BRIDGING THE GAP BETWEEN ACCESS AND SUCCESS: A STUDY OF THE IMPACT OF AN ACCESS AND SUCCESS PROGRAM ON ACADEMIC OUTCOMES OF LOW-INCOME COLLEGE FRESHMEN

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In response to the increasing cost of college, colleges and universities are leveraging financial aid and academic support services to implement access and success programs intended to help financially disadvantaged students afford and persist through a baccalaureate degree program. This research is a study of the efficacy of one such program at a large research university in the southwestern region of the United States. The study sample included low-income program participants in four cohorts of freshmen enrolling for the first time in college from fall 2007 (Cohort 1) to fall 2010 (Cohort 4) and a comparison group of almost 400 low-income freshmen who enrolled for the first time in college in fall 2006 (the year prior to program implementation) for a sample total of over 2150 students. Approximately 64% were female, 36% were males, over 60% were African American and Hispanic, and over 75% were first generation college students. Logistic regression was used to measure probability and odds of their academic success and retention in the first year of college utilizing gender, ethnicity, parental degree attainment, and program participation as the independent variables. The logistic regression models illustrated that participation in the program netted a consistently positive and significant impact on academic success across all cohorts, increasing the odds ratio for academic success no less than three times in favor of program participants vis-à-vis the comparison group. The statistical models illustrated that the program netted a slight positive impact on the odds of
retention, particularly for African American students. Therefore, the principle implication that might be drawn from this study is that by strategically leveraging financial aid and academic support services, access and success programs can facilitate higher rates of academic success and retention for financially disadvantaged college students.
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CHAPTER 1
BACKGROUND, PURPOSE AND OVERVIEW

Access to success, not simply access, must be the goal.

--The College Board

Introduction

Studies have shown that investing in postsecondary education yields returns for the individual who is educated and the society in which they live (College Board, 2010). According to an earnings analysis for the Texas Commission for a College Ready Texas by Stanford economist Eric Hanushek (2007), a person with a bachelor’s degree is expected to earn $1.1 million more over a lifetime than a person who attains no academic credentials beyond a high school diploma. A college degree also increases individual civic engagement and sense of social responsibility resulting in benefits to the community at large (Bowen, Chingos, & McPherson, 2009; Carnevale & Desrochers, 2004; College Board, 2010; Pascarella & Terenzini, 1991, 2005).

Despite the established benefits of postsecondary education and a baccalaureate degree, low income students attend and graduate from college at rates that lag behind those of their more affluent peers (Bowen, Chingos, & McPherson, 2009; Tierney, Corwin & Colyar, 2005). Students who could most benefit from the transformational opportunities made possible by postsecondary education are less likely to begin and even less likely to complete a baccalaureate program in a timely manner (Bowen, Chingos, & McPherson, 2009; Moore & Shulock, 2007). Utilizing Census data, the Pell Institute reported on the degree completion rates of low income traditional
students: “In 2000-01, low income students were much less likely to have completed their bachelor’s degree by the age of 24 than students in the higher income groups. Six percent of low income students had completed a bachelor’s degree by age 24, compared to 19% and 52% for the middle and high income groups respectively” (Pell Institute, 2005, p. 11).

Problem Statement

Since admission and matriculation do not automatically equate to the attainment of a baccalaureate degree, university administrators face a challenge to help financially disadvantaged students successfully finish college. This challenge to degree attainment can be deconstructed into two components (Bowen, Chingo, & McPherson, 2009; De Aenlle, 2010; Fabrikant, 2009; NCES, 2003; Tierney, Corwin & Colyar, 2005):

1. Perceptions of decreased affordability, caused by tuition increases that make college seem less affordable, and decreased funding for financial assistance for students
2. Inadequate academic and social preparation for college success

An affordability study commissioned by the National Association of State Universities and Land Grant Colleges (NASULGC) in 2008 reports that the compounded annual growth of tuition at public research institutions increased two and a half times faster than the increases in consumer prices (CPI) and two times faster than the increases in median family income from 1996 to 2006 (Choy, 2004; College Board, 2007). This is a trend precipitated by decreasing public appropriations for higher education and increasing numbers of students (Bowen, Chingos, & McPherson, 2009; Passel & Cohn, 2008; Tierney, Corwin & Colyar, 2005). The NASULGC report also
includes a projection of the proportion of family income that will be required to pay tuition for higher education in 2036 (table 1).

Table 1

Proportion of Family Income Required to Pay Tuition

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<th>2006</th>
<th>2036</th>
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<tr>
<td>Tuition – Private</td>
<td>57.3%</td>
<td>97.9%</td>
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<tr>
<td>Tuition – 4 yr. Public</td>
<td>11.1%</td>
<td>28.5%</td>
</tr>
<tr>
<td>Tuition – 2 yr. Public</td>
<td>5.5%</td>
<td>6.4%</td>
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Source: University Tuition, Consumer Choice and College Affordability, NASULGC, 2008

Looking at the NASULGC report, it is no surprise then that cost of attendance is perceived by low income families to be a luxury beyond reach despite the promise of a good return on their investment. Meanwhile, government-sponsored need-based financial aid has not kept pace with rising college costs. According to the College Board (2008), by measure of inflation-adjusted dollars, the Pell Grant “reached its highest value in 1975-1976 and has not returned to that level since. Today, the Pell Grant, which at its maximum covered 99% of the average costs of attendance at public two-year institutions, 77% at public four-year institutions and 36% at private colleges and universities, promises at best to cover 62%, 36% and 15% respectively, of these costs” (College Board, 2008, p. 30).

Whereas need-based state grant aid for college students increased 59% collectively from 1997 to 2007, the average award in the 2006-2007 academic year for a full-time baccalaureate student ranged from a high of $1043 in New York to $0 in South Dakota with a national average of $440 per student (College Board, 2008). The average cost of attendance was more than $13,000 for the 2006-2007 academic year (College
The average need-based state grant award meets only a small portion of the cost of attaining a bachelor’s degree.

Compounding the financial pressures are expectations from federal and state agencies that in spite of decreasing monetary support higher education institutions will admit and enroll increasing numbers of students from historically underrepresented and at-risk populations as a result of demographic changes across the country (Passel & Cohn, 2008). As such, postsecondary institutions must be more efficient with resources, doing more with even less in service to the neediest students.

Providing low income students with the financial aid necessary to afford a postsecondary education is not the only assistance many of these students require in order to progress toward and successfully complete a college degree. Bound, Lovenheim, and Turner (2010) report that when participation, academic achievement, and completion rates are compared, low income students face more obstacles in the pursuit of academic success than their more affluent peers. According to Tinto (2004) only about 25% of low income students had earned grade point averages of B+ or higher at the time of graduation from high school, and only 13% of these students then gained access to a four-year institution. A report published by the National Center for Education Statistics (NCES) (Wei & Horn, 2002) indicates that only 77% of low income students earn a high school diploma, as compared with 90% of middle- and upper-income students. The NCES also reported that more low income students (25%) earn SAT and ACT scores in the bottom quartile than their more affluent peers (12%), and less (21%) earn scores in the top quartile than middle- and upper-income students (34%). Furthermore, only 69% of low income students complete a baccalaureate degree.
in five years compared to 75% of higher income degree recipients (Bound, Lovenheim, & Turner, 2010). Even though low income status alone is not a significant predictor of academic underachievement, there is evidence that it does impact the student’s time to graduation. According to a 2003 NCES report, no differences were found in undergraduate persistence rates at 4-year institutions between students from different economic backgrounds, but Pell Grant recipients were less likely to earn a baccalaureate in 6 years than students who had not been awarded the need-based grant.

**Purpose of the Study**

In response to the increasing cost to attend college and the lower graduation rates of low income students, some universities began to develop and deploy access and success programs intended to help this group of students (Bowen, Chingos, & McPherson, 2009). These programs were designed to reduce “sticker shock” for and the amount of student loan debt that may be incurred by low income undergraduate students by providing financial aid for tuition and fees for an average of four years, and coordinate students’ academic and social connections to their campuses (University of North Carolina at Chapel Hill, 2006).

Although quite a few access and success programs have been established around the country, no study has been conducted to show the effectiveness of these initiatives in promoting student success. Using data from a large research university in a Southwestern state of the United States, this study seeks to show the impact of its access and success program on the academic attainment of low income students. It is
my hope that the results of this study will provide a practical model and planning resources for institutions considering an access and success program.

Research Questions and Hypotheses

The following research questions guided this study:

1. Does participating in the access and success program have an impact on the academic success of low income students in their freshman year after controlling for school, family and pertinent socio-economic factors?

2. Does participating in the access and success program affect the retention of low income students from freshman year to sophomore year after controlling for school, family and pertinent socio-economic factors?

Following are the research hypotheses for this study:

1. After controlling for school, family and pertinent socio-economic factors, low income students who participate in the access and success program will achieve higher levels of academic success in their freshman year than non-participants (i.e. the comparison group).

2. After controlling for school, family and pertinent socio-economic factors, low income students who participate in the access and success program will be retained from their freshman to sophomore year at higher rates than non-participants (i.e. the comparison group).

Theoretical Framework

According to Perna and Thomas (2006), the attempts to pinpoint the most effective and efficient access and success programming are hampered by at least three significant limitations:

1. The lack of a coordinated, comprehensive approach to policies and practices supporting access and success

2. The lack of clearly defined and consistently applied criteria for “student success”
3. The lack of consistent findings in research due to the use of multiple theoretical and methodological approaches across and even within disciplines

In response to the limitations they identified, Perna and Thomas (2006) developed “an overarching conceptual framework that policymakers, practitioners, and researchers may use to guide the development, implementation, and evaluation of policies and [programs] for improving success for all students and reducing persisting… socioeconomic gaps in student success” (p. 3). The framework is comprised of the principal contexts influencing a student’s academic attainment which are: the student’s internal context (e.g. their decisions and behaviors), the family context, the school (organizational) context, and the broader socio-economic and political context (see Figure 1). The model illustrates that there is not a uniform or singular path to postsecondary educational attainment given the multiple contexts influencing student success. Additionally, the model is an acknowledgment that college access and success are inseparably intertwined, residing together in contextual layers in that each have bearing on the students’ preparation for and participation in the educational attainment process. For the purpose of this study, however, I will focus on school context effects on a student's academic success at a four-year university as reflected in the research questions.
Figure 1. Conceptual model of student success (adapted from Perna and Thomas, 2006).

Significance of the Study

Recent studies have evaluated the economic cost of student attrition after the first year of college and found that this earlier departure is costing the tax payers over $9.1 billion (Schneider, 2010). As a result of concern over the decreasing numbers of college degrees earned in the United States as compared with college degrees earned
by other developed nations (OECD, 2010), student access and success initiatives have become a national priority, and the Obama Administration has proposed a five-year, $3.5 billion dollar College Access and Completion fund to build partnerships that will span the local-to-federal spectrum in order to improve the rate of college degree completion particularly for low income students. This funding will then be made available to evaluate and perpetuate access and success programs that have proven to be successful (U.S. Department of Education, 2010).

Despite strong interest in promoting student success among low income students, little research on postsecondary access and success program efficacy to facilitate degree attainment for low income students has been done. This lack of research on program efficacy may give rise to questions about the usefulness and sustainability of such programs in the current economic climate and in light of the academic and social challenges faced by many of these students once they arrive on a college campus (Bowen, Chingos, & McPherson, 2009).

This study will have strong implications for practitioners and policy makers as colleges and universities consider funding sources and administrative efficiencies to support access and success programs that demonstrably increase the academic attainment levels of their low income students.

Definition of Terms

Following are the operational definitions of the key terms used in this study:

- Academic success: For the purpose of this study, academic success is defined as earning no less than 30 semester credit hours and no less than a 2.5
cumulative grade point average in the freshman year.

- **Access:** In this study, access is defined as financial aid awarded to low income students pursuing a baccalaureate degree, sufficient to defray all their tuition and course fees costs for four years, but contingent on their academic success as defined above.

- **Access and success program:** An initiative at a four-year institution that uses a combination of federal, state and institutional financial aid and the deployment of academic and social support services for low-income students to provide them with affordable access to college for four years and increase their rate of degree attainment.

- **Low income student:** A student from a family with an adjusted gross income at or within 150% of the poverty line. Poverty guidelines, used to determine financial aid, are published annually by the U.S. Department of Health and Human Services.

- **Retention:** Uninterrupted progression from year one to year two of college.

**Limitations and Assumptions**

One of the limitations of this study is that data was not available on the student’s engagement in on-campus activities (academic, social/recreational, cultural, etc.); hence the impact of the college environment on the students’ academic success or struggle during their first year is not measured.

Another limitation is that random selection and assignment were not used, which limited the generalizability of this study. As a result of this limitation, administrators, policymakers, and others who utilize the findings of this study at their institutions may not observe the same outcomes. However, it must be noted that key data elements for
every access and success program participant at the study site and these data elements should help readers decide if the results of this study would then apply to their respective institution.

This study was established on the following assumptions: (a) all the information provided by the students regarding their socioeconomic status is truthful and accurate, and (b) the student records (i.e., GPA, registration status) kept by the university are accurate without any mistakes.

Summary

This study consists of five chapters. The first chapter is the introduction including problem statement, research questions and hypotheses, definition of terms, theoretical frameworks, and the significance of study. Chapter 2 is the review of the literature on access and success in college, followed by a discussion of the research method in chapter 3. Chapter 4 presents the study findings, and chapter 5 offers conclusions and implications.
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

The volume of literature that directly or indirectly reports on the variables that influence a student’s academic journey toward a college degree is extensive “to the point of being unmanageable” (Pascarella & Terenzini, 1991, p. 387). However, several theoretical models have dominated the studies of access to and success in college. In this chapter I review the theories recurrently guided research on collegiate access and academic success. Additionally, I describe in detail the theoretical framework chosen as the foundation for this study. Finally, the four contexts that comprise the theoretical model are reviewed and the interplay between the multiple contextual inputs and their impacts on institutional access and success programs are summarized.

Dominant Theoretical Models in Access and Success Literature

Several theories and college impact models appear in social sciences literature recurrently and have perennially framed policy and research about and efforts to support student persistence through or explain student attrition from college. These college impact theories and models that popularly guide research on institutional programs for college students include Vincent Tinto’s (1975, 1987) theory of student departure (student integration model), John Bean’s (1981) model of student attrition, and Alexander Astin’s (1993) input-environment-output (I-E-O) model.
Vincent Tinto’s theory of student departure (1975, 1987) describes a longitudinal process through which the student progresses in course of the college-going experience, seeking to identify occasions for institutional impacts on a student’s decision to persist or to depart, i.e., to transfer or drop out of college altogether. The model that emerged from Tinto’s theory has influenced research on student attrition, describing the convergence of a college student’s pre-entry attributes, goals and commitments, institutional experiences, academic and social integration, and the manner in which the cumulative effects from these variables might impact the student’s decision to persist or desist. Pre-entry attributes include family background, skills and abilities, and prior schooling; goals and commitments prior to the student’s arrival on campus include the student’s intentions and goals, and institutional commitments to the student; and institutional experiences include those that take place, formally and informally, within the academic realm and the social realms. Integration is then experienced, to varying degrees, within and as a result of the academic and social realms. Subsequently, goals and commitments are reevaluated by the student as a result of institutional experiences and the degree to which academic and social integration took place, and are weighed against the commitments held by the student that are external to the institution. The outcome from the convergence of these elements is the student’s departure decision. According to Pascarella and Terenzini (1991), an awareness and understanding of these critical interactional junctures might enable administrators to “design academic and social programs and experiences intended to promote students’ educational growth” (p. 53). However, Tinto’s work has
been criticized for lack of attention to the two-way process of integration necessary to support students’ access to and success in college.

