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Achieving the Dream: An Assessment of Participant Institutions' Performance Using the Integrated Postsecondary Education Data System (IPEDS)

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ACHIEVING THE DREAM: AN ASSESSMENT OF PARTICIPANT INSTITUTIONS’ PERFORMANCE USING THE INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM (IPEDS)

By

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This dissertation is dedicated to three of the most influential people in my life – Chief, Lady and Mario. The incredible sacrifices by each of them allowed me to be where I am today and to reach the goals I have set for myself. Thank you doesn’t even begin to cover it…
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ABSTRACT

In recent years, the United States of America has fallen in international rankings regarding completion of degrees (ATD, 2011c). “The U.S. has fallen in international education rankings. In one single generation, America went from 1st to 12th in college completion rates for young adults” (ATD, 2011c). Community colleges specifically struggle with assisting students in degree attainment; less than half of community college degree-seeking students graduate within six years of matriculation (ATD, 2011d). Community colleges are in need of interventions that will help them increase the number of students who are retained, who transfer to four-year colleges and who graduate; essentially, they must increase student success. Achieving the Dream™ seeks to assist community colleges in increasing their student success through four primary areas: institutional change, impacting public policy, engaging the public and developing knowledge on campuses.

The purpose of this study was to determine if there were any difference in the graduation, retention and transfer rates of the community colleges that participate in Achieving the Dream and of those who did not, during the 2004-2007 time period. This study used Propensity Score Matching and independent t-tests to compare participants’ performance with that of non-participants. Additionally, multiple regression was used to verify the results. The only statistically significant result was graduation rates in the multiple regression model. Graduation rates were 4.23% lower at Achieving the Dream schools than non-Achieving the Dream schools. The conclusion of this study is that Achieving the Dream schools were not able to reach the goals articulated by Achieving the Dream, but additional research is necessary to answer why.
CHAPTER I
INTRODUCTION

Achieving the Dream™ is a relatively new program in the United States of America aimed at helping community colleges increase student success on their campuses. “Achieving the Dream is a national nonprofit dedicated to helping more community colleges students succeed, particularly students of color and low-income students” (Achieving the Dream, 2011, para. 1).


ATD seeks to make large-scale institutional changes on community college campuses in order to increase student success. Institutional change refers to community colleges committing to student success, establishing themselves as learning organizations, and creating long-term policy changes to improve student success (ATD, 2011a, para. 2). Achieving the Dream seeks to impact public policy by making ATD states into leaders and advocates of changes for student success, by making ATD states establish community colleges as a priority, and by creating a policy environment that is rich with data for decision-making (ATD, 2011a, para. 3). Public engagement refers to engaging the surrounding community and employers to exert pressure on policy makers to make sure that they are making community colleges a priority and that data are being used for decision-making (ATD, 2011a, para. 4). Knowledge development refers to using data for decision-making and the production of research on promising practices for improving student success (ATD, 2011a, para. 5).

Statement of the Problem

The Achievement Gap

“For the first time in U.S. history, the current generation of college-age Americans will be less educated than their parents’ generation and yet, our workplaces require higher-level skills
than ever before. By 2018, 63 percent of all jobs in the U.S. are expected to require some level of postsecondary education” (ATD, 2011e, para. 2). Clearly, the need for education is out-pacing the current achievement of many individual Americans. “The U.S. has fallen in international education rankings. In one single generation, America went from 1st to 12th in college completion rates for young adults” (ATD, 2011c). Without the proper education, individuals and the country as a whole will continue to fall behind the rest of the world in terms of education level and economic prosperity.

**Institutional Capacity**

For many years, community colleges have had the expectation of doing more with less; they typically have under-prepared students with conflicting life roles, lower state appropriations per student and larger enrollments each year. However, this has never been truer than it is now. With the Great Recession, many people found themselves out of work and have returned to community colleges for increased workforce preparation. According to Kent Phillippe and Christopher M. Mullin (2011), enrollments have continued to increase since 2007. Enrollments had increased 3.2% in 2010, but are small in comparison with prior year enrollments. Enrollments increased “more than 11% between fall 2008 and fall 2009, and nearly 17% between fall 2007 and fall 2009” (Phillippe & Mullin, 2011, p.1).

