 4.9

*Fall 2008 GPR Means by Transfer Transition Program Participant Status*

	Fall 2008 GPR		
	Mean	SD	SE
Transfer transition program participants	2.67	.769	.072
Transfer transition program nonparticipants	2.65	.58	.12

The results indicated that transfer transition program participants had a slightly higher mean ( $M = 2.67$ ) fall semester GPR than transfer transition program nonparticipants ( $M = 2.65$ ). The difference in the means was .02, indicating a very slight difference.

Data regarding the number of community college credits earned and the number of transferred community college credits were collected from the student records database. Table 4.10 presents the means, standard deviations, and standard errors for the number of community college credits earned and the mean number of community college semester credit hours that transferred to the four-year institution.

Table 4.10

*Mean Number of Earned and Transferred Community College Credits by Transfer*

*Transition Program Participant Status*

	Community college credits earned			Community college credits transferred		
	Mean	SD	SE	Mean	SD	SE
Transfer transition program participants	30.97	2.71	.25	29.29	4.99	.47
Transfer transition program nonparticipants	49.64	13.68	2.74	40.60	14.85	2.97

The results indicated that transfer transition program nonparticipants earned more course credits at the community college ( $M = 49.64$ ) than transfer transition program participants ( $M = 30.97$ ) and transferred a higher number of community college course credits to the four-year institution. On average, transfer transition program

nonparticipants transferred 40.6 course credits to the four-year institution while transfer transition program participants transferred an average of 29.29 course credits to the four year institution. The results also show that, on average, transfer transition program participants' transferred a greater proportion of their community college course credits to the four-year institution (94.6%) as compared to nonparticipants (81.8%).

Spring 2009 persistence data were collected from the student records database. Table 4.11 presents the fall-to-spring persistence rates for transfer transition program participants and nonparticipants.

Table 4.11

*Fall-to-Spring Persistence by Transfer Transition Program Participant Status*

	Fall-to-spring persistence			
	Persisted		Did not persist	
	<i>N</i>	%	<i>N</i>	%
Transfer transition program participants	113	99.1%	1	.9%
Transfer transition program nonparticipants	25	100%	0	0%

The persistence rates were very high for both groups. The data showed that transfer transition program nonparticipants persisted from the fall to the spring semester at a slightly higher rate (100%) than transfer transition program participants (99.1%).

Data Analysis by Research Question

This study was guided by six research questions regarding transfer students' levels of academic self-efficacy, and perceived cohesion, fall 2008 credits earned, fall

2008 GPR, transferred community college course credits and fall-to-spring semester persistence. The research questions and results of the statistical analysis are presented in this section.

### Research Question 1

The first research question sought to investigate if there was a significant difference in the levels of academic self-efficacy between transfer transition program participants and nonparticipants.

RQ1: Is there a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

Academic self-efficacy data were collected from the survey instrument and analyzed using SPSS 16.0 for Microsoft Windows. Table 4.12 presents the mean levels of academic self-efficacy for transfer transition program participants and nonparticipants with standard deviations, difference in means, with 95% confidence interval and level of significance at  $p < .05$ .

Table 4.12

*Comparison of Mean Levels of Academic Self-Efficacy by Transfer Transition Program*

*Participant Status*

	Academic self-efficacy	
	Mean (SD)	Difference (95% CI)
Transfer transition program participant	52.72 (9.98)	1.84 (-2.56 - 6.24)
Transfer transition program nonparticipant	54.56 (10.51)	

Test of significance:  $t(137) = .83, p = .41$

An independent-samples *t*-test was performed comparing the mean academic self-efficacy levels for the transfer transition program participants ( $M = 52.72, SD = 9.98$ ) with that for the transfer transition program nonparticipants ( $M = 54.56, SD = 10.51$ ). The alpha level was .05. The results of this test,  $t(137) = .83, p = .41$ , indicated that the difference between these groups was not statistically significant. These results suggested that, on average, survey respondents reported moderately high levels of academic self-efficacy, but that any difference in levels of academic self-efficacy could not be attributed to transfer transition program participant status.

Research Question 2

The second research question sought to investigate if there was a significant difference in the levels of perceived cohesion between transfer transition program

participants and nonparticipants.

RQ2: Is there a significant difference in the levels of perceived cohesion between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

Perceived cohesion data were collected from the survey instrument and analyzed using SPSS 16.0 for Microsoft Windows. Because the perceived cohesion data did not meet the assumptions of normality and constant variance, a Mann Whitney  $U$  test was conducted instead of an independent samples  $t$ -test. Table 4.13 presents the medians and median ranks of perceived cohesion scores for transfer transition program participants and nonparticipants with the  $Z$ -score and level of significance at  $p < .05$ .

Table 4.13

*Comparison of Median Levels of Perceived Cohesion by Transfer Transition Program*

*Participant Status*

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	Perceived Cohesion	
	Median	Median Rank
Transfer transition program participants	31.0	71.71
Transfer transition program nonparticipants	30.0	62.18

---

Test of significance:  $Z = -1.08, p = .28$

---

A Mann Whitney  $U$  test was conducted to compare the distributions of perceived cohesion scores for transfer transition program participants and for nonparticipants. The

distribution of the ranks of perceived cohesion scores for transfer transition program participants and nonparticipants did not differ significantly ( $Z = - 1.08, p = .28$ ). These results suggested that the perceived cohesion scores for participants and nonparticipants did not come from different distributions and that there was not a significant difference in levels of perceived cohesion of transfer transition program participants and nonparticipants.

### Research Question 3

The third research question sought to examine if there was a difference in the number of fall 2008 credits earned between transfer transition program participants and nonparticipants.

RQ3: Is there is a significant difference in the number of credits earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

For research question 3, data were collected from the student records database and analyzed using SPSS 16.0 for Microsoft Windows. Because the fall 2008 credits earned data did not meet the assumptions of normality and constant variance, a Mann Whitney  $U$  test was conducted instead of an independent samples  $t$ -test. Table 4.14 presents the medians and median ranks of fall 2008 credits earned for transfer transition program participants and nonparticipants with the  $Z$ -score and level of significance at  $p < .05$ .

Table 4.14

*Comparison of Median Fall 2008 Credits Earned by Transfer Transition Program*

*Participant Status*

	Fall 2008 credits earned	
	Median	Median rank
Transfer transition program participant	14.0	71.26
Transfer transition program nonparticipant	13.0	64.26

Test of significance:  $Z = -.80, p = .43$

A Mann Whitney  $U$  test was conducted to compare the distributions of fall 2008 credits earned by transfer transition program participants and by nonparticipants. The distribution of the median ranks of fall 2008 credits earned for transfer transition program participants and nonparticipants did not differ significantly ( $Z = -.80, p = .43$ ). These results suggested that the fall 2008 credit hours earned by participants and nonparticipants did not come from different distributions and that there was not a significant difference in the number of semester credits earned by transfer transition program participants and nonparticipants.