Citing the research of William Tierney (1999), Anderson, Stephenson, Millward and Rio (2004) explain:

The concept of engagement as a reciprocal activity opens the door to an interpretation wherein the activity of engagement may be seen as a mechanism not just for the student to adapt to, or integrate into, the institution, but for the institution to also adapt to diverse students. Failure to engage or integrate may be as much a function of…the institutional attitude. (p. 84)

The effects of the Tinto model were tested by Cabrera, Nora, and Castaneda (1993); and whereas the discrete factors in the model demonstrated a statistically significant impact, the researchers cautioned against a disaggregated approach to access and success programming. Services provided in a random, disjointed fashion fail to address the complex interplay of the factors experienced by the individual student.

*Bean’s Model of Student Attrition*

John Bean’s model of student attrition (1981), originating in organizational theory as an industrial model, describes background variables, organizational determinants, intervening variables (i.e., attitudinal measures of commitment to persistence), and environmental variables that impact a student’s intent to depart or persist to graduation. It was the first such model to employ measures of attitude as variables in attrition prediction. Bean then revised his model in 1981 renaming it the synthetic causal model of student attrition with the intention of describing attrition from a single institution and not the attrition process in general. His revised model synthesizes key elements from previous research on student persistence (i.e., Locke, 1976, & Price, 1977) that
contribute to academia’s understanding of a student’s attrition from the institution in which they are enrolled. He grouped the intervening variables into the following four clusters:

1. Background variables refer to student characteristics such as attitudes, plans, and beliefs held before college

2. Organizational variables refer to those which can be verified by observing a student’s actions or their record (e.g. interactions with a faculty member, degree of participation in campus organizations, student enrollment data, etc.)

3. Environmental variables refer to anything not directly associated with the college in which the student is enrolled, but that is relevant to the student’s decision to remain in school, such as opportunities to transfer, secure full-time employment and military draft

4. Attitudinal and outcome variables refer to attitudes toward college and institutional policies, and the student’s evaluation of the educational experience

The organizational and environmental variables in Bean’s model can be simultaneously occurring during the student’s journey through the college experience, and the model concludes with the assumption of a causal linkage between the attitudinal and outcome variables and the student's intent to continue through or to drop out of college. Bean’s model is concerned with attrition and therefore, like Tinto’s theory of student departure, provides only limited usefulness for research about institutional support programming for post-secondary academic attainment and access and success program efficacy.

Astin’s I-E-O Model

Alexander Astin’s (1993) I-E-O model was developed to guide educational assessments, and rests on the premise that evaluations should include student inputs, the student’s educational environment, and the student’s educational outcomes. The
student inputs are characteristics, qualities and experiences with which the student begins a program such as demographics, gender, behavioral patterns, beliefs and perception and other conditions that might serve as control variables in research. The student’s educational environment refers to program elements that such as faculty, facilities, campus climate and other conditions that might influence student outcomes. The outputs are the “talents” (p. 18) that the educational program seeks to nurture or develop in the student and might include measurable indicators such as grades and baccalaureate degree completion. Astin did caution, however, that the student’s educational environment may be endogenous to inputs, e.g. socio-economic status (SES) influences what schools are attended, and may create causal effects (Herzog, 2010). The model does not take into consideration, however, broader environment impacts on student access to and success in college such as the availability of federal and state financial aid and the economic climate.

Perna and Thomas Model of Student Success

Despite the abundant research concerned with post-secondary academic attainment, the attempts by very well-intentioned government and education leaders to pinpoint the most effective and efficient collegiate access and success programs and practices continued to be hampered by at least three significant limitations (Perna & Thomas, 2006):

1. The lack of a coordinated, comprehensive approach to policies and practices supporting access and success

2. The lack of clearly defined and consistently applied criteria for “student success”
3. The lack of consistent findings in research due to the use of multiple theoretical and methodological approaches across and even within disciplines

Responding to a call by the Social Science Research Council for a study that would comprehensively explore the multifaceted approaches to and interdisciplinary definitions of student access to collegiate success, Perna and Thomas (2006) developed “an overarching conceptual framework that policymakers, practitioners, and researchers may use to guide the development, implementation, and evaluation of policies and practices for improving success for all students and reducing persisting…socioeconomic gaps in student success” (p. 3). The access and success challenge may be grasped more readily when the problem is dissected and the contributing variables are subsequently addressed in appropriate sequence or combination in ways that increase student educational attainment.

Perna and Thomas (2006) conducted a cross-discipline review of current research in college student success and found that educational attainment is a longitudinal process shaped by multiple levels of context and varied across student groups. The review led them to the following conclusions:

1. Attention to the issue of student success varied across disciplines
2. Within disciplines, there was variation on the aspects of academic success being researched
3. A broad base of theoretical approaches for understanding students’ academic success exits and varies across disciplines
4. Research methods and data sources varied across disciplines
5. The unit of analysis varied according to disciplinary approach and theoretical framework
6. Attention given to the differences in academic success across groups varied according to discipline
They also indicated that access and success programs are often guided by multiple theoretical and methodological approaches. These theoretical approaches usually come from the field of sociology, economics and psychology. For example, cultural capital is the most commonly cited sociology theory in discussing student success, and the most commonly cited economic theory is human capital theory. Cognitive theories are the most commonly cited psychological perspectives in the discussion of student success. A notable number of research articles also use a conceptual model comprised of multiple theoretical perspectives from the various disciplines.

Perna and Thomas (2006) stated that after further reflection on the literature, they created a model (Figure 1) that integrated the major theoretical perspectives from all the disciplines (i.e., sociology, economics, psychology, and education). This model illustrates the interaction of multiple contexts to influence student success. The principal influencing contexts, according to Perna and Thomas (2006), include (a) the student’s internal context (their decisions and behaviors), (b) the family context, (c) the school context, and (d) the social, economic and political context.

Perna and Thomas’ (2006) model shows that, given the multiple contexts influencing student success; there is not a uniform or singular path to post-secondary educational attainment. Additionally, the model is an acknowledgment that access and success are inseparably intertwined, residing together in contextual layers in that each have bearing on the students preparation for and participation in the educational attainment process. Perna and Thomas’ framework for understanding influences on a student’s post-secondary access and success effectively illustrates the ongoing
interplay between multiple inputs affecting academic attainment (Tierney & Venegas, 2009). Although the primary emphasis of this study is access and success program efficacy in the school context, it is nonetheless important to understand and explore what the literature says about the influence of variables brought from the other contextual layers to bear on student academic attainment.

The Internal Context

Perna and Thomas' (2006) academic attainment model illustrates the centrality of personal attitudes, motivations, and behaviors to the student's academic aspirations and attainment. This context – the student's self-system – is complex, reaching into the psychosocial domain and comprised of personality, self-esteem, and identity or self-concept aspects that predispose an individual to respond or act in a certain way (Pascarella & Terenzini, 1991). The variables in this context are subjective and therefore make them more difficult to operationalize and measure. Nonetheless, there are indicators that trend positively with collegiate access and success.

Individual Perceptions of Situational Constraint or Opportunity

The student's perception of situational constraint or opportunity influence their participation in post-secondary education and their trajectory toward academic attainment is then helped or hindered by choices the student makes when faced with alternatives. Patricia McDonough's (1997) qualitative study of students attending four different California high schools spanning the college preparatory educational spectrum (i.e., a working class public school to a private, preparatory academy) provides
thoughtful insight into this crisis of opportunity and the factors influencing the students’ choices:

Every student filters her college options through the lenses of her academic achievement, her economic circumstances, her field of vision, and her values. Given these ability, economic, and value constraints, a student eventually narrows down the [options] to a piece of opportunity structure that she believes is within her grasp. (p. 151)

Whether or not to attend college following high school is a challenging decision for low-income and first-generation students, in particular. McDonough’s (1997) study found that perceptions of cost, geographical convenience and their academic abilities were substantial factors for low-income students, leading 55% of those who were college-bound to choose a local two-year community college as a way to “try out” higher education in a local, affordable setting. However, once a student has committed to pursuing and has gained access to post-secondary education, the focus of their commitment must change in order for educational attainment to continue, and perceptions about opportunities for access to academic success and the feasibility of persisting to graduation will be influenced by additional attitudinal variables.

Academic Work Ethic and Achievement Motivation

One of the few agreed-upon variables in the literature on key factors influencing student academic attainment is academic preparation, and the student’s academic readiness for the rigors of postsecondary education influences the student’s attitudes toward and behaviors in college, and vice versa (Rau & Durand, 2000). Tinto (1975) and Bean (1981) posited that a student’s academic background would exert influence on persistence and performance in college; and indeed, high school grade point
average (GPA), academic skills (e.g. time management skills, study skills, and study habits) and college entrance exam scores have been found to be indicators of a student’s postsecondary persistence (Lotkowski, 2004). This continues into college, where the student’s GPA in their first year becomes a predictor of persistence (Braunstein, McGrath, and Pescatrice, 2001; Pascarella and Terenzini, 2005), and where conversely a low GPA indicates a higher probability of attrition (Swail, 2004).

A student’s academic self-confidence and achievement motivation have been found to have a positive correlation to academic performance (Lotkowski, Robbins & Noeth, 2004; Brackney & Karabenick, 1995; Chemers, Hu, & Garcia, 2001; Ruban & McCoach, 2005). Two of the most cited longitudinal studies on student preparation for and success in college are Clifford Adleman’s *Answers in the Toolbox* (1999) and *The Toolbox Revisited* (2006). One of Adleman’s principal conclusions is the importance of student engagement to degree completion, specifically that student choices reflecting active and responsible participation in college are predictive of their timely attainment of a baccalaureate degree (Adelman, 2006). The indicators that a student is an active participant and has assumed responsibility for academic attainment has been delineated in both of the *Toolbox* studies as the completion of 20 or more credits in the first 12 months of enrollment while earning a GPA in the top 40% of the distribution (Adelman). The merger of a student’s commitment to academic advancement and their response to and interaction with the conditions that exist on campus are also referred to by George Kuh (2007) as student engagement.

Engagement, according to Kuh (2007), is characterized by the student’s time and effort on academic tasks, relationships with faculty and peers, and experiences or
perceptions resulting from university administrative policies, academic support, co-
curricular and cultural programming, and physical infrastructures. Kuh further defines conditions and behaviors that facilitate and encourage strong student engagement as: “purposeful student-faculty contact, active and collaborative learning, and institutional environments perceived by the student as inclusive and affirming and where expectations for performance are clearly communicated and set at reasonably high levels” (p. 8). The degree to which a student becomes actively engaged in academic and social activities and feels integrated into the campus community has been positively related to both grades and persistence (Kuh, 2007). And persistence manifest as continuous enrollment is a particularly important engagement behavior for low SES students as it significantly increases their chance for degree completion (Adelman, 1999; Cabrera & La Nasa, 2003).

Gender

Differences in the college-going rates of men and women and the subsequent disparity in the number of degrees earned by each group are noteworthy. In recent years, women have begun to outnumber men in undergraduate programs at a rate of more than 1.7 to 1 and for every 100 men earning a baccalaureate degree there are 134 women doing the same (NCES, 2011). Women are also completing their undergraduate degrees in a more timely manner than their male counterparts. According to a report by the Bureau of Labor Statistics (2011), “while nearly 1 in 4 women had earned a bachelor’s degree by the October when they were age 23, only 1 in 7 men had done so,” and African American males were lagging even further behind.
These outcomes may be due in part to differences in the study habits of men and women before and during college. Women are reported to spend more time preparing for class and interacting with their teachers than men which results in better grades and higher levels of engagement on campus (McCarthy & Kuh, 2006; Mortenson, 2006).

### The Family Context

Experiences that shape and form a student’s academic motivation, particularly those that ultimately promote or detract from academic attainment, are introduced and reinforced by parents and other family members. Family values influence the student’s perception of college access and the value of a post-secondary education (Cheng & Starks, 2002; Karen, 2002).

### Parental Involvement, Education, and Cultural Capital

Family support for K-12 achievement does result in the student manifesting higher performance and motivation for academic success. Tierney and Auerbach (2005) report that the “aspects of parent influence most strongly correlated with achievement include parents’ aspirations and expectations for their children, monitoring of behavior and school work, communication with school staff, and a warm but firm ‘authoritative’ rather than strict ‘authoritarian’ parenting style” (p. 35). The importance a family places on active learning and intelligence vis-à-vis rote memorization, personal responsibility and respect vis-à-vis conformity and obedience, have also been positively correlated with academic achievement (Tierney & Auerbach, 2005).
According to Tierney and Auerbach (2005), family support and parental encouragement for a student’s post-secondary attainment, i.e., the degree to which students and parents interact with each other on the topic of selection of and enrollment and success in a post-secondary program, may have “more impact on student aspirations than the ‘immutable’ factors of family SES or student ability” (p. 41). In the same way that parental or familial expectations about a student’s performance at the secondary level can influence academic success, expectations about college enrollment communicated to their student from an early age also has important implications for post-secondary attainment. And when parents or guardians are confident that their participation in the academic experiences and success of their student is not just important but welcome, they are less likely to remain on the sidelines (Tierney & Auerbach, 2005). However, according to Auerbach (2001, in Tierney & Auerbach, 2005), “patterns of family engagement in education are fundamentally shaped by social class and race, and mediated by cultural and individual psychosocial factors” (p. 36).

Demographics (Socioeconomic Status, Race/Ethnicity)

Adelman’s (2006) study found that the only demographic characteristic that had a significant impact on baccalaureate degree completion was socioeconomic status, where the four-year college degree completion rate of a student in lowest SES quintile group was 36%, as compared with 55% of students from middle income families, and 80% of students from the highest SES quintile group. Family networks are constructed and exchanges typically take place with peers sharing a similar socioeconomic status resulting from occupational interactions and from activities afforded by family income,
and parental occupational status and family earnings bring to bear varying degrees of assistance to the student’s pursuit of academic attainment. The student’s participation in activities and interactions with other individuals that may help prepare them for and sustain them through the college experience is significantly influenced by their family background (Berger, & Milem, 1999; Hossler, Schmit & Vesper, 1999; Paulsen and St. John, 2002; Walpole, 2003). In fact, Walpole (2003) found that almost 50% of the low income college students in her study spent less than one hour per week on academic enrichment, whereas high SES students report greater rates of engagement in these activities.