In addition to increasing enrollments, more emphasis has been placed on gathering and using data to improve student success because of the push for assessment and accountability. The areas typically tasked with collecting data at community colleges are the institutional research, institutional assessment or institutional effectiveness offices. Institutional research offices at community colleges tend to have two or fewer full-time employees devoted to government reporting, answering internal requests for data. Further, these staff members rarely have any formal training in data collection and analysis. A recent report from ATD states, “In general, IR offices do not have the resources to take on more tasks beyond what is required by the time-consuming responsibilities of compliance reporting to federal and state agencies and preparation for accreditation visits” (Morest & Jenkins, 2007, p.2).

The answer to this issue appears to be ATD. In addition to championing institutional policies geared toward student success, ATD also calls for an increased investment in institutional research capacity, including formal institutional research staff training, streamlined
processes for collecting, storing and securing student data, and placing an overall greater priority on data-informed decisions.

**Student Success**

Student success is at the heart of increasing the number of educated workers in the United States, and it is the primary motivation of Achieving the Dream. The actual term “student success” is difficult to define; often, institutions are asked to develop their own campus-specific definitions of student success. However, there are common indicators of student success widely accepted in the literature: retention rates, transfer rates and graduation rates. In order to achieve higher rates in all of these areas, colleges must commit to understanding why their students are falling behind and to create interventions that focus on increasing student success. According to Pascarella and Terenzini (2005), students benefit from programs such as new-student orientation, first-year seminars and learning and [passing] developmental courses assist students in achieving higher levels of student success. Interventions such as these are encouraged by Achieving the Dream in their *Promising Practices* literature (ATD, 2011g).

**The Work of Achieving the Dream**

President Barack Obama has issued a challenge to the American public: to increase the number of college graduates by five million before 2020. Lumina Foundation for Education, in conjunction with several other entities, believes that they can answer the President’s call to action. In a large-scale effort, *Achieving the Dream: Community Colleges Count* (ATD) has set in motion policy and accountability initiatives on several community college campuses.

As ATD bases its initiative on data-informed decisions and evaluation, it is natural to collect data on the interventions at Achieving the Dream colleges to evaluate how successful they have been in reaching their goals. According to Achieving the Dream, they are doing well in terms of helping colleges increase student success and have produced several promising practices on community college campuses (ATD, 2011g, para. 1). Achieving the Dream has published documents including lists of schools that have “made progress on some of the most pressing higher education and student success issues facing colleges today” (ATD Leader Colleges, n.d., p.1). Additionally, ATD also provides narrative examples on their website from participating community colleges boasting success.

However, some information contrary to the ATD reports has surfaced. According to an article posted in *The Chronicle of Higher Education* (Gonzales, 2011), “Seven years into an
ambitious project to help more community-college students stay enrolled and graduate, a study has found that while colleges have changed their practices significantly, student outcomes have remained relatively unchanged” (para. 1). The study to which the article refers was conducted by MDRC (originally the Manpower Demonstration Research Corporation, the group officially adopted the name in 2003). MDRC is the research body conducting the multi-year evaluation of the overall ATD program. The results reported by MDRC fell short of ATD’s initial goals. In the 2011 report, Turning the Tide: Five years of Achieving the Dream in Community Colleges, MDRC stated, “Trends in student outcomes remained relatively unchanged, except for modest improvements in gatekeeper (introductory) college English courses and the completion of courses attempted within the first two years” (p. iii).

**Purpose of Study**

The purpose of this study was to use publicly available data to determine whether or not community colleges that are participating in Achieving the Dream are more successful than those who do not participate. This comparison is important because of the conflicting information currently available about ATD; additionally, this comparison has not been done with publicly-available data. The only data used in the current reports were data collected by ATD which were then passed on to MDRC. The variables that will determine success are graduation rates, transfer rates, and retention rates. The data analysis will allow for the comparison of the participating and non-participating schools to determine which group has higher rates in each area.