Research Question 4

The fourth research question sought to examine if there was a difference in the fall 2008 GPRs between transfer transition program participants and nonparticipants. RQ4: Is there is a significant difference in the fall 2008 GPRs earned during the first

semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

Fall 2008 semester GPR data were collected from the student records database and analyzed using SPSS 16.0 for Microsoft Windows. Because the fall 2008 GPR data did not meet the assumptions of normality and constant variance, a Mann Whitney *U* test was conducted instead of a *t*-test. Table 4.15 presents the median ranks of fall 2008 GPRs for transfer transition program participants and nonparticipants with the *Z*-score and level of significance at  $p < .05$ .

Table.4.15

*Comparison of Median Grade Point Ratios by Transfer Transition Program Participant Status*

	Fall 2008 GPR	
	Median	Median rank
Transfer transition program participant	2.82	70.84
Transfer transition program nonparticipant	2.83	66.18

Test of significance:  $Z = -.52, p = .60$

A Mann Whitney *U* test was conducted to compare the distribution of fall 2008 GPRs earned by transfer transition program participants and by nonparticipants. The distribution of the ranks of fall 2008 GPRs for transfer transition program participants

and nonparticipants did not differ significantly ( $Z = -.52, p = .60$ ). These results suggested that the fall 2008 GPRs earned by participants and nonparticipants did not come from different distributions and that there was not a significant difference in the fall 2008 GPRs earned by transfer transition participants and nonparticipants.

#### Research Question 5

The fifth research question investigated whether transfer transition participant status predicted the odds of successful transfer of all community college course credits to the four-year institution.

RQ5: Does transfer transition program participant status significantly predict the likelihood that all of a student's community college course credits will transfer to the four-year institution?

For research question 5, transferred credits data were collected from the student records database and analyzed using SPSS 16.0 for Microsoft Windows. Logistic regression was conducted to predict the odds that a new transfer student would transfer all community college course credits to the four-year institution. The predictor variable was transfer transition program participant status. Table 4.16 presents the results of the logistic regression employing a level of significance at  $p < .05$ .

Table 4.16

*Logistic Regression Predicting Transfer of all Community College Course Credits*

Predictor	$\beta$	SE $\beta$	Wald $x^2$	$p$	Odds ratio
Transfer transition program participant status	1.19	.46	6.68	.01	3.29
Constant	-.58	.42	1.91	.19	.56

Reference group = nonparticipant

Of the 114 transfer transition program participants, 74 students transferred all of their community college course credits. Of the 25 transfer transition program nonparticipants, 9 students transferred all of their community college course credits. The odds ratio for transfer transition program participant status indicated that a transfer transition program participant was 3.29 times more likely to transfer all community college credits to the four-year institution than a transfer student who did not participate in the transfer transition program. These results were statistically significant at  $p = .01$ .

Research Question 6

The sixth research question investigated whether transfer transition participant status predicted the odds of persisting from the fall to the spring semester.

RQ6: Does transfer transition program participant status significantly predict the likelihood that a student will persist from fall to spring semester?

For research question 6, persistence data were collected from the student records database and analyzed using SPSS 16.0 for Microsoft Windows. Logistic regression was conducted to predict the odds that a new transfer student would persist from the fall to

spring semester. The predictor variable was transfer transition program participant status. Table 4.17 presents the results of the logistic regression employing a level of significance at  $p < .05$ .

Table 4.17

*Logistic Regression Predicting Fall-to-Spring Persistence*

Predictor	$\beta$	SE $\beta$	Wald $\chi^2$	$p$	Odds ratio
Transfer transition program participant status	-17.178	8038.594	0.00	.99	<0.001
Constant	21.203	8038.594	0.00	.99	1.615E9

Reference group = nonparticipant

Of the 114 transfer transition program participants, 112 of the students persisted. Of the 25 transfer transition program nonparticipants, 25 of them persisted. The odds ratio for transfer transition program participant status indicated that a transfer transition program participant was slightly likely to persist from the fall to spring semester than a transfer student who did not participate in the transfer transition program. These results were not significant at  $p = .99$ .

Because the standard error of the regression coefficient was excessively large, the validity of the model was questionable. The data were further explored and additional analyses were conducted. The logistic regression results were obtained utilizing the binary logistic regression function in SPSS 16.0 for Microsoft Windows. The maximum likelihood estimation was performed using the SPSS default setting of 20 iterations.

The researcher first conducted a secondary analysis of the existing data using SAS

9.2 for Windows. Table 4.18 presents the results of the logistic regression employing a level of significance at  $p < .05$ .

Table 4.18

*Logistic Regression Predicting Fall-to-Spring Persistence Using SAS 9.2 for Windows*

Predictor	$\beta$	SE $\beta$	Wald $x^2$	$p$	Odds ratio
Transfer transition program participant status	-10.22	248.5	0.00	.95	<.001
Constant	14.25	248.5	0.00	.97	999.99

Reference group = nonparticipant

Results from the secondary analysis conducted using SAS 9.2 for Windows showed that the odds ratio for transfer transition program participant status indicated that a transfer transition program participant was no more likely to persist from the fall to spring semester than a transfer student who did not participate in the transfer transition program. These results were not significant at  $p = .95$ .

Data were further analyzed using the binary logistic regression procedure in SPSS 16.0 for Windows. An iteration history was generated and the maximum likelihood estimation was terminated after 13 iterations. Results of the logistic regression analysis showed that the results were consistent with the results of the logistic regression that was conducted using SAS 9.2 for Windows. Table 4.19 shows the results of the logistic regression conducted with maximum likelihood estimation terminated after 13 iterations.

Table 4.19

*Logistic Regression Predicting Fall-to-Spring Persistence Using SPSS 16.0 for Windows with Maximum Likelihood Estimation Terminated at Iteration Number 13*

Predictor	$\beta$	SE $\beta$	Wald $\chi^2$	$p$	Odds ratio
Transfer transition program participant status	-10.18	242.75	0.00	.97	<.001
Constant	14.20	242.75	0.00	.95	1.473E4

Reference group = nonparticipant

The student persistence data were further analyzed using SPSS 16.0 for Windows. A Fisher's exact probability test was conducted to determine if there was an association between persistence and transfer transition participant status. The alpha level was .05. This test was employed instead of a chi square because the assumption of having a minimum of five counts in each cell could not be met. Table 4.20 presents the frequencies for persistence by transfer transition program participant status.