In a comprehensive review of literature and research finding about the role of families on students’ preparation for, enrollment and academic achievement in college, Tierney and Auerbach (2005) uncovered different trends across ethnic groups and specifically that social class, race and cultural differences fundamentally shape family support and engagement in this process. Higher SES White families intervene more readily and confidently with the schools on behalf of their students seeking assistance and special consideration, whereas “students of color are more likely to be triply disadvantaged by lower track placement, by parents’ lack of knowledge about and participation in the placement process, and schools’ greater responsiveness to the requests and demands of higher SES White parents” (p. 36). Furthermore, the review indicated that approximately two thirds of Latino families participating in a national survey did not have fundamental college knowledge. The differences in parental involvement in the college preparation process may explain differences in SAT scores of White, African American and Hispanic/Latino students. The College Board (2011)
reports that in 2010 the mean aggregate reading and mathematics SAT scores for Whites was 1064, for African Americans was 855, and for Hispanic/Latino students was 916.

College enrollment soon after high school also varies by ethnicity. In 2009, 71.3% of White high school completers enrolled in college, as compared with 69.5% of African American and 59.3% of Hispanic high school completers (NCES, 2011). The Tierney and Auerbach (2005) literature review also reported on the wider gaps that exist between students of color vis-à-vis White students aspiring to earn a degree and the actual completion of a degree. This finding continues to be supported in the most recent NCES Condition of Education report (2011): “Between 1975 and 2010…the gap in bachelor’s degree attainment between Blacks and Whites increased from 13 to 19 percentage points, and the gap between Whites and Hispanics increased from 15 to 25 percentage points” (p. 74). Interestingly, differences exist between ethnicities in selection of a college or university based on the institution’s reputation, i.e. African American “culture values caring and community ties over academic reputation and prestige in college choice” (Tierney, Corwin & Colyar, 2005, p. 34).

School Context

The principal focus of this study is the efficacy of a post-secondary institutional access and success program, and specifically the influence exerted by key variables on retention, GPA and semester credit hours earned in the first year. However, the student’s academic journey starts long before reaching college, and therefore it is appropriate to explore what research has uncovered about the influence of the
academic climate of the high school attended as well as the post-secondary interventions that influence a student’s access to and academic success in college.

Academic Climate of the High School the Student has Attended

Numerous studies have shown that the academic rigor and academic experiences in high school affect success in college regardless of family income and other demographics (Gladieux & Swail, 1998; Horn & Kojaku, 2001; Warburton, Bugarin, & Nunez, 2001; Adelman, 2006). However, whether or not a student participates in rigorous, college preparatory coursework is contingent on whether or not such courses are offered by the high school they are attending and whether the student is helped to understand the importance of completing a college preparatory curriculum; and as mentioned previously, academic preparation is key to student success in college.

In a synthesis of research on the topic of rigorous academic preparation, Perna (2005) reported that the college preparatory courses are much more readily available in affluent schools, but that “schools with predominantly African American and Latino student bodies have also been found to offer fewer college preparation courses than other schools” (p. 122). Unfortunately, the students who are underrepresented in higher education are also those who are least equipped with the knowledge required to tackle the rigors of college coursework. In her review of the prior research, Perna found that “lower-income, African American, and Hispanic students are less likely to be academically prepared for college because of the characteristics of the schools they tend to attend and because of such practices as curricular tracking and ability grouping”
It is important to note that Perna’s findings reflect traits of schools the students attended not racial/ethnic traits. McDonough (1997) found that the variance in the emphasis in high school (i.e., by counselors and teachers) on preparing students academically and emotionally for college yielded different results in the student’s college-going decisions. Not surprisingly, students attending a private, college preparatory school considered themselves prepared for, if not actually entitled to, admission to selective four-year public or private colleges and universities (McDonough, 1997). In contrast, only 15% of students attending a large, public high school in a working class neighborhood with a student-counselor ratio of 400-1 chose to attend a four-year post-secondary institution (McDonough, 1997).

Beyond just providing opportunities for study “institutional structures, policies, programs, and services (whether academic or nonacademic), as well as the attitudes, values, and behaviors of the people who occupy (and to some extent define) institutional environments, are all seen as potential sources of influence in students' cognitive and affective changes” (Pascarella & Terenzini, 1991, p. 57). Unfortunately, segregated communities can mean inferior resources, which translate then into inferior levels of education and academic aspirations for minority or low-income students (O’Brien & Zudak, 1998). Wenglinsky (1998) reported that financially weaker schools in lower SES neighborhoods typically struggle to attract and keep qualified teachers, which may be a factor contributing to lower student grades. This is an important point, as grades earned in high school account for 25 to 33% of the variance in grades earned during the first year of college (Pike & Saupe, 2002). However, Perna’s (2005) synthesis
found that, even though the academic climate in the school enhances or detracts from the student’s academic achievement, schools with a strong academic emphasis “may be particularly effective in raising the achievement of lower-income and minority students” (p. 123). According to Perna:

[A]cademic emphasis was a factor composite measuring teachers’ perceptions of the extent to which students respect others who earn higher grades; students work to improve their performance; the learning environment is ordered; students are able to achieve academically; students complete their homework; and students seek extra help from teachers. (p. 123)

Postsecondary Interventions

A meta-analysis of research on the effectiveness of retention interventions (Patton, Morelon, Whitehead, & Hossler, 2006) found that the studies were limited in their usefulness (i.e., not appropriately rigorous), and the book Student Success in College that details a study of twenty institutions which had achieved and sustained higher than expected student retention rates concludes that no single model exists for a quintessential access and success program (Kuh, Kinzie, Schuh, Whitt et al., 2005). Consequently, the lack of an effective one-size-fits-all access and success program model and the lack of rigorous research on retention initiatives (Patton, et. al, 2006; Spradlin, Rutkowski, Burroughs, & Lang, 2010) create a challenge and an opportunity for this study. The review of literature that follows on post-secondary student access and success interventions is organized into three broad categories: financial assistance, engagement programming and academic support services.

Financial assistance supports initial and ongoing access to college, and gift aid in the form of grants and scholarships, in particular, is a contributing factor to successful
recruiting and higher rates of student retention especially for low-income and other underrepresented student groups (Oseguera & Rhee, 2009; St. John 2002; Swail, Redd & Perna 2003). Studies have found that need-based institutional grants have had a particularly positive effect on the persistence component of student success (Fenske, Porter, & DuBrock 2000; Murdock, 1990; Porter 1989), but that degree completion rates were lower for students who received student loan aid, particularly underrepresented students (Horn, 1998; Murdock, 1990; Perna 1998). Therefore, access and success programs that maximize the use of grant aid to support the persistence of low income students toward degree attainment, minimizing or eliminating the need for student loans, might expect participants to achieve higher degree completion rates on average.

In response to the increasing cost of higher education, decreased public funding, higher student loan debt, and the lower retention and graduation (i.e., academic success rates) of low-income students, universities began to develop and deploy access and success programs intended to help those most in need of tuition assistance and at possible risk of attrition. Leading the charge was the University of North Carolina (UNC) - Chapel Hill, and in 2006 the university hosted a national conference themed the Politics of Inclusion: Higher Education at a Crossroads. One of the outcomes from the conference was a printed inventory of initiatives established by twenty-three diverse college campuses to facilitate the access of students from lower-income families to higher education. Key elements of these access initiatives - student eligibility criteria, type and amount of financial aid awarded to participants, cost-of-attendance expenses defrayed by the program, and conditions for ongoing student eligibility - showed some commonalities across the 23 programs listed in the inventory (Appendix A).
All of the programs with the exception of one detailed the financial stipulations that demonstrate a student’s financial need (e.g. qualify for a Pell grant, annual family income at or under a specific dollar amount, etc.). Ten of the 23 programs carried a state residency requirement. Four programs stipulated that for the initial award, a student must be new to college (i.e., a freshman or first time in college). Three programs carried admission or financial aid application deadlines. And only one university stipulated that a student must be first-generation in college (i.e., neither parent has earned a bachelor’s degree or higher). Nineteen programs awarded some gift aid (i.e., grants) and five programs were funded entirely by grants and scholarships. Thirteen programs also awarded federal work-study assistance, and eleven programs were supplemented by loans. The average amount of grant aid in the students’ award packages was 91%, federal work-study aid was 5%, and loan aid was 8.25%. Four programs, however, did not specify the composition of their students’ financial aid packages. Using a combination of federal, state and institutional grants and scholarships, five programs fully funded the student’s direct cost of attendance expenses. The other programs used loan aid to supplement federal, state and institutional grants and scholarships to help eligible students pay for tuition, course fees, books, room and board.

In the review of these 23 programs, each was categorized as either “access only” or “access and success” initiatives delineated by program goals. Access only programs had college affordability as their chief goal, whereas access and success programs co-joined the goal of college affordability with support for student academic success. In the latter category there were seven programs and as such a renewal of program eligibility
from year to year was contingent on the student meeting specific academic performance criteria such as earning making satisfactory academic progress and completing a predetermined number of semester credit hours within the academic year.

According to Tinto (1999), 75% of students leave higher education for non-academic reasons. This statistic indicates that colleges and universities have the opportunity to develop and deliver financial and social interventions and thereby increase their student success rates. Institutional factors that provide appropriate social and academic support are important elements in the retention, persistence and timely graduation of students (Swail, Redd, & Perna, 2003). Colleges and universities cannot retroactively control for the quality of their students’ secondary education experiences, of course. However, administrators and faculty with a clear understanding of who needs proactive and intrusive academic support services can guide the implementation and strategic leveraging of programs and polices intended and proven to increase students’ chances for persistence and degree completion.

A student’s engagement with and integration into college life is experienced within both academic and social realms, and the degree to which academic and social engagement takes place is a key element in a departure decision, i.e., whether to persist in college until graduation, transfer or drop out (Tinto, 1987). Whereas the institution would have no influence over a student’s experiences prior to arrival on campus, student engagement is a condition over which the institution has a measure of influence. Conditions and behaviors that facilitate and encourage strong engagement are “purposeful student-faculty contact, active and collaborative learning, and institutional environments perceived by the student as inclusive and affirming and where
expectations for performance are clearly communicated and set at reasonably high levels” (Kuh et al. p. 8).

Alexander Astin’s theory of involvement (1984) encouraged unified organizational efforts toward achieving the goal of engaging students more fully in the college academic and social environment as a means of fostering the students’ potential for success and subsequently the student’s commitment to their collegiate experience. A concern and interest in their students’ perceptions of engagement opportunities and experiences has led over 1300 different colleges and universities since 2000 to administer the National Survey of Student Engagement (NSSE) on their respective campuses. The survey is designed to help post-secondary institutions understand how they might improve practices inside and outside the classroom to enhance their students’ connection to their overall collegiate experience. Engagement and persistence in and through the first to second year of college is particularly salient to the issue of increased graduation rates since an arithmetic relationship between the rate of retention and graduation exists, i.e., “attrition rates are halved each subsequent year after the first year” (Levitz, Noel, & Richter, 1999, p. 37). Examples of engagement opportunities offered to students with varying degrees of effectiveness to support success in college include mentoring, learning communities, and part-time employment on campus.

Mentoring programs have varied structures and delivery methods, from classroom-based peer-led formats to one-on-one informal meetings between a faculty or staff member and a student. A standard operational definition for collegiate mentoring programs was not found, and a review of the literature on the effects of mentoring programs for college students on retention, grades, and credits earned produced scant
and mixed results. Some studies reported that there is no evidence that mentoring programs, as a singular intervention, effect greater rates of persistence, higher grades or credit hours earned (Patton et al., 2006), while another reports that persistence rates of underrepresented students being mentored are higher than those who are not (Torres & Hernandez, 2009). The argument in favor of peer mentoring programs, in particular, is based on Tinto’s theory of integration (1987) and Astin’s theory of involvement (1984) where academic and social engagement is facilitated through peer relationships resulting in positive-effects on persistence (Pascarella, 1980; Pascarella, Smart, & Ethington, 1986; Pascarella & Terenzini, 1980, 1991).

Learning communities are “programs that enroll groups of students in a common set of courses usually organized around a theme and frequently linked with residence life experiences” (Kuh, Kinzie et al., 2006, p. 83). Empirical research has shown that participation in this type of academic support programming contributes to student retention, higher GPAs, and credit hours completed (Pascarella & Terenzini, 1980a; Taylor, Moore, MacGregor, & Lindblad, 2003). The combination of academic and social connectivity achieved when participants interact with the same group of peers in the classroom and residence hall over the course of the academic year, contributes to student development (Schuh, 2004) as well as a greater sense of satisfaction with the college experience (NSSE, 2005). Astin’s (1993) description of activities that positively impact the student’s collegiate experience are a veritable blueprint for many learning community environments: frequent student-faculty and student-student contact and interactions, time spent studying and preparing class assignments, and involvement in tutoring and group discussions.
Part-time campus employment, in contrast with working off campus, provides students with a double benefit: a salary and an additional opportunity to gain cultural and social capital, i.e., routine contact with faculty, staff and other students. Work-study and other part-time campus employment requiring approximately 15 hours per week can contribute to student success (Kuh et al., 2005), and studies found that even off-campus employment requiring less than 15 hours per week might also have a positive effect on average GPAs and timely graduation (De Jardin, Ahlburg, & McCall, 2002; Gleason, 1993; Hood, Craig & Ferguson, 1992; King, 2002) although these do not provide students with the benefit of a closer connection to the campus community. Part-time campus jobs alongside faculty and staff, where student work schedules are constructed around class and exam schedules, might be particular important to the engagement and success of low income students who otherwise might invest less time pursuing academic, cultural and social capital and more time pursuing economic capital (Walpole, 2003).

Examples of academic support services that contribute to retention and timely graduation include advising, and learning assistance programs. Targeted academic advising at key junctures to help students make their way through college is important to student success in college (Kramer, 2003), particularly for those who had not decided on a major, wanted to change their major, and for first-generation students (Tinto, 2004). The preferred academic advising models incorporate faculty and professional advising staff in the service strategy (Upcraft, Gardner, & Barefoot, 2005), where faculty focus on guiding the students through the academic program and full-time advisors guide the students through registration, policies and procedures. Quality student-
directed principles that guide the practice of effective academic advising have been identified by various groups and associations. However, the common theme across all these organizations calls for academic advising to: “Provide leadership about effective ways to promote student learning and development; value student interests and their educational needs and expectations; [and] be conducted ethically, with full respect for students and colleagues” (Kramer, 2003, p. 210). Students who are satisfied with their academic advising experiences in college tend to be more engaged academically across various sectors of campus (NSSE, 2005), and intrusive, proactive advising co-joined with early alert systems are especially important and effective for students who begin college with two or more factors that place them at risk for attrition (Kuh, Kinzie, Buckley, Bridge, & Hayek, 2006).