This study sought to measure student success based on three variables: graduation rates, transfer rates, and retention rates. Schools were compared first through propensity score matching and individual t-tests. In addition, multiple regression was used to verify the results. The data analysis allowed for a true comparison between ATD and non-ATD schools on graduation, retention and transfer rates.

**Research Question**

The research question that drove this study was: Are community colleges that participate in Achieving the Dream more successful than community colleges who do not participate in Achieving the Dream? This research question was broken down by each variable:

- Is there a difference between graduation rates of the community colleges that participate in Achieving the Dream and the rates of those that do not participate?
• Is there a difference between transfer rates of the community colleges that participate in Achieving the Dream and rates of those that do not participate?
• Is there a difference between retention rates of the community colleges that participate in Achieving the Dream and rates of those that do not participate?

**Conceptual Framework**

This study measured three indicators of student success (rates of graduation, transfer and retention) and assumed that these indicators are influenced by the campus environment. There are several models that offer possible explanations of why students persist toward a degree or choose to leave an institution without one; however, the model that guides this study was Vincent Tinto’s *Longitudinal Model of Institutional Departure*. According to Pascarella and Terenzini (2005), Tinto’s model stated that, “…rewarding encounters with the formal and informal academic and social systems of the institution presumably lead to greater student integration in these systems and thus persistence” (p. 54). Tinto’s (1993) model was created in order to assist those working at colleges in understanding what causes student departure.

We now turn to the specification of an interactive model of student departure which describes and explains the longitudinal process by which individuals come to leave an institution of higher education. In doing so we will review how adjustment, difficulty, incongruence, isolation, finances, learning and external obligations or commitments come to influence differing forms of student departure from campus. (p. 112)

Though the model does account for student characteristics, the institution is the focus of the model; “Rather the model seeks to explain how interactions among different individuals within the academic and social systems of the institution and the communities which comprise them lead individuals of different characteristics to withdraw from the institution prior to degree” (Tinto, 1993, p.113). Tinto (1993) argued that positive interactions with the campus community will strengthen a student’s resolve to remain at an institution until degree attainment. Achieving the Dream focuses on what institutions can do to improve student success, and this aligns with Tinto’s beliefs about students’ interactions with the college. Based on Tinto’s (1993) model, Achieving the Dream should be able to assist colleges with increasing student success by identifying barriers and creating interventions designed to foster student success. *Figure 1.1* below depicts Tinto’s model.
Copyright 1993 by The University of Chicago Press.

Figure 1.1. Tinto’s Longitudinal Model of Institutional Departure. This figure illustrates the impact of student and academic system attributes on student departure.

**Hypothesis**

In this study, the null hypothesis was that there will be no difference in the levels of student success on the selected indicators between those schools that participate in Achieving the Dream and those that do not.

The non-directional hypothesis was that there will be a difference in the levels of student success on the selected indicators between those schools that participate in Achieving the Dream and those that do not.

The directional hypothesis was that schools that participate in Achieving the Dream will have higher levels of student success on the selected indicators than those that do not participate.

**Assumptions**

There were several key assumptions associated with this study. First, it was assumed that the data provided to the Integrated Postsecondary Education Data System were accurate, comprehensive and free of errors. Second, it was assumed that the data provided by the Integrated Postsecondary Education Data System were true, comprehensive and free of errors. Third, it was assumed that participation in Achieving the Dream equated to full participation, i.e., that each college was committed 100 percent to applying ATD principles and practices on campus and that participation was not simply for publicity.
Limitations

This study relied on data from the Integrated Postsecondary Education Data System. This data could be considered “incomplete” when compared to the data collected by MDRC. The Integrated Postsecondary Education Data System collects data on only those students who are considered first-time, full-time students in college (IPEDS: glossary, 2011); whereas MDRC has collected data on the entire population of community college students (MDRC, 2011, p. 16). However, though MDRC makes various study data public, the ATD data were not available.