Table 4.20

*Frequencies of Persistence by Transfer Transition Program Participant Status*

Fall to spring persistence	Yes	No	$N$
Transfer transition program participant	112	2	114
Transfer transition program nonparticipant	25	0	25

Results of the two-tailed Fisher's exact probability test showed that persistence

was not associated with transfer transition program participant status,  $p = 1$ . These results indicated that transfer transition program participants and nonparticipants were equally likely to persist.

All of the transfer transition program nonparticipants ( $n=25$ ) persisted from the fall to spring semester and 112 of the 114 transfer transition program participants persisted from the fall to spring semester. The researcher detected quasi-complete separation of the data and concluded that the probability of persisting from the fall to spring semester approached 1 for both transfer transition program participants and nonparticipants. Additionally, increasing the number of iterations resulted in an increased standard error of the regression coefficient because the maximum likelihood estimates became increasingly less precise with each iteration.

Due to the limitations of the survey data, the lack of validity of the model and the importance of this research question, one supplementary analysis was performed. The student persistence data for all transfer students from the selected community college who matriculated at the four-year institution ( $n = 239$ ) were collected from the student records database and analyzed using SPSS 16.0 for Microsoft Windows. Logistic regression was conducted to predict the odds that a new transfer student would persist from the fall to spring semester. The predictor variable was transfer transition program participant status. Table 4.21 presents the results of the logistic regression employing a level of significance at  $p < .05$ .

Table 4.21

*Logistic Regression Predicting Fall-to-Spring Persistence of all Fall 2008 Transfer Students by Transfer Transition Program Participant Status*

Predictor	$\beta$	SE $\beta$	Wald $\chi^2$	$p$	Odds ratio
Transfer transition program participant status	2.02	.85	5.62	.02	7.50
Constant	2.45	.47	27.65	<.001	11.60

Reference group = nonparticipant

Of the 176 transfer transition program participants, 174 persisted. Of the 63 transfer transition program nonparticipants, 58 persisted. The odds ratio for transfer transition program participant status indicated that the odds of a transfer transition program participant persisting from the fall to spring semester were 7.5 times higher than for a transfer student who did not participate in the transfer transition program. These results were significant at  $p = .02$ .

### Chapter Summary

This chapter presented the descriptive statistics for the students in the transfer transition program participant sample and the students in the transfer transition nonparticipant sample. The results from the analysis of the data for the six research questions were also presented. Chapter five provides a summary of the findings, conclusions of the study, limitations of the study, general recommendations, and recommendations for future research.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary of the Study

The primary purpose of this study was to investigate the academic self-efficacy, academic integration, social integration, and persistence of community college transfer students at a four-year institution. Academic self-efficacy, academic integration, and social integration were hypothesized to positively impact persistence.

Academic self-efficacy was defined as the level of confidence a student felt to successfully achieve various academic outcomes at the four-year institution (Lent et al., 1997). Transferred community college credits, fall semester credits earned, and fall semester GPR were used as proxies for academic integration (Tinto, 1975, 1993). Perceived cohesion was defined as the sense of belonging a student feels to the four-year institution community and the feelings of morale associated with belonging to the four-year institution community (Bollen & Hoyle, 1990). Perceived cohesion was employed as a proxy for social integration (Tinto, 1975, 1993). Persistence was defined as continued enrollment at the four-year institution from fall 2008 to spring 2009.

The following six research questions guided the study:

1. Is there a significant difference in the levels of academic self-efficacy between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?

2. Is there a significant difference in the levels of perceived cohesion between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
3. Is there is a significant difference in the number of credits earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
4. Is there is a significant difference in the semester GPR earned during the first semester at the four-year institution between transfer students who participated in the transfer transition program and transfer students who did not participate in the transfer transition program?
5. Does transfer transition program participant status significantly predict the likelihood that all of a student's community college course credits will transfer to the four-year institution?
6. Does transfer transition program participant status significantly predict the likelihood that a student will persist from fall to spring semester?

The participants for the study were students from a selected community college who transferred to a four-year institution in fall 2008. Students were divided into two groups: those who had participated in a transfer transition program and those who had not. The study utilized self-reported survey data as well as academic performance data obtained from the four-year institution's student records database. Data collected from students' responses on the survey instrument as well as their fall 2008 credits earned, fall

2008 GPR, transferred credits and spring 2009 semester enrollment data were entered into an Excel database and analyzed using SPSS 16.0 for Microsoft Windows.

The introduction, review of literature, research design and methodology, and results for this study were presented in chapters one through four. Brief summaries of the chapters follow.

Chapter one included an outline of the research problem and purpose of the study. Additionally, the conceptual and theoretical frameworks for the study were presented. Organizational socialization, retention, and social cognitive theories provided the theoretical foundation for this study. Chapter one also introduced the research questions, research design, definitions of terms, delimitations, and significance of the study.

Chapter two provided a review of the relevant literature associated with community college transfer students. Specific attention was given to the effect of attending a community college on baccalaureate attainment, the individual and structural factors that impact and predict the transfer rate of community college transfer students, the transition process to the four-year institution, and the influence of transition experiences on student retention and academic performance at the four-year institution.

Chapter three presented the research design and methodology used for the study. This study utilized a cross-sectional quantitative survey research design. This chapter also included a description of the sample, demographic data, independent, and dependent variables, and research questions as well as the data collection and analysis procedures employed in the study.

Chapter four provided the results of the data analysis for each of the six research questions. Descriptive statistics and findings for each of the six research questions were presented. An independent samples *t*-test, Mann Whitney *U* test, and logistic regression were the statistical tests used to analyze the data.

This chapter presents a summary of the findings and conclusions drawn from the data within the context and delimitations of the study. Limitations of the study, general recommendations, and recommendations for future research are also discussed.

### Summary of the Findings

This study investigated whether there were significant differences in the academic self-efficacy, perceived cohesion, fall 2008 credits earned, and fall 2008 GPR between students who participated in a transfer transition program and students who did not participate in the transfer transition program. Second, this study investigated whether participant status in the transfer transition program predicted the likelihood of a student transferring all earned community college credits to the four-year institution and the likelihood of a student persisting from the fall 2008 to the spring 2009 semester.