Learning support programs may include services such as supplemental instruction, tutoring, and assistance with assignments through a writing or math lab. Supplemental instruction programs are, as the name indicates, supplemental to classroom instruction where “a student who has done exceptionally well in a particular course is paid to re-attend the same class along with novice learners, and helps the novices both individually and in group sessions that are regularly scheduled outside of class time” (Kramer, 2003, p. 281). Peer tutoring also involves the assistance of academically successful students with an advanced understanding of an academic subject and key academic skills with less advanced students. Supplemental instruction and peer tutoring provide both the peer teacher (tutor) and the peer learner with measurable gains in learning as an outcome of their interactions, where the tutor achieves greater understanding of the material taught to their peers and the learner is
being coached by a fellow student at a more proximal stage of cognitive development to their own as compared with an academic authority figure (Kramer, 2003). Research findings strongly suggest that colleges and universities should deliver academic support programming proactively and intrusively instead of passively waiting for students to avail themselves of the help they may need to achieve academic success, as timely academic support contributes not only to higher grades, but also students’ persistence to degree completion (Kramer, 2003).

Institutional factors that provide appropriate social and academic support are important elements in the retention, persistence and timely graduation of students (Swail, Redd, & Perna, 2003). Administrators with a clear understanding of the young people on their campuses most in need of support services can guide the implementation and strategic leveraging of programs and polices intended and proven to increase students’ chances for persistence and degree completion.

**Social, Economic and Policy Context**

Social, economic and policy forces constitute the fourth context identified by Perna (2006) as influential on student academic achievement. In this context, social influences might be described as those that create perception about accessibility to college, not limited to perceptions of affordability but also perceptions of entitlement to a post-secondary education at a given institution and competence navigating the college-going process. Economic influences in this context might be described as those that impact the cost of college attendance such as tuition and fees costs and state appropriations for education and federal financial aid. And policy influences on student
academic achievement in college might be those described as creating and sustaining a college-completion culture through legislation or programs and operating procedures.

Social Context

Not the only factor, but one of the main influencers on a student’s enrollment in college, according to sociology literature, is parental post-secondary educational experience (Conley, 2001; Hofferth, Boisjoly, & Duncan, 1998; Hong & Ho, 2005; Tierney & Auerbach, 2005). In conjunction with implicit and explicit expectations about post-secondary academic attainment, college-educated parents possess and bestow knowledge about the preparation necessary for their student to pursue and gain admission to college and persist to graduation, imparting on their student what is referred to as cultural capital: “Cultural capital is the knowledge, skills, education and other advantages a person has that make the education system a comfortable, familiar environment in which he or she can succeed easily” (Oldfield, 2007, p. 2).

Cultural capital is considered “a set of high-status linguistic and cultural competencies that children inherit from the families,” (Tierney & Auerbach, p. 33), an accumulation of skills and knowledge sought and valued by the upper social echelon, but not taught in school. The sociologist Pierre Bourdieu (1986) differentiates cultural capital from economic and social capital, where economic capital refers to financial resources and social capital refers to personal networks and group resources. Indeed, all forms of capital bestow privilege on those who possess it. In this context, economic capital facilitates access to college and social capital refers to a network of associates.
and knowledge acquired from social exchanges that can be deployed to aid the student’s advantage in school and college.

The families of students that possess cultural capital have navigated through the process of applying and paying for admission to their university of choice, selecting a major, engaging in campus life, achieving the required grade point average, and persisting through the required coursework to earn a degree. As stated previously, these family members are mentors, providing a knowledge advantage to their student and serving as the initial guides who provide advice about college preparatory coursework, adequate preparation for the SAT and ACT, the college selection process, and completion of financial aid paperwork, all in advance of their student arriving on a university campus.

Whereas 50% of middle- and upper-income students are from families where at least one parent had a college degree, 66% of low-income students are first-generation (NCES, 1998). It is quite possible that even when first-generation, financially disadvantaged students are academically qualified for college, they lack the cultural capital to apply for college and persist through the challenges of campus life (Horn, 1998; Ishitani 2003, 2006) which can be at least as demanding as earning a good grade point average (Oldfield, 2007).

Student perception of opportunity for college access varies across the socio-economic spectrum, and the decision process driving the if-or-where to attend college is too complex to be explained simply though frameworks developed by functional economists or policy makers. Drawing on Bourdieu’s (1986) concept of habitus, McDonough (1997) posited that students’ social contexts create the norms for behavior
and for their expectations about if and where to attend college and that the “college
choice process is not the economist’s rational choice model of a world with perfect
information, nor is it a policy maker’s model of informed consumer choice accounting for
cost and comfort considerations” (p. 150). McDonough explains that a student’s habitus
defines and limits what they perceive; and therefore habitus – a disposition resulting
from socialization in and to an external schema of perceptions, actions and opinions –
may contribute to or detract from a student’s pursuit of a post-secondary degree. The
connection between this external-most context and the student’s internal context is
clear: the environment in which the student spends her time influences her perceptions
about present and future opportunities, leading “students [to] believe they are entitled to
a particular kind of collegiate education based on their family and/or high school
habitus” (p. 152). Citing previous studies, Walpole (2003) also addresses the impact of
habitus on a student’s academic aspirations, persistence and attainment explaining that
a student from a low SES background would have been influenced by habitus to
develop lower aspirations and “predispose him or her to use educational strategies that
may be less successful in attaining the desired social profile” (p. 50). However, the
social context found at a college or university will provide opportunities for a student to
obtain additional cultural and social resources and academic capital that will then impact
future economic outcomes. An understanding of this phenomenon may affect how a
college or university deploys its outreach and academic support resources to impact
students’ aspirations and predispositions and to communicate a message of inclusivity
and welcome to individuals from all backgrounds.
The social context also frames the student’s perception of money, i.e., family, friends and other peer groups influence consumption decisions. The student’s opinion of whether or not college is a worthwhile long-term investment, affordable, and worth the opportunity cost, is influenced by their habitus:

Affordability is a personal assessment of whether an object or action is within the financial grasp of an individual. This assessment is based on an individual’s already developed and highly specified personalized assessment of their need, cost-benefit tolerance, understanding of value, and understanding of competing demands in the wake of financial scarcity. (McDonough & Calderone, 2006, p. 1716)

An implicit cost-benefit comparison may, however, affect a positive influence on the perception of low SES families about the affordability or the investment value of college. A high school counselor interviewed by researchers described how she explains the future benefits of a college degree to her students and their families:

It’s a lot of money…but that isn’t even a new Lexus. And if you think of it in that respect, what do you have at the end of four years? You’ve got a degree from Berkeley or UCLA or Davis or Notre Dame, or wherever and you’ll always have that. And that will get you entry into a lot of places. (McDonough & Calderone, 2006, p. 1712)

However, a growing concern is that students and their families are incurring burdensome student loan debt in order to access the opportunity to earn a college degree. The lower and middle class American families are borrowing to finance a portion of the cost of college attendance, and average debt levels are estimated at $16,000 for bachelor of arts degree recipients from a private college and an average of more than $10,000 for public university graduates (Wellman, 2006; Lewin, 2008). Walpole (2003) did find that where low SES were spending less time on the accumulation of social and cultural capital, they were spending more time accumulating economic capital than their more affluent peers. Over 50% of low SES students
reported working more than the optimal 15 hours per week on average, as compared with only 37% of their high SES peers. Walpole summarized the finding of her study as follows: “Students from low SES backgrounds who attend four-year colleges and universities work more, study less, are less involved and report lower GPAs than their high SES peers” (p. 63). More hours spent working would naturally leave less time for studying and involvement in academic enrichment activities, which might then have a negative impact on a student’s progress to timely graduation.

Economic and Policy Impacts

In 1947, the commission on higher education convened by President Truman stated a clear concern about the potential negative impacts of inequity in access to post-secondary education:

By allowing the opportunity for higher education to depend so largely on the individual's economic status, we are not only denying to millions of young people the chance in life to which they are entitled; we are also depriving the nation of a vast amount of potential leadership and potential social competence which it sorely needs. (Quoted in Mumper, 1996, p. xv)

Since that time, federally- and state-funded financial aid as a means to collegiate access and success has been critical to any attempt to ensure equal opportunity for a postsecondary education. Studies have found that low-income students’ access to and persistence in college is enhanced when they receive financial aid to defray the cost of attendance (De Jardins et al, 2002; Heller, 1999, Perna, 1997; Paulsen & St. John, 2002; St. John, 1989, 1990). As such, policy makers and analysts consider the linkage between financial aid and the cost of attendance to be the sine qua non of initial and
ongoing access to postsecondary education (McDonough, 2004 in McDonough & Fann, 2007).

Federal Policy Impacts

Federal financial aid programs, broadly defined as grants, tax credits and guaranteed loans, emerged with the adoption of the G.I. Bill in 1944. This step toward direct funding of higher education was then followed by the Perkins Loans program (National Defense Loan Program), and subsequently by the adoption of the Higher Education Act of 1965 which established the framework for many of the financial aid programs still in place today. The Pell Grants were established in 1972, and in the late 1990s Congress implemented tax incentives in a move away from direct funding of higher education (Burgdorf & Kostka, 2006). Students seeking federal financial aid complete the Free Application for Federal Student Aid (FAFSA) form, and the number of students so doing in 2008-09 increased by 16% over 2007-2008. A welcome increase in federal gift aid was adopted in 2008 by congress with the reauthorization of the Higher Education Act of 1965 (currently referred to as the Higher Education Opportunity Act). The Pell Grant, long stagnant, will increase from approximately $4300 to $5400 over five years. The same legislation increased federal loan limits by $2000 and reduced interest rates for students on these loans (Zumeta, 2008).

Federal policy that supports direct aid to students is not the only option with which policy makers might support academic attainment, however. The announcement of a 5-year, $2.5 billion fund signaled the Obama administration’s commitment to the collegiate access and success of underrepresented student groups and particularly
those from disadvantaged backgrounds. The fund is intended to evaluate and grow federal-state-local partnership programs that increase college enrollment and graduation (The White House, 2009) predicated on the concern for human capital and the decline of post-secondary degree attainment in the United States relative to population growth (OECD, 2008).

Hanushek (2007) found an important correlation between the economic growth of a country and its education system: greater educational attainment over the next 20 years would result in a 30% rise in the gross domestic product (GDP), which far exceeded the public sector expenditure on education at the time of his study which was 4.4% of the GDP. Therefore the investment in higher education, according to Hanushek’s calculations, earns significant returns for the American economy and an economic imperative exists to increase the college-going and graduation rates in the United States. The socio-economic benefits of a college education are not limited to the opportunity for increased earnings and a hardier tax base for a given region, however. The incidence of incarceration drops with higher education attainment where “1.2% of adults with only a high school diploma [are] behind bars compared with only 0.1% of those with college degrees,” and dependence on welfare due to poverty or unemployment is notably decreased as higher education attainment increases (Hanushek, 2007). Furthermore, the public socio-economic benefits of higher education manifest themselves in the development of new technologies since universities are centers of knowledge creation and research (Hill, Hoffman & Rex, 2005). It might be reasonably argued, then, that increasing college completion rates are a national economic imperative.
State Policy Impacts

The influences and impacts of state policy on access to college are vital as the states have played an even greater role historically in the direct subsidy of public higher education than the federal government. The commitment of the states to providing access to higher education dates back to the founding of land-grant universities in the latter part of the 1800’s (Heller, 1999). Unfortunately however, state appropriations for education have been adjusted downward in the past two years as a result of the recession (i.e., decreases in sales tax, personal and corporate income tax revenues), and in 2004-2005, state funding per-capita for higher education reached a 25-year low (Wellman, 2006). The decreasing federal and state aid available to support students and institutions of higher education have contributed directly to the increases in the cost of enrollment and the need for colleges and universities to rely more heavily on tuition revenues. Even prior to the recent recession, real per-student appropriations had declined which, in conjunction with burgeoning college enrollments, compelled colleges and universities to increase tuition and fees (NASULGC, 2008). And tuition and fees pricing policy, adopted and enacted at the state and institutional levels, exerts influence on students’ perceptions of access and degree completion opportunities.

According to Heller (1999) justification used by policy makers for the increase in public tuition levels is connected to the potential for future wage earnings that result from earning a college degree (i.e., that the benefits of higher education accrue less to society and more to the individual). These policy makers recommend that offsetting awards of financial aid be made to those who cannot afford the tuition, while middle-
and upper-income families would and could pay a higher price, a policy that has become known as “high tuition/high aid”:

By removing a ‘blanket’ public subsidy to all students regardless of need or susceptibility to financial incentives (i.e., doing away with low or no tuition) and putting in its place a subsidy explicitly targeted on students with need, the rationalization approach promises the rewards of both greater equity and greater efficiency. To assure equity the savings to be derived from tuition rises could be devoted to providing much more aid to needy, deserving students. (Hearn, Griswold, & Marine, 1996, p. 244)

Whereas states have historically funded access to higher education, outcomes-based incentives for post-secondary college completion are now being introduced by state governments to “reward state institutions who show high levels of retention and completion” (Spradling, Rutkowski, Burroughs, & Lang, 2010, p. 22). These incentives vary across state lines and include such items as increases in funding for low-income degree completion, enrollments funded upon successful course completions, and restrictions on the number of hours students may drop during a baccalaureate program (Spradling et al., 2010).

As evidenced by the concern articulated by the Commission in 1947, policy makers have long been addressing the potential barrier to access created by the real cost of attending college (Heller, 1999). However, despite public policies to support the college-going aspirations of socioeconomically disadvantaged youth, a 2002 commentary released by the Advisory Committee on Student Financial Aid reported that access to post-secondary education was closed to approximately 400,000 academically qualified, low-income students each year (St. John, Musoba & Simmons, 2003). Since the students were qualified to attend college, the report was able to identify the perceived and real lack of financial access as the reason for non-attendance.
Financial access is a matter of social and economic justice. In addition, as many states face tight budgets and weigh need-based and merit-based grant policies against each other, evidence of their impacts on access can help to guide state financial … [S]tates have a moral responsibility to the citizenry to maintain financial access for all students who are academically qualified. (St. John et al., 2003, p. 105)

Conclusion

Institutional efforts to support college access and success for low income students can be informed by the literature on each of the four contexts contained in the Perna and Thomas conceptual model (2006). Summaries of these findings for each context follow.

*Internal Context*

The development and deployment of a formal access and success program strongly signals an institution’s commitment to supporting the college aspirations of low-income students. Through community outreach and recruitment communications about the program, institutions can influence the student’s perception of opportunities for post-secondary degree attainment, potentially challenging a student’s internally-constructed barriers to access and success. Once the student arrives on campus, clearly communicating and demonstrating to them the institution’s expectations about their progress to timely graduation and support for their academic and co-curricular engagement can reinforce the student’s perception of their opportunity for ongoing access and success.
**Family Context**

Access and success program administrators should be aware of the challenges faced by low-income students, particularly those that are first in their families to attend college, as they seek to gain admission and then acclimate to college. Lacking direction and possibly support from their family, a student may have no knowledge of the infrastructure on campus that exists to facilitate their ongoing access and success, or the student may feel reluctant to use the services available. Access and success program administrators should proactively promote and guide students to these services on a regular basis, thereby helping to demystify the college campus culture. Furthermore, the impetus of some low-income students to invest more time on economic gain (i.e., working at the implicit or explicit encouragement of their families) than to invest time in their studies can be mediated with opportunities for part-time campus employment.