Another limitation of this study was the cost for participation in Achieving the Dream. A $75,000 per year investment (minimum of three years) is required from each participating college. This price tag may have caused some schools to self-select out of participation because of their inability to fund the program, meaning that the participating schools may have differences that will not necessarily be measured by the data collected. Also, community colleges that choose not to participate may have the financial resources, but may choose to allot the $75,000 elsewhere (more faculty and staff or facility updates, for example). The schools who can afford to participate may be in a better financial position; they may have more internal and external support to use for efforts to increase student success, or they may have no advantages at all.

This study used a sample of the entire population of non-ATD schools, and the results can be used generalized to the greater ATD population with caution. Though generalizations cannot be applied to every school, they can give an initial impression of an ATD school. The results of this study may be used for those schools interested in participating in the Achieving the Dream program, with the understanding that this study could not control for every difference in each individual community college.

Delimitations

In an effort to control for measureable differences between community colleges, the following variables were included in the propensity score matching analysis: campus demographics, enrollment numbers, total core costs and institutional control. These variables do not account for financial strength or levels of internal or external support, but helped narrow the scope of differences between participating and non-participating colleges.

Significance of the Study
Participation in Achieving the Dream is a significant financial investment, and the results of this study will add to the current body of knowledge, making each college’s decision more informed. Each participating college must contribute $75,000 per year for three years to participate in Achieving the Dream. In very difficult economic times, such a large investment deserves evaluation to determine if this money has been wisely allocated. The monetary investment, the staff time involved, and the call from the president all put Achieving the Dream in the spotlight.

There is another financial concern, but this concern is from the funders. Aside from the individual investment, the Achieving the Dream funding partners have contributed a significant amount of money. “To date more than $100-million has been invested in Achieving the Dream, with Lumina contributing about 60 percent” (Gonzalez, 2010, para. 8). Even with such national attention, there has been little in the way of published work relating to this initiative. This study adds to the existing database of information and may prompt further study. As of the writing of this dissertation, there have been no published studies comparing the performance of ATD colleges with non-ATD colleges.

**Methodology**

Two quantitative approaches were employed in this study. The first method was Propensity Score Matching. Since propensity score matching is relatively new in the field of higher education, the results of the current study were verified by using Multiple Regression. The quantitative data was collected from the Integrated Postsecondary Education Data System (IPEDS), which is a national database of information regarding institutions of higher education in the United States of America. The following variables were used to match ATD and non-ATD schools appropriately: control of institution, total enrollment, race/ethnicity, gender, total core expenses per each full-time equivalent, percentage of first-time, full-time students receiving financial aid, student to faculty ratio, percentage of enrolled students are full-time students.

For the first method, three individual t-tests were used to reveal any differences between ATD and non-ATD community colleges on graduation, transfer and retention rates after the schools had been matched on propensity scores. In the second method, a multiple regression was performed on each of the outcome variables to determine any differences between ATD and non-ATD community colleges on graduation, transfer and retention rates.
Summary

Achieving the Dream believes that their program can assist community colleges in increasing student success, thus responding to the national need for more graduates. Because participation in ATD is costly, evaluation of participants’ performance is necessary. As stated, MDRC has evaluated participants, but has not compared them to non-participants; additionally, MDRC has not made the data related to Achieving the Dream available to the public for evaluation. This study compared participants and non-participants using data from the Integrated Postsecondary Education Data System. Both Propensity Score Matching (with independent t-tests) and multiple regression were used to determine if there is any difference in graduation, transfer and retention rates.
CHAPTER II

REVIEW OF THE LITERATURE

Assisting underprepared students is a main component of the mission of community colleges. Thus far, the community college movement has been successful in assisting students who wish to either pursue a degree or seek job training. In 1989, Steven Brint and Jerome Karabel stated:

In terms of sheer numbers, no other twentieth century organizational innovation in higher education even begins to approach the success of the two year college, which grew from a single college in 1901 to over 1200 institutions in 1980, representing almost 40 percent of America’s 3,231 colleges (p.6).

Community college enrollments have soared, even when enrollment in traditional four-year schools slowly increased. “During the past 40 years, enrollment doubled in four-year colleges, but increased fivefold in public two-year community colleges” (Rosenbaum, et. al., 2007, p. 49). Based on the continuous enrollment surges, it seems that community colleges have been successful and need no further assistance. This is not the case with the modern-day community college. However, before understanding why community colleges need targeted initiatives to improve student success, one must understand how the community college was formed, and how it has evolved over time.