### *Description of the Sample*

The data showed that transfer transition program participants tended to be 18 to 20 years old. The majority of the participants were male (55.3%,  $n = 74$ ) and white (93.9%,  $n = 131$ ). Transfer transition program nonparticipants tended to range in age from 19 to 22 and the majority were female (56%,  $n = 14$ ) and white (96%,  $n = 24$ ). The parents of transfer transition program participants tended to have higher overall levels of educational attainment than the parents of nonparticipants. In terms of first-time college

entry, all of the transfer participants were first-time freshmen in fall 2007 while only 28% (n = 7) of the transfer transition program nonparticipants were first time freshmen in fall 2007.

### *Summary of the Research Questions*

Six research questions guided this study. The first research question investigated differences in academic self-efficacy between transfer transition program participants and nonparticipants. The second research question compared differences in perceived cohesion between transfer transition program participants and nonparticipants. The third and fourth research questions investigated whether there were differences in fall 2008 credits earned and GPR between transfer transition program participants and nonparticipants. The fifth research question examined whether transfer transition program participant status predicted the likelihood of all community college earned credits transferring to the four-year institution. The final research question investigated whether transfer transition program participant status predicted the likelihood of fall-to-spring persistence.

This study utilized primary and secondary sources of data. Primary data (fall 2008 credits earned, fall 2008 GPR, transferred community college credits and fall-to-spring persistence) were collected using the four-year institution's student records database and individual student transcripts. Secondary data (academic self-efficacy and perceived cohesion) were collected from a web-based survey instrument sent to all enrolled transfer students. Data were analyzed using SPSS 16.0 for Microsoft Windows. Preliminary data analysis included examining the data for missing data, testing for normality and constant

variance and testing for differences in the means of academic self-efficacy and medians of perceived cohesion between fall 2008 and spring 2009 survey respondents. Missing academic self-efficacy data were discovered and constituted less than .3% of the academic self-efficacy data. Missing data were assumed to be missing completely at random (MCAR) (Allison, 2002). The six research questions were analyzed using descriptive statistics, an independent samples *t*-test , Mann-Whitney *U* tests, and logistic regression.

#### *Research Question One Findings*

The first research question investigated differences in academic self-efficacy between transfer transition program participants and nonparticipants. An independent samples *t*-test was used to test for differences in the means of academic self-efficacy between transfer transition program participants and nonparticipants. The result of the independent-samples *t*-test computation to determine if a difference existed between the mean academic self-efficacy mean levels for transfer transition program participants ( $M = 52.72, SD = 9.98$ ) and nonparticipants ( $M = 54.56, SD=10.51$ ) was not significant  $t(137) = .83, p = .41$ . Therefore, any differences between the two groups could not be attributed to transfer transition program participant status.

#### *Research Question Two Findings*

The second research question compared differences in perceived cohesion between transfer transition program participants and nonparticipants. A Mann Whitney *U* test was used to test for differences in the median ranks of perceived cohesion scores for transfer transition program participants and nonparticipants. The results of the Mann

Whitney  $U$  test showed that the ranks of perceived cohesion scores did not differ significantly ( $Z = -1.08, p = .28$ ). These results showed that there was not a significant difference in the perceived cohesion scores for transfer transition program participants and nonparticipants. Therefore, any differences in perceived cohesion between the two groups could not be attributed to transfer transition program participant status.

#### *Research Question Three Findings*

The third research question investigated differences in the number of fall 2008 credits earned between transfer transition program participants and nonparticipants. A Mann Whitney  $U$  test was used to test for differences in the median ranks of fall 2008 credits earned by transfer transition program participants and nonparticipants. The results of the Mann Whitney  $U$  test showed that the ranks of credits earned did not differ significantly ( $Z = -.80, p = .43$ ) between transfer transition program participants and nonparticipants. These results showed that there was not a significant difference in the number of fall 2008 credits earned by transfer transition program participants and nonparticipants. Therefore, any differences in fall 2008 credits earned between the two groups could not be attributed to transfer transition program participant status.

#### *Research Question Four Findings*

The fourth research question investigated differences in fall semester GPR between transfer transition program participants and nonparticipants. A Mann Whitney  $U$  test was used to test for differences in the median ranks of fall 2008 GPRs earned by transfer transition program participants and by nonparticipants. The results of the Mann Whitney  $U$  test showed that the median credits earned did not differ significantly

( $Z = -.52, p = .60$ ) between transfer transition program participants and nonparticipants. These results showed that there was not a significant difference in the fall 2008 GPR earned by transfer transition program participants and nonparticipants. Therefore, any differences in fall 2008 GPRs between the two groups could not be attributed to transfer transition program participant status.

#### *Research Question Five Findings*

The fifth research question examined whether transfer transition program participant status predicted the likelihood that all of a student's community college earned credits would transfer to the four-year institution. Logistic regression was used to determine if transfer transition program participant status predicted the likelihood of all community college earned credits transferring to the four-year institution. Transfer transition program nonparticipants were the reference group. Transfer transition program participant status was a significant predictor of the likelihood of all community college earned credits transferring to the four-year institution. The result of the logistic regression indicated that students who participated in the transfer transition program were 3.29 times more likely than transfer transition program nonparticipants to have all of their community college credits successfully transfer to the four-year institution. These results were significant at  $p = .01$ .

#### *Research Question Six Findings*

The sixth research question investigated whether participant status predicted the likelihood of a student persisting from the fall to spring semester. Logistic regression was used to determine if transfer transition program participant status predicted the likelihood

of fall-to-spring persistence. With regard to fall-to spring persistence, the results showed that the odds of persisting from the fall to spring semester were slightly lower for transfer transition program participants as compared to transfer transition program nonparticipants. Because the validity of the model was questionable, additional exploration and analysis of the data was conducted.

## Discussion and Conclusions

### *Introduction*

This study investigated research questions not previously reported in the literature regarding the academic self-efficacy, academic integration, social integration, and persistence of community college transfer students who participated in a transfer transition program. Selected results from this study provide confirmation of the benefit of the transfer transition program with regard to student progress towards the baccalaureate degree. Doyle (2006) found a positive relationship between the number of credits accepted by the four-year institution and transfer students' persistence and baccalaureate attainment rates. In light of Doyle's finding, the significant finding that the likelihood of successfully transferring all community college credits to the four-year institution was 3.29 times higher for transfer transition program participants than for transfer transition program nonparticipants provides compelling evidence for the efficacy of the transfer transition program. While the other results from this study were not statistically significant, some results were consistent with previous research findings and the theoretical framework utilized for this study.