**School Context**

When evaluated individually, the efficacy of interventions deployed by colleges and universities to increase the rates of student retention has produced mixed results. However, a holistic approach to student success programming involving a combination of initiatives that include financial, academic and social support can be effective. A campus culture that promotes success by establishing expectations for achievement and tying outcomes to rewards motivates students to action, therefore specifically articulated academic achievement requirements can result in students earning more credit hours and higher cumulative GPAs. The removal of financial
obstacles through disbursement of educational grants can facilitate the persistence of low-income students, and as such access and success program guarantees of grants for tuition and fees for up to four years can positively influence the continuation rates of program participants from year one to year two. Furthermore, student participation in academically and socially engaging activities on campus facilitates their persistence. Therefore the engagement activities requirement of an access and success program and the corresponding opportunities for social and academic connections offered to program participants can contribute to their higher rates of retention.

**Social, Economic and Policy Context**

Federal and state policies on financial aid and pricing for tertiary education have multiple implications for institutions, however their impact on students has primarily been one of access, either restricting or facilitating students’ post-secondary participation: Tuition pricing policies can be access-restrictive whereas federal and state financial aid facilitate access. A broadening awareness of the national and local economic benefits of degree completion, however, has expanded the public conversation beyond access to higher education. A funded initiative introduced by the President at the federal level and changes in state policy are attempts at improving the rates of degree completion at public institutions.

In closing, the importance of creating a college-completion culture reflected in public policy, priorities set by K-16 educators, and conversations between parents and students cannot be understated. Since the core context for student success is comprised of individual values, attitudes and behaviors, it is essential that a college-
completion culture be promoted and affirmed early and often through multiple venues in order to shape the student’s vision for their future – a future built on a foundation of academic success. A student’s lack of internal motivation for academic success cannot be compensated for by financial aid or the support of families or public and institutional policies that promote a college-completion culture. In the end, “intervention strategies seeking to increase college participation rates among socioeconomically disadvantaged high school students need to be holistic. Given the high degree of interdependence between…resources, it is unrealistic to assume that one ‘single shot’ policy by itself would facilitate their success…” (Cabrera & La Nasa, 2001, p. 142).
CHAPTER 3

METHODOLOGY

As mentioned in chapter 1, the increasing cost of higher education (National Association of State Universities and Land Grant Colleges, 2008), net decrease in public funding (College Board, 2008), higher student loan debt (National Center for Education Statistics, 2010), and the lower retention and graduation (i.e., academic success rates) of low-income students (NCES, 2003) led universities to invest in institutional access and success programs, providing financial and academic support to help these students complete baccalaureate degrees. The literature review in the Chapter 2 shows that college access and success are inseparably intertwined and that the two are not mutually exclusive, residing together in contextual layers with each having bearing on the students’ participation in the educational attainment process (Perna & Thomas, 2006). In order for an individual to complete the requirements of a degree in a timely manner ongoing enrollment in credit-bearing courses is essential; and financial access opens the door to continuous enrollment. Access to continuous enrollment, however, is also contingent on the student’s success in the program of study where a minimum GPA must be earned and a minimum number of credit hours must be completed to avoid disruption of financial aid or academic disciplinary action (e.g. suspension).

The focus of this study is the impact of the school context from the Perna and Thomas (2006) model. Using data from a large research university in the southwestern United States, this study seeks to show the effect of the access and success program
on four cohorts of low income, first-year college students. The following research questions guide this study:

1. Does participating in the access and success program have an impact on the academic success of low income students in their freshman year after controlling for other school, family, and pertinent socio-economic factors?

2. Does participating in the access and success program affect the retention of low income students from freshman year to sophomore year after controlling for other school, family, and pertinent socio-economic factors?

Since formal access and success programs are recent additions to higher education initiatives (Bowen, Chingos, & McPherson, 2009), research on outcomes in these early days may serve to establish benchmarks and inform programmatic enhancements and help identify substantive administrative efficiencies. This chapter will discuss data collection method, population and sample, research variables, and the method of analysis.

Data Collection Method

The data used for this study were obtained from the university's institutional research office database, specifically information about the subjects’ gender, ethnicity, parental educational levels, grade point averages and progression from Year 1 to Year 2. These data were collected by the institution for each cohort's first academic year from 2007 to 2010 for a total of four cohorts, and data for the comparison group was collected in 2006.

Population and Sample

The site of this study was a large research university located in the southwestern region of the United States. The university enrolls almost 36,000 students and is
classified by Carnegie Foundation for the Advancement of Teaching as a research university-high research activities. The university’s 2010-2011 entering freshman class has an average SAT score of 1101 and almost 90% of the freshman cohort finished high school ranking in the top half of their class.

The access and success program at the study site was launched in April 2007 to ensure that academically capable but financially disadvantaged students would have every opportunity to attend the university and successfully complete a bachelor’s degree in a timely fashion with minimal debt. Beginning in the fall of 2007, any entering freshmen with an adjusted family income below $40,000 was eligible to participate in the access and success program and receive full tuition and fee support for four years.

More than just a financial assistance program, however, the access and success program at the study site connects students to campus resources and engages them in activities that facilitate their academic success and ultimately the timely completion of their bachelor degrees. The program is organized around three conceptual pillars:

1. Financial support: tuition and fees are paid for four years utilizing federal, state and institutional grants

2. Academic success: students must complete no less than 30 semester credit hours per academic year with a cumulative grade point average of 2.5 or higher

3. Campus connection: the opportunities to secure campus employment and mentoring are made available to every program participants and are intended to facilitate and strengthen their active engagement in the life of the university

By the second year, the program began to evolve in response to the campus connection requirement. The students were given generous study-abroad opportunities; they lobbied for and formed their own official student organization; a dedicated program center equipped with seven computers and manned by full- and part-time staff was
provided for them inside the financial aid department; and by the third year of the program had their own living/learning community on campus.

Over 1900 students (i.e., the study sample) have been served since the program began in the 2007-2008 academic year and they represent the ethnic diversity of the low-income first-year student population (Table 2). The cohorts were comprised of 408 \((n = 408)\) participants in fall 2007’s Cohort 1, 346 \((n = 346)\) in fall 2008’s Cohort 2, 492 \((n = 492)\) in fall 2009’s Cohort 3, and 668 \((n = 668)\) in fall 2010’s Cohort 4. Approximately 64% are female, 36% are male, and over 75% of the program participants are first generation college students (i.e., where neither the student’s mother nor father has earned a bachelor’s degree). The comparison group is comprised of low-income first-year students who met program selection criteria but enrolled at the university in Fall 2006, one year prior to the implementation of the program.

Table 2 reports the ethnic distribution of each cohort, Table 3 reports the mean SAT and ACT scores for each cohort, and Table 4 reports the percent of each cohort that graduated in 50\(^{th}\) percentile of their high school class.

Table 2

<table>
<thead>
<tr>
<th>Ethnic Distribution</th>
<th>2007 Cohort 1</th>
<th>2008 Cohort 2</th>
<th>2009 Cohort 3</th>
<th>2010 Cohort 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>15 38%</td>
<td>12 32%</td>
<td>15 34%</td>
<td>15 26%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11 19%</td>
<td>14 24%</td>
<td>16 27%</td>
<td>21 34%</td>
</tr>
<tr>
<td>White</td>
<td>64 34%</td>
<td>62 36%</td>
<td>58 33%</td>
<td>55 30%</td>
</tr>
<tr>
<td>Other</td>
<td>10 9%</td>
<td>12 8%</td>
<td>11 6%</td>
<td>9 10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 3

Mean Test Scores

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Cohort 1</td>
<td>n</td>
<td>Cohort 2</td>
<td>n</td>
</tr>
<tr>
<td>SAT</td>
<td>1023</td>
<td>1092</td>
<td>1098</td>
<td>1095</td>
<td>1101</td>
</tr>
<tr>
<td>ACT</td>
<td>21</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 4

Percent Graduating from Top 50th Percentile of High School Class

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Cohort 1</td>
<td>n</td>
<td>Cohort 2</td>
<td>n</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>22%</td>
<td>18</td>
<td>21</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>38%</td>
<td>47</td>
<td>51</td>
<td>52</td>
<td>50</td>
</tr>
<tr>
<td>50&lt;sup&gt;th&lt;/sup&gt;</td>
<td>95%</td>
<td>90</td>
<td>89</td>
<td>90</td>
<td>89</td>
</tr>
</tbody>
</table>

Variables

The dependent variables of this study are academic success and retention, specifically the subjects’ cumulative GPA and cumulative semester credit hours (SCH) earned, and retention from Year 1 to Year 2. For the purpose of this study, the two dependent variables were dichotomously coded as presented in Table 5. The independent variables for this study are (a) gender (b) ethnicity, (c) first generation college student status, and (d) program participant status. The coding used for the independent variables and their descriptions are presented in Table 6. The variables
used in the study are informed by prior research (Braunstein, McGrath, & Pescatrice, 2000; Gross, Hossler, & Ziskin, 2007; St. John 2002, 2004, 2005), and include factors from the internal, family, school and socio-economic layers of the Perna and Thomas (2006) contextual model.

Table 5

*Dependent Variables: Descriptions and Codes*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description and Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic success</td>
<td>Student earns 30 or more semester credit hours and no less than a GPA of 2.5 in the first academic year</td>
</tr>
<tr>
<td>Success (yes = 1, no = 0)</td>
<td></td>
</tr>
<tr>
<td>Retention</td>
<td>Student returns to the same university in the fall term immediately following completion of their first year of higher education</td>
</tr>
<tr>
<td>Retained (yes = 1, no = 0)</td>
<td></td>
</tr>
</tbody>
</table>

Table 6

*Independent Variables: Descriptions and Codes*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description and Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male = 1, Female = 0</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>African American, Hispanic and White are the ethnic variables included in the study, and will be coded into the following two dummy variables (White is used as the baseline group):</td>
</tr>
<tr>
<td></td>
<td>Hispanic (yes = 1, no = 0)</td>
</tr>
<tr>
<td></td>
<td>African American (yes = 1, no = 0)</td>
</tr>
<tr>
<td>Parental Education</td>
<td>No college degree = 1</td>
</tr>
<tr>
<td></td>
<td>College degree = 0</td>
</tr>
<tr>
<td>Program Participant</td>
<td>Yes = 1</td>
</tr>
<tr>
<td></td>
<td>No = 0</td>
</tr>
</tbody>
</table>
Method of Analysis

The study employed descriptive statistics to establish relevant comparisons and inferential statistics to address the research questions. Descriptive statistics were used to illustrate academic outcomes in the first college year, specifically mean semester GPAs, percentage of each cohort earning 15 or more semester credit hours in the fall and spring terms, and the percentage of students in the comparison group and each cohort progressing from the first to second year (i.e., percent retained). These descriptive statistical profiles created meaningful contextual comparisons between and illustrate any differences that may exist in the academic outcomes for each cohort and the comparison group (Gall, Borg & Gall, 1996). The comparisons described outcomes that may directly reflect the interventional effect of the access and success program on the academic success and retention of low-income college students, therefore the significance of outcome results was tested.

Following the descriptive analysis, logistic regression was conducted to enable the researcher to measure probabilities and odds of academic success and retention for each cohort. The function of logistic regression is to facilitate the prediction of a particular outcome (e.g. academic success) given a set of inputs (e.g. factors from the school context and socio-economic context), and was used to measure the probability and odds with which a given independent variable impacted the dependent variables (Braunstein, McGrath, & Pescatrice, 2000; Gross, Hossler, & Ziskin, 2007; Leach, Barrett, Morgan, 2008; St. John, 2004). Two logistic regression models were developed for each research question: gender, ethnicity, and parental education variables were included in Model 1; then, program participation was added to the aforementioned
independent variables in Model 2 thereby enabling the researcher to illustrate the true impact of the program. Key assumptions necessary for successful logistic regression analysis were considered including insuring the study includes an adequate sample size of more than 110 cases and the dichotomous coding of all nominal variables (Tabachnick and Fidell, 2001).
CHAPTER 4

RESULTS

This chapter presents and discusses descriptive statistics for each cohort and logistical regression analyses of academic success and retention predictors.

Descriptive Statistics by Cohort

The descriptive statistics in this chapter provide information about academic success and retention rates, by contextual variable and by cohort, across the lifespan of the program to date. These data provide meaningful comparisons between and illustrate any differences that may exist in the academic outcomes for each cohort and the comparison group (Gall, Borg & Gall, 1996).

Early rudimentary program evaluations for Cohorts 1, 2 and 3 seemed to indicate that the program may be having a positive influence the academic success and retention rates of participants (Table 7; Table 8). The percentage of the program participants that earned a 2.5 GPA and 15 or more hours in the first six semesters (i.e., fall and spring terms) of the program was equal to or higher than the percentage of the freshman population achieving the same outcome.

Additionally, when compared with the freshman population for a given cohort, the program participants earned more semester credit hours in the fall and spring terms on average. When compared with the freshman population from their respective cohorts, program participants had slightly lower cumulative grade point averages for the same time periods (Table 8).
Table 7

**Cohorts 1 through 3: Percent Earning a Combination of 15 semester credit hours (SCH) and 2.5 or Higher GPA**

<table>
<thead>
<tr>
<th>15 SCH and 2.5+ GPA</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
<th>Cohort 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All FTIC</td>
<td>Program Participants</td>
<td>All FTIC</td>
</tr>
<tr>
<td>Fall</td>
<td>33%</td>
<td>51%</td>
<td>36%</td>
</tr>
<tr>
<td>Spring</td>
<td>44%</td>
<td>44%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Table 8

**Cohorts 1 through 3: Mean Earned SCH and GPA in Fall and Spring Terms**

<table>
<thead>
<tr>
<th>SCH and GPA</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
<th>Cohort 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All FTIC</td>
<td>Program Participants</td>
<td>All FTIC</td>
</tr>
<tr>
<td>Fall</td>
<td>14.1</td>
<td>14.8</td>
<td>14.0</td>
</tr>
<tr>
<td>GPA</td>
<td>2.5</td>
<td>2.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Spring</td>
<td>14.1</td>
<td>14.6</td>
<td>12</td>
</tr>
<tr>
<td>GPA</td>
<td>2.6</td>
<td>2.3</td>
<td>2.6</td>
</tr>
</tbody>
</table>

The academic success and retention rates of the comparison group (n = 440) established a baseline of measures against which the outcomes achieved by program participants might reasonably be compared and inferences about the program’s efficacy might be drawn. As stated previously, the comparison group did not have the access and success program components as the foundation for their first year in college (i.e. the institutional financial assistance grant, unambiguous academic success expectations, or campus connection programming).
Descriptive Statistics for the Comparison Group and Program Cohorts (Fall 2007-Spring 2011)

The program, as it evolved over the first four cohorts, provided the framework within which dynamic interaction between variables from the Perna and Thomas contextual model naturally occurs. Following a brief description of the additional resources allocated to the program after its initial implementation in 2007, academic success and retention rates for each cohort and the comparison group are presented.