Tinto's theory of student departure (1975, 1993), Bandura's social cognitive

theory (1977, 1997) and organizational socialization theory (Merton, 1957; Van Maanen & Schein, 1979) provided the theoretical foundation for this study. While significant differences in academic self-efficacy and perceived cohesion were not found in this study, the findings nonetheless, were consistent with the theories. Tinto argued that students with high levels of academic and social integration were more likely to persist at the four-year institution. Transferred credits, fall 2008 credits earned and fall 2008 GPA served as proxies for academic integration and perceived cohesion was a proxy for social integration. Transfer transition program participants and nonparticipants reported moderately high to high levels of academic self-efficacy and perceived cohesion. Additionally, data collected from the student records database showed that the fall-to-spring persistence rates were very high for both transfer transition program participants and nonparticipants. The academic integration, social integration and persistence data were consistent with Tinto's theory. Furthermore, students reported moderately high to high levels of academic self-efficacy. Researchers found that academic self-efficacy was related to academic performance and persistence (Lent et al., 1997; Lent et al., 1984, 1986) Finally, Pascarella et al. (1986) conceptualized new student orientation programs as a socialization tactic and found that new student orientation programs have a significant indirect effect on persistence.

#### *Research Question One*

There was no difference between transfer transition program participants and nonparticipants in the level of confidence they felt to successfully complete specific academic tasks. Differences in academic self-efficacy were likely attributable to factors

other than the transfer transition program. Time and experience in the college setting may influence a student's level of academic self-efficacy.

One of the samples for this study included students who first enrolled in college in fall 2006 or fall 2007 while the other sample included only those students who first enrolled in college in fall 2007. All of the participants in the transfer transition program sample first enrolled in college in fall 2007 while 72% of the participants in the transfer transition program nonparticipant sample first enrolled in college in fall 2006. While the results from the independent samples *t*-test were not significant, it was not surprising that students in the transfer transition program nonparticipant sample had a higher mean level of academic self-efficacy than the students in the transfer transition program participant sample. The difference in time enrolled in college and experience with the college setting may explain this difference. The results from the present study were consistent with Gore's (2006) conclusion that students with more experience in the "academic arena" should be expected to have higher levels of academic self-efficacy than less experienced students. Additionally, Bandura (1997) found that level of self-efficacy was influenced by past successes. This suggested that including students whose first enrollment in college was in fall 2006 may have impacted the mean level of academic self-efficacy for the transfer transition program nonparticipant sample because these students had one additional year in the college setting to experience academic successes.

#### *Research Question Two*

There was no difference between transfer transition program participants and nonparticipants in the sense of belonging and feelings of morale students felt during their

first semester of the four-year institution. Sense of belonging and feelings of morale may have been fostered as a result of student perceptions of the environment and intentional transition programs at the four-year institution.

Results of the Mann Whitney *U* test showed that differences in the perceived cohesion ranks of transfer transition program participants and nonparticipants were not significant. Further, perceived cohesion data for both samples were negatively skewed indicating that the median perceived cohesion scores were higher than the mean scores. This indicated that most participant and nonparticipant perceived cohesion scores were above the mean and that transfer transition program participants and nonparticipants had moderate to high levels of perceived cohesion. A potential explanation for this result is that students in both samples found the environment to be welcoming in nature during their first semester at the four-year institution. The four-year institution's intentional focus on meeting the needs of new transfer students may also be a contributory factor with regard to the level of perceived cohesion reported by students. The four-year institution allocated a staff position and financial resources specifically for the purpose of working with the new transfer student population. Additionally, at the beginning of the fall 2008 semester, the four-year institution implemented a new three-hour transfer orientation session designed to welcome new transfer students and acclimate them to the expectations of the four-year institution. All newly enrolled transfer students were required to attend this session. It is plausible that the orientation program and other intentional efforts by the four-year institution impacted the students' perceived sense of

belonging and feelings of morale. Students completed the survey instrument for the present study after attending the new transfer student orientation and welcome program.

### *Research Question Three*

There was no difference between transfer transition program participants and nonparticipants in the number of credits earned during the first semester at the four-year institution. Factors other than participation in the transfer transition program such as educational experience and individual student decisions may have had a greater impact on credits earned during the first semester at the four-year institution.

Results from the Mann Whitney *U* test showed that the differences in the number of fall 2008 credits earned were not significant. These results showed that differences in credits earned could not be attributed to transfer transition program participant status. Researchers (Cameron, 2005; Flaga, 2006; Townsend & Wilson, 2006a) reported that new transfer students found the transition from the community college to the four-year institution to be stressful and that there was an increased emphasis on academics at the four-year institution. Individual student decisions about what constituted a manageable academic load may be related to the number of credits earned during a student's first semester at the four-year institution. However, while there were not significant differences in credits earned between the two groups, one sample was comprised entirely of students who began college as first-time freshmen in fall 2007 and 72% of the students in the other sample began college as first-time freshmen in fall 2006. This suggests that individual student-related factors not investigated in this study may account for the lack of significant differences in credits earned during the first semester.

#### *Research Question Four*

There was no difference between transfer transition program participants and nonparticipants in the GPR earned during the first semester at the four-year institution. Factors other than participation in the transfer transition program may have a greater impact on first-semester GPR.

Results from the Mann Whitney *U* test showed that the differences in fall 2008 GPRs between transfer transition program participants and nonparticipants were not significant. This result suggested that transfer transition program participant status did not have an impact on semester credits earned and that unobserved factors such as age or educational experience or chance may explain differences in GPR. Betts and Morell (1998) found that personal characteristics such as age, gender, ethnicity, and socioeconomic status explained variations in college GPAs.

#### *Research Question Five*

Participation in the transfer transition program helped community college transfer students make progress towards their intended major and a baccalaureate degree. Participation in the transfer transition program also increased the likelihood of successful transfer of community college credits to the four-year institution. Researchers concluded that articulation agreements alone are not sufficient for increasing transfer and baccalaureate rates (Anderson et al., 2006; Goldhaber et al., 2008). The finding that the odds of successfully transferring all community college course work to the four-year institution were 3.29 times higher for the transfer transition program participants than for transfer transition program nonparticipants demonstrated the positive impact of

participation in the transfer transition program on facilitating progress towards a baccalaureate degree. Further, Doyle (2006) found a positive relationship between the number of credits that transferred to the four-year institution and graduation rates. This finding is supported by another finding from this study that showed transfer transition program participants transferred a greater percentage of their community college credits to the four-year institution (94.6%) as compared to transfer transition program nonparticipants (81.8%).

#### *Research Question Six*

Transfer transition program participant status did not predict the odds of persisting from the fall to the spring semester. All of the students in the transfer transition program nonparticipant sample and 99.1% of the students in the transfer transition program participant sample persisted to the spring 2009 semester. The high persistence rates of students from both samples made it difficult to draw any meaningful conclusions regarding persistence because the validity of the logistic regression model was questionable. Given the “moderately high” to “high” levels of academic self-efficacy and perceived cohesion reported by both transfer transition program participants and nonparticipants, the high persistence rates were not unexpected.

Because of the questionable validity of the model and the importance of the research question, further analyses were conducted regarding the persistence of all new transfer students from the selected community college. Logistic regression results indicated that the odds of persisting from the fall to spring semester were 7.5 times higher

for transfer transition program participants than for students who did not participate in the transfer transition program.

The results indicate that further research is needed on whether participant status in the transfer transition program significantly predicts the odds of persisting from the fall to spring semester. In addition to participation in the transfer transition program, other factors such as the institutional initiatives at the four-year institution designed to welcome new transfer students could predict the odds of transfer student persistence after the first semester.

#### Limitations

During the course of the study, the researcher identified several limitations to the generalizability of the results from the study. First, there were sampling limitations associated with the study. Preliminary analysis of the enrolled student data at the beginning of the fall 2008 identified 192 transfer students from the selected community college who (a) graduated from high school in 2007; (b) enrolled in college for the first time in fall 2007; and (c) enrolled at the four-year institution for the first time in fall 2008. However, of the 192 students identified, 176 students had participated in the transfer transition program. As a result, there were only 16 students who had not participated in the transfer transition program. In order to increase the potential size of the transfer transition program nonparticipant sample, 47 students who (a) graduated from high school in 2006; (b) enrolled in college for the first time in fall 2006 or fall 2007; and (c) enrolled at the four-year institution for the first time in fall 2008 were populated into the initial sample of students eligible to complete the survey. This

limitation is acknowledged because the students who first enrolled in college for the first time in fall 2006 had an additional year of experience in the college setting.

Another sampling-related limitation of this study was non-response error. It is possible that significant differences existed between the students who responded to the survey and the students who did not respond to the survey. Additionally, students who failed to respond to the survey during the fall 2008 semester were invited a second time to complete the survey during the spring 2009 semester. Analysis of the data between fall 2008 and spring 2009 responses showed a significant difference in mean levels of academic self-efficacy. Further, there were 36 students who were enrolled during the fall 2008 semester and did not respond to the survey during the fall 2008 semester. These students did not re-enroll for the spring 2009 semester so they were not given a second opportunity to complete the survey during the spring 2009 semester.

A second limitation of this study was the existence of missing data. Five students failed to respond to one of the questions on the SE-Broad scale. While the error was assumed to be missing completely at random (MCAR), it was not known why the respondents failed to respond to these questions.

This study employed a cross-sectional survey research design. As a result the methodology, research questions, data analysis, and findings were limited and bounded by this design. The design of the study represents a third limitation. Astin and Lee (2003) argued that cross-sectional research designs are less robust than longitudinal designs and that data from cross-sectional designs were corrupted by input bias. In reviewing cross-sectional studies, the researchers found that much of the variation among students could

be attributed to pre-college attributes rather than impacts from institutional programs and services. Astin and Lee suggested that longitudinal data provided more compelling evidence for comparisons in student development and learning. Furthermore, the methodology employed for this study did not control for all of the potential differences in characteristics of program participants and nonparticipants. In the future, the researcher may want to consider use of a different statistical test such as analysis of covariates. This would allow the researcher to control for factors not accounted for in this study such as high school academic performance, SAT/ACT scores and level of parental educational attainment. Use of a different research design may have resulted in different findings for this study. Finally, there may be unobservable characteristics that impacted academic self-efficacy, perceived cohesion, fall semester credits earned, and fall semester GPR that could not be detected from the statistical tests employed for this study.

#### Recommendations for Policy and Practice

Results of this study showed that students who participated in the transfer transition program were 3.29 times more likely to have all of their community college credits transfer to the four-year institution. This finding has important implications for students, community colleges, and four-year institutions.

*Recommendation One: Continue to collaborate with the selected community college to offer the transfer transition program.*

For students, the opportunity to enroll in transferrable courses at the community college equates with making progress towards a baccalaureate degree. For students from lower socio economic backgrounds, the transfer transition program could be especially

beneficial. Participation in the transfer transition program facilitates enrollment in transferrable courses while allowing students to be most efficient with their limited financial resources by keeping their costs of attendance as low as possible.

*Recommendation Two: Investigate whether the transfer transition program increases the transfer rate at the community college.*

Community colleges have been criticized for their low transfer rates. Developing intentional partnerships with four-year institutions that combine the affordability and open access of community colleges with access to services at the four-year institution offers the potential to improve the transfer rate of community college students and to socialize and orient students to the academic and social norms of the four-year institution.

*Recommendation Three: Assess the enrollment management benefits of the transfer transition program to the community college and four-year institution*

The transfer transition program has the potential to provide strategic enrollment management opportunities for community colleges and four-year institutions. Creating collaborative partnerships that provide potential transfer students with the opportunity to complete all required first-year courses at the community college may allow four-year institutions to reduce the number of first-year survey courses they need to provide. Such a model has the potential to both increase tuition revenues for the community college as well as reduce costs for the four-year institution.

*Recommendation Four: Investigate whether the transfer transition program increases access to the baccalaureate degree.*

In order to maximize access to the baccalaureate degree, community college and four-year leaders should pursue programs and initiatives that allow students with baccalaureate aspirations to begin their postsecondary education at a community college. Increasing the numbers of students who enroll in transferrable courses at the community college may lead to a “warming up” of baccalaureate intentions (Tinto, 1993). Increasing opportunities for attainment of the baccalaureate degree must be the shared mission of both the community college and four-year institution.

#### Recommendations for Future Research

Recommendations for future research include (a) the use of alternative research designs; (b) employing a different theoretical framework; (c) examining the impact of a transfer transition program on the community college environment; and (d) exploring differences in the level of knowledge and understanding of transfer preparation and advising services provided at the community college and four-year institution between transfer transition program participants and nonparticipants.

*Recommendation One: Explore the use of a different quantitative research design.*

Use of a different quantitative research design should be explored. For example, a pre-test/post-test matched samples design could be utilized to determine if there are changes in academic self-efficacy and perceived cohesion among transfer transition program participants during their first year at the community college. Further, a design that utilizes analysis of covariance could be employed to control for factors such as high school academic performance, SAT /ACT scores and parental educational attainment to equalize groups that would allow the researcher to make a determination about the true

effect of participation in the transfer transition program. Additionally, use of a longitudinal research design would allow the researcher to follow a cohort over time to determine if there are significant differences in persistence, time to degree and attainment of the baccalaureate degree.