In 2007, the first year of the program, participant selection and student programming was simply achieved through collaboration across departmental and divisional lines and administrative efficiencies were maximized. By the second year of the program (i.e. 2008), however, a full-time program coordinator had been hired and additional institutional expenditures supporting opportunities for program participants to connect with the campus community and one another in substantive ways were implemented including grant-funded study abroad sessions, a program-specific student organization, dedicated infrastructure and expanded staff support. The third year of the program (i.e. 2009) brought program participants the opportunity to engage with one another both socially and academically via their own living-learning community. The program then achieved administrative “status quo” in 2010 and no further resources were added to those that were already deployed.

Table 9 presents descriptive statistics on the academic success rates of the comparison group and each cohort by gender, ethnicity, and parental degree attainment in their first year. Table 10 then presents descriptive statistics on the retention rates of program participants vis-à-vis the comparison group by gender, ethnicity, and parental degree attainment from the first to second year of college.
In Cohort 1, academic success rates by gender showed a variation slightly more than 5 percentage points, with the female students achieving a higher measure of success (49.8%) than the male students (44.4%). Differences in academic success outcomes by ethnicity varied by 11.5 percentage points between the two underrepresented student groups. African American students achieved a lower aggregated rate of success (34.4%) than the Hispanic students (45.9%). Fifty percent of students whose parents had earned a college degree achieved academic success (50.4%), a rate of only 4.2 percentage point higher than first generation students (46.2%).

In Cohort 2, academic success rates by gender showed a variation of less than 3 percentage points, with the female students achieving a slightly higher measure of success (43.5%) than the male students (41.2%). Differences in academic success outcomes by ethnicity varied by slightly more than 3 percentage points between the two underrepresented student groups. African American students achieved a slightly lower
aggregated rate of success (34.5%) than the Hispanic students (44%), and at 47.2%, White students’ rate of success was the highest in this cohort. First generation students in Cohort 2 also achieved at a lower aggregated rate of academic success (41.8%) than their non-first generation peers (45.8%). Academic success rates across all variables in this cohort ranged from 34.5% to 47.2%.

In Cohort 3, academic success rates by gender showed a variation of slightly more than 2 percentage points, with the female students achieving a higher measure of success (42.4%) than the male students (40%). Differences in academic success outcomes by ethnicity varied by just under 11 percentage points between the two underrepresented student groups. African American students achieved a lower aggregated rate of success (33.7%) than the Hispanic students (43.8%). At 43.1%, White students’ rate of success was less than 10 percentage points higher than their African American peers and 0.7% lower than the success rate of their Hispanic peers. Almost 44% of students whose parents had earned a college degree achieved academic success (43.9%), a rate of only 3.5 percentage point higher than first generation students (40.4%). Academic success rates across all variables in Cohort 3 ranged between 33.7% (African American students) and 43.9% (non-first generation students).

In Cohort 4, academic success rates by gender showed a variation of more than 3.5 percentage points, with the female students achieving a higher measure of success (46.9%) than the male students (43.5%). Differences in academic success outcomes by ethnicity varied by just under 8 percentage points between the two underrepresented student groups. African American students achieved a lower aggregated rate of success
(37.7%) than the Hispanic students (45.6%). At 49.3%, White students’ rate of success was 12 percentage points higher than their African American peers and less than 4 percentage points higher than the success rate of their Hispanic peers. Almost 49% of students whose parents had earned a college degree achieved academic success (48.8%), a rate of almost 5 percentage point higher than first generation students (43.9%). Academic success rates across all variables in Cohort 4 ranged between 37.7% (African American students) and 49.3% (White students).

In the comparison group, academic success rates by gender showed a variation of less than 2 percentage points, with the male students achieving a slightly higher measure of success (18.5%) than the female students (16.6%). Differences in academic success outcomes by ethnicity varied by less than 1 percentage point between the two underrepresented student groups. African American students achieved a slightly lower aggregated rate of success (15.6%) than the Hispanic students (15.9%). At 19.1%, White students’ rate of success was less than 4 percentage points higher than their African American and Hispanic peers. Less than 18% of students whose parents had earned a college degree achieved academic success (17.9%), which was only 1 percentage point higher than first generation students (16.9%). Academic success rates across all variables in the comparison group did not exceed 19.1%.

In Cohort 1, retention rates by gender varied slightly with female students progressing at a higher rate overall (81.2%) than male students (78.2%). African American students were retained at higher rates (82.9%) than Hispanic students and first generation students did not persist at the same rate as their non-first generation peers, with retention rates of 78.1% as compared with 86%. Retention rates across all
variables were higher, once again, than the corresponding attrition rates and all 
exceeding 78%.

Table 10

*Retention Rates: Comparison across Groups*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
<th>Cohort 3</th>
<th>Cohort 4</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>78.2%</td>
<td>83.3%</td>
<td>82.1%</td>
<td>81.1%</td>
<td>75.2%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81.2%</td>
<td>79.3%</td>
<td>83.1%</td>
<td>83.2%</td>
<td>74.9%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>African Am.</td>
<td>82.9%</td>
<td>87.3%</td>
<td>85.3%</td>
<td>80.0%</td>
<td>83.1%</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>78.2%</td>
<td>79.8%</td>
<td>84.7%</td>
<td>84.6%</td>
<td>70.7%</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>78.2%</td>
<td>78.0%</td>
<td>80.0%</td>
<td>78.6%</td>
<td>66.2%</td>
</tr>
<tr>
<td>Parental Degree</td>
<td>No Degree</td>
<td>78.1%</td>
<td>81.6%</td>
<td>83.4%</td>
<td>81.7%</td>
<td>73.2%</td>
</tr>
<tr>
<td></td>
<td>Degree</td>
<td>86.0%</td>
<td>79.4%</td>
<td>81.1%</td>
<td>83.6%</td>
<td>78.0%</td>
</tr>
</tbody>
</table>

In Cohort 2, retention rates by gender varied by exactly 4 percentage points with 
males in this cohort progressing at a higher rate (83.3%) overall than female students 
(79.3%). African American and Hispanic students were retained at higher rates – 87.3% 
and 79.8% respectively - than White students at 78%. First generation students from 
this cohort persisted at a higher rate than their non-first generation peers, with retention 
rates of 81.6% as compared with 79.4%. Retention rates across all variables were no 
less than 78%, with African American students retained at the highest rate (87.3%) and 
White students retained at the lowest rate (78%).

In Cohort 3, retention rates by gender varied by 1 percentage point with female 
students progressing at a rate of 83.1% and male students progressing at rate of 
82.1%. African American students were retained at highest rate among all variable in
this cohort (85.3%), and Hispanic students progressed at the second highest rate of 84.7% as compared with Whites at 80%. First generation students were retained a higher rate than their non-first generation peers, with retention rates of 83.4% as compared with 81.1%. Retention rates across all variables in this cohort exceeded 80%.

In Cohort 4, retention rates by gender varied by 2 percentage points with female students progressing at a rate of 83.2% and male students progressing at rate of 81.1% in Cohort 4. Hispanic students were retained at highest rate among all the variables reviewed (84.6%), with declines observed in Cohort 4 for African American students and White students at 80% and 78.6% respectively when compared with Cohort 3. First generation students were retained a higher rate than their non-first generation peers once again, with retention rates of 83.6% as compared with 81.7%. Retention rates across all variables in ranged from 78.6 to 84.6%.

In the comparison group, retention rates by gender varied by a fraction of a percentage point (0.3%) with males being retained at a slightly higher rate overall than female students. African American and Hispanic students were retained at higher rates - 83.1% and 70.7% respectively - than White students at 66.2%. First generation students did not persist at the same rate as their non-first generation peers, with retention rates of 73.2% as compared with 78.0%. Retention rates across all variables were higher, by far, than their corresponding attrition rates. African American students were retained at the highest rate (83.1%) and White students were retained at the lowest rate (66.2%).

In summary, changes in the retention rates for program participants vis-à-vis the comparison group were not as large as the average increases in success rates, as reported in Table 10. The highest increases achieved for program participants across
categories reached 8.3 percentage points in the gender variable, 14 percentage points in the ethnicity variable, and 10.2 percentage points in the parental degree variable. However, one category - African American – experienced declining retention rates for participants in both Cohort 1 (82.9%) and Cohort 4 (80.0%) vis-à-vis the comparison group. Overall, retention rates were lowest among participants in Cohort 2 and highest among program participants in Cohort 3.

Logistic Regression by Cohort

In the first step (Model 1), the impact of independent variables from the internal, family, and socio-economic contexts on the academic success and retention probabilities was examined using logistic regression across each cohort and for the comparison group. In the second step (Model 2), the impact of the program itself - a school context variable - was added to the other independent variables.

Logistic Regression Analysis of Academic Success Predictors by Cohort

Research Question 1 called for an evaluation of impact of key variables on academic success: “Does participating in the access and success program have an impact on the academic success of low income students in their freshman year after controlling for school, family and pertinent socio-economic factors?” This question is answered through the logistic regression analysis that follows.

Table 11 summarizes the logistic regression analysis for students in Cohort 1. Whereas gender and parental education had some effect on the likelihood of academic success, these variables did not exert a statistically significant impact. Findings in the table for Model 1 and Model 2 report that African American students were significantly
less likely to achieve academic success than their White peers. However, Model 2 indicates that the program, as an independent variable, exerted a very significant and positive impact on the likelihood of a participant achieving academic success, rendering the odds of success almost five times greater. Table 12 summarizes the logistic regression analysis for students in Cohort 2.

Table 11

Cohort 1: Probability and Odds of Academic Success

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>p-value*</td>
<td>Odds</td>
<td>B</td>
<td>p-value*</td>
<td>Odds</td>
</tr>
<tr>
<td>Gender</td>
<td>-.09</td>
<td>.56</td>
<td>.91</td>
<td>-.15</td>
<td>.38</td>
<td>.86</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>-.41</td>
<td>.02</td>
<td>.67</td>
<td>-.49</td>
<td>&lt;.001</td>
<td>.61</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>-.31</td>
<td>.15</td>
<td>.73</td>
<td>-.37</td>
<td>.11</td>
<td>.69</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.10</td>
<td>.57</td>
<td>.91</td>
<td>-.23</td>
<td>.20</td>
<td>.80</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.54</td>
<td>&lt;.001</td>
<td>4.66</td>
</tr>
<tr>
<td>n</td>
<td>770</td>
<td></td>
<td></td>
<td>770</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.011</td>
<td></td>
<td></td>
<td>.161</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>69.1</td>
<td></td>
<td></td>
<td>68.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Table 12

Cohort 2: Probability and Odds of Academic Success

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>p-value*</td>
<td>Odds</td>
<td>B</td>
<td>p-value*</td>
<td>Odds</td>
</tr>
<tr>
<td>Gender</td>
<td>-.05</td>
<td>.77</td>
<td>.95</td>
<td>-.02</td>
<td>.93</td>
<td>.98</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>-.48</td>
<td>.01</td>
<td>.62</td>
<td>-.46</td>
<td>.02</td>
<td>.63</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>-.09</td>
<td>.67</td>
<td>.91</td>
<td>-.17</td>
<td>.47</td>
<td>.85</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.03</td>
<td>.88</td>
<td>.97</td>
<td>-.13</td>
<td>.51</td>
<td>.88</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.33</td>
<td>&lt;.001</td>
<td>3.80</td>
</tr>
<tr>
<td>n</td>
<td>716</td>
<td></td>
<td></td>
<td>716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.013</td>
<td></td>
<td></td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>72.1</td>
<td></td>
<td></td>
<td>66.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Gender and parental education had some effect on the likelihood of academic success but did not exert a significant impact on the dependent variable in Model 1 or in Model 2. In Model 1 and Model 2, findings report that African American students were less like than their White peers to achieve academic success. The program included as an independent variable in Model 2, however, had a significant and positive impact on the probability of a student achieving academic success, rendering the odds of success almost four times greater.

Table 13 summarizes the logistic regression analysis for students in Cohort 3. In this analysis, none of the independent variables in Model 1 brought to bear a significant influence on the probability of academic success.

Table 13

**Cohort 3: Probability and Odds of Academic Success**

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$p$-value*</td>
<td>Odds Ratio</td>
<td>B</td>
<td>$p$-value*</td>
<td>Odds Ratio</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.011</td>
<td>.94</td>
<td>1.01</td>
<td>.03</td>
<td>.84</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>-.35</td>
<td>.05</td>
<td>.71</td>
<td>-.38</td>
<td>.043</td>
<td>.69</td>
<td></td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>.10</td>
<td>.62</td>
<td>1.10</td>
<td>-.03</td>
<td>.87</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.06</td>
<td>.69</td>
<td>.94</td>
<td>-.15</td>
<td>.39</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.23</td>
<td>&lt;.001</td>
<td>3.43</td>
<td></td>
</tr>
<tr>
<td>$n$</td>
<td>858</td>
<td></td>
<td></td>
<td>858</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.011</td>
<td></td>
<td></td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>71.0</td>
<td></td>
<td></td>
<td>63.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$

The findings in Table 13 for Model 2, however, are similar to the probabilities in Model 2 for Cohort 1 and 2, i.e., African American students were significantly less likely to achieve academic success than their White peers, and the program, as an independent variable, continue to demonstrate a significant and positive impact on the
likelihood of a student achieving academic success, rendering the odds of success over three times greater.

Table 14 summarizes the logistic regression analysis for students in Cohort 4. Once more, gender and parent education did not exert significant impact on the dependent variable for this cohort; but in Models 1 and 2, African American students were significantly less likely than their White peers to achieve academic success. The program, inserted as an independent variable in Model 2, continued to demonstrate a significant and positive impact on the probability of a student participant achieving academic success, rendering the odds of success over four times greater.

Table 14

*Cohort 4: Probability and Odds of Academic Success*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$p$-value*</td>
<td>Odds Ratio</td>
<td>$B$</td>
</tr>
<tr>
<td>Gender</td>
<td>-.12</td>
<td>.40</td>
<td>.89</td>
<td>-.23</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>-.46</td>
<td>.01</td>
<td>.63</td>
<td>-.46</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>.08</td>
<td>.64</td>
<td>1.08</td>
<td>-.15</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.09</td>
<td>.52</td>
<td>.91</td>
<td>-.15</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.44</td>
</tr>
<tr>
<td>$n$</td>
<td>1000</td>
<td></td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.017</td>
<td></td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>66.6</td>
<td></td>
<td>65.8</td>
<td></td>
</tr>
</tbody>
</table>

*$p < .05$

In each instance of the model across all cohorts, the Nagelkerk psuedo $R^2$ is higher when program is entered, indicating that the predictive strength of the model increased with the addition of this independent variable.
Logistic Regression Analysis of Retention Predictors by Cohort

Research Question 2 called for an evaluation of the impact of key variables on retention: "Does participating in the access and success program affect the retention of low income students from freshman year to sophomore year after controlling for school, family and pertinent socio-economic factors?" This question is answered through the logistic regression analysis that follows.