*Recommendation Two: Utilize qualitative inquiry methods to explore the nature and meaning of participation in the transfer transition program.*

The nature of the transfer transition program also lends itself to qualitative inquiry. Future research could include an exploration of how student describe their experiences in the transfer transition program and what participation in the transfer transition program means to students to in terms of their educational progress and attainment. Another potential area for research could explore student identity and how or if participation in the transfer transition program in integrated into a student's overall identity as a learner or member of the four-year institution community. Faculty and staff perceptions about the transfer transition program would provide another rich area for qualitative inquiry.

*Recommendation Three: Use a different theoretical framework to investigate potential differences between transfer transition program participants and nonparticipants.*

Future research could investigate differences between transfer transition program participants and nonparticipants using a different theoretical framework such as reference group theory, network theory, or self-determination theory.

*Recommendation Four: Investigate the potential “interplay” between transfer student status and sophomore status from a student development perspective.*

The transfer transition program participants are in their second year of college when they enroll at the four-year institution making them both sophomores and transfer students. Research has shown that transfer students face significant challenges in making the transition to the four-year institution and that sophomores search for meaning and a sense of purpose during their second year of college. Future research could investigate if sophomore transfer students experience converging challenges of having to make a successful transition to a new environment while mastering developmental tasks associated with the sophomore year.

#### Chapter Summary

This chapter provided an overview of the study, a summary of the findings and conclusions for the study. Limitations of the study and recommendations for policy and practice as well as future research were also presented.

## APPENDICES

## Appendix A

### Permission to use the SE-Broad Scale

**From:** Bob Lent [mailto:boblent@umd.edu]  
**Sent:** Tue 6/24/2008 11:08 PM  
**To:** SUSAN S WHORTON  
**Subject:** Re: Requesting permission to use SE-Broad Scale

Permission granted. See attached measurement guide, which you may find of some use.

----- Original Message -----

**From:** [SUSAN S WHORTON](mailto:SUSAN_S_WHORTON@CLMSON.EDU)  
**To:** [boblent@umd.edu](mailto:boblent@umd.edu)  
**Sent:** Tuesday, June 24, 2008 10:18 PM  
**Subject:** Requesting permission to use SE-Broad Scale

Dear Dr. Lent,

I am a doctoral student in the Educational Leadership program at Clemson University. I am writing to request your permission to use the Self-Efficacy for Broad Academic Milestones Scale in my research. I am drafting my dissertation proposal and would like to explore whether participation in an intentional transfer transition program is correlated with levels of academic self-efficacy, perceived cohesion, persistence and GPA of new transfer students at Clemson University.

Your scale is one of the scales I would very much like to use in my research. I appreciate your consideration of this request. Thank you.

Sincerely,

Sue Whorton

## Appendix B

### Inter-Item Correlation Matrix for SE-Broad Scale

#### Cronbach Alpha

ASE 1	ASE 2	ASE 3	ASE 4	ASE 5	ASE 6	ASE 7	ASE 8	ASE 9	ASE 10	ASE 11	ASE 12
1.00	.657	.419	.555	.524	.504	.324	.634	.517	.608	.589	.429
	1.00	.492	.569	.475	.510	.284	.467	.486	.544	.521	.411
		1.00	.490	.369	.343	.311	.419	.378	.391	.329	.356
			1.00	.445	.458	.316	.476	.340	.364	.313	.309
				1.00	.909	.521	.662	.545	.598	.580	.536
					1.00	.534	.620	.602	.601	.560	.523
						1.00	.540	.380	.396	.363	.452
							1.00	.564	.652	.664	.576
								1.00	.923	.820	.627
									1.00	.926	.672
										1.00	.676
											1.00

## Appendix C

### Section of Article Granting Use of Perceived Cohesion Scale

TABLE 1: Perceived Cohesion Scale<sup>a</sup>

---

*Sense of Belonging*

I feel a sense of belonging to \_\_\_\_\_.

I feel that I am a member of the \_\_\_\_\_ community.

I see myself as part of the \_\_\_\_\_ community.

*Feelings of Morale*

I am enthusiastic about \_\_\_\_\_.

I am happy to be at [live in] \_\_\_\_\_.

\_\_\_\_\_ is one of the best schools [cities] in the nation.

---

<sup>a</sup> Responses are recorded on Likert scales ranging from 0 ("strongly disagree") to 5 ("neutral") to 10 ("strongly agree"). We substituted the name of the reference group for perceived cohesion in the blanks. Bracketed words in the final two items were used in the present study when referring to the city sample. The items are sorted for purposes of presentation; for actual use we suggest random ordering.

Items of the Perceived Cohesion Scale were generated by Bollen in the fall of 1984.

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attraction presupposes that members of a group have at least some familiarity with each group member. In contrast, sociology applies cohesion to moderate-to-large groups where face-to-face interaction or even knowledge of everyone in the group of interest is not possible. In such groups the idea of equating interpersonal attraction with cohesion makes little sense. Yet, the dimensions of belonging and morale still apply. The samples we chose for this study illustrate this point. We investigate perceived cohesion in a sample of college students and a sample of residents of a mid-sized city. In both samples, respondents are not acquainted with all other members of their respective groups. Focusing upon belonging and morale as dimensions of cohesion liberates the empirical study of cohesion from the study of only small groups and is more in keeping with the study of cohesion regardless of group size.

#### PERCEIVED COHESION SCALE

The Perceived Cohesion Scale (PCS), presented in Table 1, parallels the preceding theoretical definition. Three of the six indicators pertain to sense of belonging and three to feelings of morale. The items apply to many groups where the group name can be substituted in the blank. In some cases a slight rewording may be necessary, as in the case of the second and third morale items. Also, the scale has few items so that it requires minimal questionnaire space or respondent's time, and so that it does not become excessively repetitious.