Table 15 summarizes the logistic regression analysis of retention for students in Cohort 1. Model 1 and Model 2 report that African American students were almost two times more likely to be retained than their White peers. Gender and parental education did not exhibit a significant impact on retention, however.

Table 15

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>( p )-value*</td>
<td>Odds Ratio</td>
<td>( \beta )</td>
<td>( p )-value*</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Gender</td>
<td>.03</td>
<td>.85</td>
<td>1.04</td>
<td>.02</td>
<td>.89</td>
<td>1.02</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>.67</td>
<td>.001</td>
<td>1.95</td>
<td>.67</td>
<td>&lt;.001</td>
<td>1.95</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>.16</td>
<td>.49</td>
<td>1.17</td>
<td>.16</td>
<td>.48</td>
<td>1.17</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.30</td>
<td>.13</td>
<td>.74</td>
<td>-.36</td>
<td>.07</td>
<td>.70</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>.40</td>
<td>.025</td>
<td>1.49</td>
</tr>
<tr>
<td>( n )</td>
<td>771</td>
<td>NA</td>
<td>NA</td>
<td>771</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.027</td>
<td></td>
<td></td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>76.9</td>
<td></td>
<td></td>
<td>57.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*\( p < .05 \)

Table 16 summarizes the logistic regression analysis for students in Cohort 2. Findings reported at a significant level in Model 1 and Model 2 show that African American students were over two times more likely to be retained than their White peers, and program participants were significantly more likely to be retained from year
one to year two. Once again, gender and parental education were not significant factors in the retention models.

Table 16

*Cohort 2: Probability and Odds of Retention*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>p-value*</td>
<td>Odds</td>
<td>B</td>
</tr>
<tr>
<td>Gender</td>
<td>.10</td>
<td>.59</td>
<td>1.10</td>
<td>.12</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>.80</td>
<td>&lt;.001</td>
<td>2.24</td>
<td>.84</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>.24</td>
<td>.30</td>
<td>1.27</td>
<td>.21</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.13</td>
<td>.51</td>
<td>.88</td>
<td>-.17</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>.54</td>
</tr>
<tr>
<td>n</td>
<td>718</td>
<td></td>
<td>718</td>
<td></td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.032</td>
<td></td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>77.6</td>
<td></td>
<td>59.8</td>
<td></td>
</tr>
</tbody>
</table>

*\(p < .05\)

Table 17 summarizes the logistic regression analysis for students in Cohort 3.

The findings in Table 17 for both Model 1 and Model 2 are very similar to the findings for Cohort 2 model. Model 1 and Model 2 report that African American students were significantly more likely to be retained – almost two times more likely - than their White peers. Model 2 indicates that the program did have a significant and positive impact on the likelihood of a student in Cohort 3 being retained from year one to year two, rendering the odds of their retention almost two times greater. Table 18 summarizes the logistic regression analysis for students in Cohort 4.

Model 1 and Model 2 report that African American and Hispanic students were statistically more likely than their White peers to be retained, rendering the odds of retention for students in these underrepresented groups almost two times greater.
Program participation significantly increased the odds that a student would be retained from Year 1 to Year 2, as well.

Table 17

*Cohort 3: Probability and Odds of Retention*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>p-value*</td>
<td>Odds Ratio</td>
<td>β</td>
<td>p-value*</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Gender</td>
<td>-.02</td>
<td>.91</td>
<td>.98</td>
<td>-.04</td>
<td>.81</td>
<td>0.96</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>.67</td>
<td>.001</td>
<td>1.96</td>
<td>.68</td>
<td>&lt;.001</td>
<td>1.98</td>
</tr>
<tr>
<td>Ethnicity – Hispanic</td>
<td>.36</td>
<td>.09</td>
<td>1.44</td>
<td>.30</td>
<td>.16</td>
<td>1.35</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.08</td>
<td>.67</td>
<td>.93</td>
<td>-.11</td>
<td>.54</td>
<td>0.89</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>.58</td>
<td>&lt;.001</td>
<td>1.79</td>
</tr>
<tr>
<td>n</td>
<td>859</td>
<td>859</td>
<td>859</td>
<td>859</td>
<td>859</td>
<td>859</td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.02</td>
<td>.04</td>
<td>.04</td>
<td>.02</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>78.9</td>
<td>78.9</td>
<td>78.9</td>
<td>59.0</td>
<td>59.0</td>
<td>59.0</td>
</tr>
</tbody>
</table>

* p < .05

Table 18

*Cohort 4: Probability and Odds of Retention*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>p-value*</td>
<td>Odds Ratio</td>
<td>B</td>
<td>p-value*</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Gender</td>
<td>-.04</td>
<td>.82</td>
<td>.96</td>
<td>-.06</td>
<td>.69</td>
<td>0.94</td>
</tr>
<tr>
<td>Ethnicity – African American</td>
<td>.49</td>
<td>.008</td>
<td>1.64</td>
<td>.51</td>
<td>.006</td>
<td>1.67</td>
</tr>
<tr>
<td>Ethnicity - Hispanic</td>
<td>.50</td>
<td>.008</td>
<td>1.66</td>
<td>.43</td>
<td>.026</td>
<td>1.54</td>
</tr>
<tr>
<td>Parental Education</td>
<td>-.27</td>
<td>.11</td>
<td>.76</td>
<td>-.28</td>
<td>.10</td>
<td>0.75</td>
</tr>
<tr>
<td>Program</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>.43</td>
<td>.006</td>
<td>1.54</td>
</tr>
<tr>
<td>n</td>
<td>1003</td>
<td>1003</td>
<td>1003</td>
<td>1003</td>
<td>1003</td>
<td>1003</td>
</tr>
<tr>
<td>Nagelkerk R Square</td>
<td>.017</td>
<td>.03</td>
<td>.03</td>
<td>.017</td>
<td>.03</td>
<td>.03</td>
</tr>
<tr>
<td>Percent Correctly Predicted</td>
<td>78.4</td>
<td>78.4</td>
<td>78.4</td>
<td>55.7</td>
<td>55.7</td>
<td>55.7</td>
</tr>
</tbody>
</table>

* p < .05

Once again, the Nagelkerke pseudo R² is higher in each instance of Model 2 across all cohorts with the addition of the program variable.
Summary of Descriptive and Logistic Findings

The descriptive statistics reported the percentage of students in the comparison group and in four cohorts of the access and success who did and who did not achieve academic success in their first year of college. Increases in academic success rates for program participants vis-à-vis the comparison group across categories reached 33.2 percentage points in the gender variable, 35.1 percentage points in the ethnicity variable, and 32.5 percentage points in the parental degree variable. The descriptive statistics also reported the percentage of students in the comparison group and in the four cohorts of the program who were retained from their first to second year of college. Increases in retention rates for program participants vis-à-vis the comparison group reached 8.3 percentage points in the gender variable, 14 percentage points in the ethnicity variable, and 10.2 percentage points in the parental degree variable. However, one variable in the ethnicity category - African American – experienced declining retention rates for participants in both Cohort 1 (82.9%) and Cohort 4 (80.0%) vis-à-vis the comparison group.

The logistic regression models illustrate that participation in the program netted a consistently positive and significant impact on academic success across all cohorts. In Cohort 1, the odds ratio for academic success was more than 3.5 times greater in favor of program participants vis-à-vis the comparison group, almost 3 times greater in Cohort 2, almost 3.5 times greater in Cohort 3, and more than 3 times greater in Cohort 4 in favor of program participants. Likewise, the regression models that employed retention as the dependent variable illustrate the effect of program participation on the likelihood that a student would be retained. Again, the findings were consistently positive and
significant across all cohorts. In Cohort 1, the odds ratio for academic success is 0.49
times greater in favor of program participants vis-à-vis the comparison group, 0.17 times
higher in Cohort 2, 0.79 times greater in Cohort 3, and 0.54 times greater in Cohort 4.

In summary, the efficacy of the access and success program to positively and
significantly support ongoing access, promote academic success and facilitate retention
for low income students seems certain.
CHAPTER 5

DISCUSSION

Although quite a few institutional access and success programs have been established at colleges and universities around the country, no study has been published to show the effectiveness of these initiatives in promoting student success. Using data from a large research university in the southwestern United States, this study sought the impact of an institutional access and success program on the academic attainment of low income college students. The study analyzed academic success and retention outcomes of first year students in the access and success program utilizing descriptive statistics and logistic regression models and found that the program participants achieved, on average, higher rates of academic success and retention than students in the comparison group.

Conclusions

This study shared various consistencies with previous research on access and success and student retention. The interactions of the school context (the access and success program) with variables from the internal context, the family context and the socio-economic context appear to support the Perna and Thomas (2006) posit that an overarching and interconnected framework of attitudes and events contributes to academic attainment.

The Internal Context

Participation in the access and success program may positively influence a
student’s perception of their situational opportunity (McDonough, 1997) and subsequently their trajectory toward degree attainment since the most expensive cost of attendance (tuition and fees) is eliminated by the program guarantee. Students’ achievement motivation may also be positively influenced by the promise of renewed financial aid over four years as long as they earn no less than a cumulative GPA of 2.5 and no less than 30 semester credit hours each academic year. Reasonably high and clearly communicated academic expectations in addition to the supportive program facilitate and encourage the students’ engagement in their college career (Kuh, 2007).

This study did not directly measure the impacts of attitude, motivation or behavior variables on academic success and retention; however, some research on gender trends in college is quantitatively validated by this study. The descriptive analyses on each cohort revealed that women students participating in the access and success program did net slightly higher academic success outcomes and were retained at slightly higher rates on average than their male peers, a finding supported by Mortenson (2006). However, there was no statistically significant difference between the probability of women vis-à-vis male participants in the access and success program achieving academic success or being retained uncovered by the logistic regression models.

The Family Context

All the student participants in the access and success program were from low-income families at the time of their initial enrollment at the university, and across the four cohorts no less than 64% were from ethnic minority groups. Research has found that low income students enrolled at four-year colleges and universities had lower rates
of academic and social engagement on their campuses and earned lower GPAs on average than students from more affluent families (Walpole, 2003). A gap between the degree completion rates of African American students and Hispanic students as compared with White students has also been recorded and despite sincere efforts at all levels of the educational spectrum, this gap has been widening noticeably (NCES, 2011).

This study did find a statistically significant probability that the access and success program participants would achieve academic success and be retained at higher rates than low income students who did not have the benefit of support from the program. The study also found that African American students participating in the program were more likely to be retained than White students, although they were less likely to attain academic success. However, when matched against the academic success rates of students in the comparison group, the descriptive analyses showed that program participants achieved higher rates of academic success across all ethnic groups.

The School Context

A contributing factor in the successful recruitment and retention of low-income and other underrepresented college students is financial aid (Oseguera & Rhee, 2009; St. John, 2002; Swail, Redd, & Perna, 2003). Furthermore, the provision of financial assistance in the form of institutional grant aid in lieu of student loans has been found to have a positive effect on low income students’ persistence to degree (Fenske, Porter, & Debrock, 2000; Murdock, 1990; Porter, 1989). To that end, the access and success
program in this study maximized the use of federal, state and institutional grant aid to minimize or eliminate the need for students to incur loan debt to cover the cost of their college attendance.

    The access and success program maintained high expectations for academic and social engagement as a condition for renewal of the institutional grant aid. These expectations and opportunities to meet them were clearly and consistently communicated to the program participants before and during their enrollment at the university. According to researchers, the optimum campus environment is “perceived by the students as inclusive and affirming and where expectations for performance are clearly communicated and set at reasonably high levels” (Kuh et al., p. 8). Program administrators proactively connected participants with mentors, encouraged campus employment and held career skills workshops for those who lacked work experience, established and encouraged participation in living/learning communities for the students, and hosted social gatherings at various junctures in the semester to provide the students with multiple opportunities for social engagement with each other.

    Academic support in the form of academic monitoring and intrusive interventions for students who were not meeting their academic success criteria were regular practices.

    Both the descriptive and the logistic regression analyses in this study found that the access and success program variable (i.e. a school context initiative that provided financial, academic and social support) netted a significant positive difference in the academic success and retention rates of low-income students.
The Socio-economic Context

The broader social and economic context can facilitate or detract from a college-completion culture, in particular the variables in this context that influence student perceptions about the entitlement to and affordability of post-secondary education. One of these variables is parental post-secondary educational experience, found to significantly influence a student’s enrollment in college (Conley, 2001; Hofferth, Boisjoly, & Duncan, 1998; Tierney & Auerbach, 2005). College-educated parents convey implicit and explicit expectations about post-secondary education to their children, but furthermore they convey valuable knowledge about successful preparation for and completion of a college degree. This transfer of knowledge and attitude is cultural capital that children inherit from their family (Tierney & Auerbach, 2005). More than 65% of low income college students are first in their families to attend college (i.e. first generation) and would therefore lack important cultural capital. According to previous studies, persisting through the challenges of life as a college student can be at least as demanding as earning good grades (Horn, 1998; Ishitani, 2003, 2006; Oldfield, 2007). This study measured the impact of parental education on the academic success and retention of access and success program participants. Whereas the descriptive analysis found some differences in favor of students who were not first in their family to attend college, this variable did not significantly increase the probability that a student would achieve higher rates of academic success or persistence.
Implications

**Implications for Administrative Operations**

In this study, an operational implication for university personnel seeking to maximize administrative efficiencies emerges from the school context. Whereas the descriptive statistics report increases in the rate of academic success for program participants vis-à-vis the comparison group, the addition of more staff and more resources for Cohort 2 and again for Cohort 3 (i.e., beyond the financial assistance, opportunities for engagement and clearly communicated expectations provided for Cohort 1), did not net significant increases in the academic success rates for access and success program participants in this study beyond the inaugural year. The rate of academic success was highest in Cohort 1 across categories of students (i.e., both genders, Hispanic and White students, first-generation, and students whose parents had post-secondary degrees), and the rate of academic success was lowest in Cohort 3 for all aforementioned categories of students with the exception of African Americans who experienced their lowest rate of academic success in Cohort 1. The implication to be drawn from these findings is that extensive investment in infrastructure, personnel and programming does not net an increase in the rates of academic success for low-income student participants in an access and success program. The quantified outcomes described in the previous section suggest that an access and success program for low-income college students might be readily designed and strategically deployed by utilizing available resources on most college campuses and by leveraging federal and state aid with supplemental institutional gift aid. This can be accomplished
without the need for substantial investment in new infrastructure support and programming activities.

The descriptive statistics illustrated less of a difference in the retention rates of the comparison group and the retention rates of program participants. Across all cohorts, retention rates were highest in Cohort 3, and lowest for more student categories in Cohort 2; and program manifested as a significant predictor variable of retention across all cohorts once again. The implication that may be drawn from a joint analysis of the descriptive and logistic regression findings in this study by university administrators seeking to maximize administrative efficiencies in the retention of access and success program participants is that extensive investment in additional resources does not net exponential gains in the rate of retention of these students.

Implications for Academic Support Programming

In this study, implications for programming emerge from the Family Context. African American students in all cohorts were significantly less likely to achieve academic success than other ethnic groups but they were significantly more likely to be retained from year one to year two, providing impetus and opportunity for targeted academic support interventions for these students in their first year and beyond. This interesting finding on the higher rate of retention of African American program participants vis-à-vis their peers presents an opportunity for further study.

Opportunities for Future Research

Several opportunities exist to expand on the findings of this study by including
additional dependent and independent variables in future research. For example, degree completion in a timely manner (i.e., in less than six years) might be included as a dependent variable for future study of the efficacy of access and success programs where descriptive statistics would record graduation rates and logistic regression would model the probability and odds. And, key factors from the internal and school contexts might be appropriately coded and added as independent variables to the logistic regression models. For example, a quantitative measure of individual achievement motivation (i.e., SAT or ACT scores) and the state-assigned rating of quality for the high-school from which the student graduated might contribute more than an access and success program to the probability and odds of a student’s academic success and retention.

Different statistical methods might also be used to study the efficacy of access and success programs. For example, multiple regression can be used to determine which internal, family, school and socioeconomic context factors (i.e., predictor variables) most accurately foretell academic failure and attrition (i.e., criterion variables). so that preemptive measures might be deployed by the access and success program personnel to facilitate and increase the rates of student success and retention.
APPENDIX

THE POLITICS OF INCLUSION: HIGHER EDUCATION AT A CROSSROADS

CONFERENCE COMPENDIUM OF ACCESS AND SUCCESS PROGRAMS

SUMMARY TABLES
<table>
<thead>
<tr>
<th>Institution and Program and Year Implemented</th>
<th>Access and/or Success</th>
<th>Eligibility Criteria</th>
<th>Number Awarded 2004 to 2007 and Source of Aid</th>
<th>Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amherst College - No formal program name or description of costs covered. Implemented in mid 1980’s.</td>
<td>Access</td>
<td>Expected family contributions are less than $13,000</td>
<td>240 students awarded</td>
<td>100% grant aid</td>
</tr>
<tr>
<td>Arizona State University - ASU Advantage designed to cover all direct college costs. Implemented in March 2005.</td>
<td>Access</td>
<td>• Arizona resident • Admitted as degree-seeking freshman pursuing 1st undergraduate degree • Enrolled for fall term immediately following graduation from high school • Family income less than $18,850 per year • Enrolled full-time</td>
<td>375 students awarded</td>
<td>91% grant aid 7% loans 2% work study</td>
</tr>
<tr>
<td>University of Florida - Florida Opportunity Scholars paying estimated cost of attendance. Implemented in January 2006.</td>
<td>Access and success</td>
<td>• Florida resident • First time in college • First generation in college (neither parent has earned a bachelor’s degree or higher) • Parental income less than $40,000 per year and assets (other than home) less than $100,000 • Complete FAFSA by May 1 To remain eligible, students must earn a cumulative 2.0 GPA and 24 credit hours with no substantial change in financial circumstances</td>
<td>425 students awarded</td>
<td>100% grant aid</td>
</tr>
<tr>
<td>Harvard College – Harvard Financial Aid Initiative meeting full financial need of eligible students. Implemented in March 2004.</td>
<td>Access</td>
<td>Parental income less than $80,000</td>
<td>1435 students awarded</td>
<td>100% grant aid</td>
</tr>
<tr>
<td>University of Illinois at Urbana-Champaign – Illinois Promise paying for tuition,</td>
<td>Access</td>
<td>• Illinois resident • Freshman or sophomore class standing • Family income at or below Federal Pell Grant eligibility</td>
<td>290 students awarded</td>
<td>92% grant aid</td>
</tr>
<tr>
<td>Institution and Program and Year Implemented</td>
<td>Access and/or Success</td>
<td>Eligibility Criteria</td>
<td>Number Awarded 2004 to 2007 and Source of Aid</td>
<td>Program Goals</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>University of Iowa – University of Iowa Pathways Program paying for tuition, fees, room and board. Implemented in 2007</td>
<td>Access and success</td>
<td>Iowa resident • Graduate in top 10% of high school class • Parental income at or below 150% of poverty level • First time in college student To remain eligible, students must earn no less than a 3.0 GPA</td>
<td>75-80 students awarded 76% grants 12% loans 12% work study</td>
<td>• Improve recruitment, retention and graduation rates for underrepresented populations • Insure Illinois Promise funds are going to neediest students • Ensure sustainability of the program</td>
</tr>
<tr>
<td>University of Maryland, College Park – Maryland Pathways providing institutional grants to supplement federal and state grants, need-based loans and work study income. Implemented in 2003</td>
<td>Access and success</td>
<td>Maryland resident • Transfer students are not eligible • Maintain full-time enrollment • Make satisfactory academic progress</td>
<td>243 students awarded</td>
<td>• Provide access to low-income students • Minimize the need for student loans • When loans are a necessity, insure one source borrowing at lowest interest rate and best repayment terms including loan forgiveness options • Provide ongoing financial awareness educational opportunities through Financial Aid staff and professional staff from the UI Student Credit and Money Management Services office</td>
</tr>
<tr>
<td>Massachusetts Institute of Technology – Pell Matching Grant Program supplements the federal Pell grant to reduce the work</td>
<td>Access</td>
<td>Students are Pell-eligible • 517 students awarded 94% grants 4% loans 2% work study</td>
<td></td>
<td>• Reduce the amount of work/loan needed to be undertaken by lowest-income students • Confirm commitment to low-income students</td>
</tr>
<tr>
<td>Institution and Program and Year Implemented</td>
<td>Access and/or Success</td>
<td>Eligibility Criteria</td>
<td>Number Awarded 2004 to 2007 and Source of Aid</td>
<td>Program Goals</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| University of Michigan – M-Pact program removes loans from the financial aid packages of students from the lowest incomes. Implemented in September 2006. | Access | • Family income is less than $60,000  
• Zero family contribution under the College Board’s institutional methodology | • 412 students awarded  
• 100% grants | Make the University of Michigan affordable for families with incomes up to $60,000  
Remove loans from the packages of students from the lowest incomes to make the University of Michigan affordable |
| Michigan State – Spartan Advantage program ensures non-loan assistance to meet the costs of tuition, fees, room, board and books for low-income students. Implemented in August 2006. | Access | • Michigan resident  
• First time freshman  
• Eligible for federal Pell grant  
• Parental income is below the federal poverty guidelines for dependents  
• Student/spouse income is at or below federal poverty guidelines for independents | • 350 students awarded  
• 74% grants  
10% loans  
16% work study | Ensure access to and affordability of a Michigan State University education for the neediest Michigan residents  
Eliminate the shift from gift aid to loans for eligible students |
| University of Nebraska – Tuition Assistance Program covers the cost of up to 30 credit hours in an academic year. Implemented in August 2005. | Access and success | • Nebraska resident  
• Undergraduate, enrolled full-time  
• Eligible for federal Pell grant  
• Make satisfactory academic progress toward graduation  
• Maintain 2.5 minimum cumulative GPA | • 2,400 students awarded  
• 59% grants  
36% loans  
5% work study | Supplement federal, state and university need-based grant aid  
Increase college-going rate of low-income Nebraska residents  
Improve freshman to sophomore retention and 6-year graduation rates |
| University of New Mexico – College Affordability Act Scholarship is a state-funded grant to help defray the cost of tuition, fees, books and course supplies. Implemented in August 2006. | Access and success | First year eligibility criteria  
• Resident of New Mexico or eligible for tuition waiver  
• Enroll at least half-time  
• Demonstrate unmet financial need  
• Complete high school or GED Continuing eligibility criteria  
• Maintain satisfactory academic progress  
• Remain enrolled at | • 170 students awarded  
• 100% grants | Encourage New Mexico residents with financial need, who do not qualify for other state grants or scholarships, to attend and complete degree programs at a New Mexico public college or university |
<table>
<thead>
<tr>
<th>Institution and Program and Year Implemented</th>
<th>Access and/or Success</th>
<th>Eligibility Criteria</th>
<th>Number Awarded 2004 to 2007 and Source of Aid</th>
<th>Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina State University – Pack Promise provides 9 semesters of funding using a combination of scholarships, grants, federal work study employment and need-based loans. Implemented in 2006.</td>
<td>least half-time for consecutive semesters, • Continue to demonstrate unmet financial need</td>
<td>US citizens • Freshmen from families where parental income is 150% of poverty level without assets to fund college expenses To remain eligible, students must remain enrolled full time, maintain satisfactory academic progress and continue to meet the poverty-level guidelines</td>
<td>325 students awarded • 81% grants 11% loans 8% work study</td>
<td>Guarantee that NC State's neediest students will have 100% of their financial aid need met. • Ensure student success and timely graduation through unique mentoring and counseling, academic support and advising and undergraduate research opportunities</td>
</tr>
<tr>
<td>Ohio State University – Land Grant Opportunity Scholars (LGOS) program provides a full scholarship with a modest work study award. Implemented in September 2005.</td>
<td>• Family income is approximately $40,000 and/or parents' contribution is $1500. • Apply for admission by December 1 • File the FAFSA by March 1</td>
<td>• 219 students awarded • 90% grants 10% work study</td>
<td>Increase admissions applications from neediest Ohio students • Enroll needy high ability students from every Ohio county • Provide full support for LGOS students • Conduct research on the scholars and apply lessons learned to other low-income OSU students</td>
<td></td>
</tr>
<tr>
<td>Oklahoma State University – Academic Opportunity Award program provides a $1000 tuition waiver. Implemented in August 2004.</td>
<td>• Oklahoma resident admitted in good standing • Have at least $1000 of financial need as demonstrated by the FAFSA • Have a 3.0 unweighted high school GPA and an ACT/SAT score or 18/860 • First generation college student, or have attended a high school with low college-going rates or high free/reduced</td>
<td>• 922 students awarded • 49% grants 48% loans 3% work study</td>
<td>Support institutional recruitment and retention objectives • Diversity of the student population • Improve academic profile of incoming class • Select students based on high school GPA rather than test scores</td>
<td></td>
</tr>
<tr>
<td>Institution and Program and Year Implemented</td>
<td>Access and/or Success</td>
<td>Eligibility Criteria</td>
<td>Number Awarded 2004 to 2007 and Source of Aid</td>
<td>Program Goals</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>University of Pennsylvania – Program offering loan-free packages and a cost-of-attendance budget supplement up to $1000. Implemented in September 2006.</td>
<td>Access</td>
<td>Family income below $50,000 and expected parental contribution less than $2,500</td>
<td>271 students awarded 94% grants 6% work study</td>
<td>Enhance the ability of students from low-income families to attend the University of Pennsylvania by reducing the concern about finances. Reduce the base debt levels for low-income students</td>
</tr>
<tr>
<td>Princeton University – No Loan Program replaces loans with grants in the awards of all students requiring financial aid. Implemented in 2001-2002.</td>
<td>Access</td>
<td>All students who qualify for need-based aid</td>
<td>2524 students awarded 95% grants 5% work study</td>
<td>Reverse the trend of growing undergraduate debt</td>
</tr>
<tr>
<td>Stanford University – Stanford’s Low Income Policy program guarantees no or low parental contributions for low- to low-middle income families. Implemented in September 2006.</td>
<td>Access</td>
<td>Families with annual incomes less than $45,000 (no parental contribution required) Families with annual incomes from $45,000 and $60,000 (reduced parental contribution required)</td>
<td>1000 students awarded 93.3% grants 3.4% loans 3.3% work study</td>
<td>Demonstrate Stanford’s commitment to bridge the gap between family expected contribution and full cost of attendance</td>
</tr>
<tr>
<td>University of Tennessee – Tennessee Pledge program uses all eligible gift aid to meet the student’s mandatory costs for up to four years. Implemented August 2005.</td>
<td>Access</td>
<td>Family adjusted gross income of $27,000 or less Meet minimum eligibility requirements Annually complete the FAFSA by March 1 To retain eligibility, students must meet satisfactory academic progress guidelines</td>
<td>406 students awarded 90% grants 9.5% loans 0.5% work study</td>
<td>Provide access to higher education for qualified, low-income Tennessee residents Increase the socio-economic and geographic diversity of the university Decrease average student loan debt</td>
</tr>
<tr>
<td>Troy University – Troy Promise. At the time of the Compendium publication, the program had not been fully defined.</td>
<td>Unknown</td>
<td>Dependent students United States citizens Demonstrate financial need</td>
<td>Unknown</td>
<td>Reduce students’ debt burdens</td>
</tr>
</tbody>
</table>

Eligibility Criteria:
- To remain eligible, students must complete 28 credits and maintain a 2.5 GPA each academic year.
<table>
<thead>
<tr>
<th>Institution and Program and Year Implemented</th>
<th>Access and/or Success</th>
<th>Eligibility Criteria</th>
<th>Number Awarded 2004 to 2007 and Source of Aid</th>
<th>Program Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University of Virginia – Access UVA program</strong>&lt;br&gt;Implemented Fall 2004.</td>
<td><strong>Access</strong>&lt;br&gt;- Eligible for need-based aid,&lt;br&gt;- Students at or below 200% of poverty eligible for all grants packaging</td>
<td></td>
<td></td>
<td>• Provide 100% of need to all eligible students&lt;br&gt;• Provide full grant packages to low income students&lt;br&gt;• Reduce debt by limiting the amount of loans included in packaging&lt;br&gt;• Implement a comprehensive Financial Literacy Program&lt;br&gt;• Increase% of low income students overall&lt;br&gt;• Increase the number of applications from low and middle income students&lt;br&gt;• Increase participation of students with need in study abroad, internships, volunteering, and student activities&lt;br&gt;• Improve students’ perception of post graduation options</td>
</tr>
<tr>
<td><strong>William and Mary – Gateway program.</strong>&lt;br&gt;At the time of Compendium publication, the program had not been fully defined. Implemented in March 2007.</td>
<td><strong>Unknown</strong>&lt;br&gt;- Virginia resident&lt;br&gt;- Family income less than $40,000&lt;br&gt;- Freshman and transfer students are eligible</td>
<td></td>
<td></td>
<td>• Increase the economic diversity of the student population</td>
</tr>
<tr>
<td><strong>Yale University – Low-income Initiative</strong>&lt;br&gt;Low-income Initiative was put in place to encourage students from low-income families to apply for admission.</td>
<td><strong>Access</strong>&lt;br&gt;- Families with annual incomes less than $45,000 (no parental contribution required)&lt;br&gt;- Families with annual incomes from $45,000 and $60,000 (reduced parental contribution required)</td>
<td></td>
<td></td>
<td>• Ensure a diverse student body that includes students from all geographic and economic strata.</td>
</tr>
</tbody>
</table>
REFERENCES


Rau, W., & Durand, A. (2000). The academic ethic and college grades: Does hard work help students to 'make the grade'? *Sociology of Education, 73*(1), 19-38