We recognize that the wording of these items might limit the use of the scale with certain groups and samples. For example, enthusiasm (first indicator of morale) may not characterize the affective manifestation of morale exhibited

## Appendix D

### Inter-Item Correlation Matrix for Perceived Cohesion Scale

#### Cronbach Alpha

PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
1.00	.685	.730	.635	.719	.446
.	1.00	.589	.831	.674	.607
		.1.00	.638	.819	.532
			1.00	.754	.689
				1.00	.608
					1.00

## Appendix E

### Approval to Conduct the Study

**From:** Rebecca Alley [mailto:[RALLEY@exchange.clemson.edu](mailto:RALLEY@exchange.clemson.edu)]  
**Sent:** Monday, September 29, 2008 12:18 PM  
**To:** [fkw@clemson.edu](mailto:fkw@clemson.edu); [whorton@clemson.edu](mailto:whorton@clemson.edu)  
**Subject:** Your IRB protocol # IRB2008-280,

Dear Dr. Williams and Ms. Whorton:

The Chair of the Clemson University Institutional Review Board (IRB) validated the protocol identified above using Exempt review procedures and a determination was made on **September 29, 2008**, that the proposed activities involving human participants qualify as Exempt from continuing review under **Category B1**, based on the Federal Regulations (45 CFR 46). You may begin this study.

Please remember that no change in this research protocol can be initiated without prior review by the IRB. Any unanticipated problems involving risks to subjects, complications, and/or any adverse events must be reported to the Office of Research Compliance (ORC) immediately. You are requested to notify the ORC when your study is completed or terminated.

Attached are documents developed by Clemson University regarding the responsibilities of Principal Investigators and Research Team Members. Please be sure these are distributed to all appropriate parties.

Good luck with your study and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Sincerely,  
Becca

*Rebecca L. Alley, J.D.*

IRB Coordinator  
Office of Research Compliance  
Clemson University  
223 Brackett Hall  
Clemson, SC 29634-5704  
[ralley@clemson.edu](mailto:ralley@clemson.edu)  
Office Phone: 864-656-0636  
Fax: 864-656-4475

## Appendix F

### Survey Announcement

**From:** SUSAN S WHORTON

**Sent:** Monday, October 20, 2008 10:27 PM

**Subject:** Invitation to complete student survey tomorrow for chance to win \$50 Visa gift card

**Importance:** High

Hello! My name is Sue Whorton and I work with new transfer students at XXXXXX. Tomorrow I will be sending you an on-line survey regarding your experiences and perceptions as a new transfer student this semester. Your participation in this survey is so important as the information you provide will be used to better serve new transfer students in the future.

**Participation in this survey is voluntary and it should take less than 10 minutes to complete.**

**Students who complete the entire survey can enter an electronic drawing to win a \$50 Visa gift card.** The gift card could be used for things like filling your gas tank, buying groceries, or getting that new video game you've been wanting!

When you receive the email and survey link tomorrow, I would greatly appreciate it if you would take 5-10 minutes to complete the survey. All survey responses will be kept confidential.

Thanks so much.

Sue Whorton

## Appendix G

### Survey Invitation

**From:** Sue Whorton  
**Sent:** Tuesday, October 21, 2008 7:37 PM  
**To:** XXXXXXXXX Transfer Students

Good afternoon! My name is Sue Whorton and I work with new transfer students at XXXXXXXX. I am writing to request your participation in an on-line survey regarding your experiences and perceptions as a new transfer student. The link to the survey can be found at the bottom of this message. As one of the newest members of the XXXXXXXX community, your feedback is very important as it will assist XXXXXXXX staff and advisors in better serving new XXXXXXXX students in the future. **The survey should take no more than 10-15 minutes to complete.**

**Students who complete all of the survey questions can enter their name in an online drawing and become eligible to win one of the \$50 Visa gift cards that will be awarded to 10 students.** These cards can be used for things like filling your gas tank, buying groceries, or getting that new video game you've been wanting!

Your participation in this survey is completely voluntary and all of your responses will remain strictly confidential. There will be no penalty if you do not wish to complete this survey. If you have any questions concerning this survey project, contact Dr. Frankie Keels Williams at 864-656-1491. Questions about your rights as a participant can be directed to the Clemson University Office of Research Compliance at 864-656-6460.

Please click on the link below to complete the survey. Thanks so much for your participation and valuable feedback.

**Follow this link to the Survey:** [SSID=SS\\_3rZicFZ2cms94nW](SSID=SS_3rZicFZ2cms94nW)

**Follow this link to opt out of future emails:** [MLRP\\_293Hb8kwD7](MLRP_293Hb8kwD7)

Sue Whorton

## Appendix H

Test for Normality of Academic Self-Efficacy Data for Respondents who Completed all SE-Broad Items and For Respondents who did not Complete all SE-Broad Items

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Completed all SE-Broad items	134	.986	134	.191
Did not complete all SE Broad items	5	.896	5	.386

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Appendix I

Test for Normality of Academic Self-Efficacy Data for Transfer Transition Program

Participants who Completed all SE-Broad Items and for Transfer Transition Program

Participants who did not Complete all SE-Broad Items

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Completed all SE-Broad items	109	.988	109	.450
Did not complete all SE Broad items	5	.896	5	.386

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## Appendix J

Test for Normality of Academic Self-Efficacy Data for Transfer Transition Program

Nonparticipants who Completed all SE-Broad Items and for Transfer Transition Program

Participants who did not Complete all SE-Broad Items

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Completed all SE-Broad items	25	.988	25	.386
Did not complete all SE Broad items	5	.959	5	.386

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## Appendix K

Test for Normality of Academic Self-Efficacy Data for Transfer Transition Program

Participants and for Transfer Transition Program Nonparticipants

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	114	.989	114	.480
Transfer transition program nonparticipant	25	.959	25	.386

---

## Appendix L

Test for Normality of Perceived Cohesion Data for Transfer Transition Program

Participants and for Transfer Transition Program Nonparticipants

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	114	.842	114	.000
Transfer transition program nonparticipant	25	.873	25	.005

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Appendix M

Test for Normality of Fall 2008 Credits Earned Data for Transfer Transition Program

Participants and for Transfer Transition Program Nonparticipants

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		Shapiro Wilk		
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	114	.892	114	.000
Transfer transition program nonparticipant	25	.894	25	.013

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## Appendix N

Test for Normality of Fall 2008 GPR Data for Transfer Transition Program Participants  
and for Transfer Transition Program Nonparticipants

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	114	.962	114	.002
Transfer transition program nonparticipant	25	.910	25	.030

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## Appendix O

Test for Normality of Academic Self-Efficacy Data for Early (Fall 2008) Survey

Respondents and Late (Spring 2009) Survey Respondents

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	119	.991	119	.597
Transfer transition program nonparticipant	20	.923	20	.113

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Appendix P

Test for Normality of Perceived Cohesion Data for Early (Fall 2008) Survey Respondents  
and Late (Spring 2009) Survey Respondents

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	Shapiro Wilk			
	<i>n</i>	Statistic	df	Sig.
Transfer transition program participants	119	.837	119	.000
Transfer transition program nonparticipant	20	.946	20	.311

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