Brief History of Community Colleges

Community colleges in America began mostly as ‘Junior Colleges’ and were formed out of necessity. Arthur Cohen and Florence Brawer (2008) identified the following social forces that contributed to the rise of the community college as: “…the needs for workers trained to operate the nation’s expanding industries; the lengthened period of adolescence, which mandated custodial care of the young for a longer time; and the drive for social equality…” (p. 1). Community colleges have continued to provide these services to their surrounding communities, even today.

James Ratcliff (2008) also identified seven innovations that led to the development of junior colleges: community boosterism, the rise of the research university, the advent of universal secondary education, the professionalization of teacher education, the vocational
education movement, open access to higher education, and the rise of adult and continuing education and community services.

Community boosterism is defined as the creation of colleges through religious affiliations and communities in order to provide them with a ‘boost’ in social status (Ratcliff, 2008). According to Ratcliff (2008), “The panic of 1893—a major economic downturn in the late nineteenth century—led to the first formal thinking about two-year colleges” (p. 6). The president of Baylor University, Reverend J. M. Carroll, organized a gathering of all of the Baptists colleges in both Texas and Louisiana in order to discuss the current state of higher education (Ratcliff, 2008). At this meeting, the concept of the two-year college was created to prepare students for the four-year colleges (Ratcliff, 2008). The intent of the community college was to remove the burden of preparing students from the four-year schools, allowing them to focus on instructing students in their third and fourth year.

**Increasing Access to Higher Education**

The concept of open access to higher education is an American ideal that has provided support for the community college from the beginning. The continuous need for a low-cost alternative to higher-priced education for those who could not afford it propelled less-expensive colleges into the spotlight. The Morrill Acts of 1862 and 1890 also had a positive impact on the growth of the community college by providing a federally funded alternative to the private college education (Cohen & Brawer, 2008). The establishment of institutions such as land-grant colleges, women’s colleges and historically Black colleges (without first establishing standards for high school or college preparatory courses) ensured the need for community colleges. Land-grant colleges and universities, women’s colleges and historically Black colleges were sometimes established prior to the provision of secondary education because of the urgent need for education in rural areas.

“This curious American phenomenon [establishing institutions of higher education before secondary education facilities] required higher education to judge the merits of the students admitted…inadvertently, this assessment placed higher education in the position of articulating academic standards for college preparatory and secondary education” (Ratcliff, 2008, para. 23). Community colleges were, in part, created to fill the gap between high schools and four-year universities but assisted in creating academic standards for the rest of the education system to follow. Schools were facing greater demands and greater numbers of students, and community
colleges were able to carry the burden of helping underprepared students get ready for college-level work prior to arrival at the university. Not all private colleges had the capacity, nor did students necessarily have the funds to attend a private college.

Shortly after the 1890s, the rise of the research university gave way to community colleges in the North. William Rainey Harper, president of the University of Chicago, believed that the American liberal arts college provided inadequate rigor and quality. He thought their programs were akin to the German gymnasium (or high school) rather than true university-grade work. He isolated and strengthened the first two years of undergraduate study in an organizational unit of the university labeled The Junior College (Ratcliff, 2008).

Harper’s movement was momentous for the junior college. He convinced two local high schools to develop junior colleges within their high schools (Ratcliff, 2008). “Accepting Harper’s offer, they developed junior colleges within their high schools. Joliet Junior College, established in 1901, is generally recognized as the oldest continuously operating community college” (Ratcliff, 2008, p. 7). This work continued throughout the North, and similar models began emerging in various states, which began to frame the mission of the modern-day community college. “Junior colleges offered collegiate study, while a university education was devoted to the advancement of knowledge and scientific inquiry” (Ratcliff, 2008, p. 7).

In 1900, the Association of American Universities was founded to advance “the agenda of the research institutions” (Ratcliff, 2008, p. 8). In 1914, The Association of American Colleges was founded in order to provide defense for the small four-year college (Ratcliff, 2008). In 1921, the American Association of Junior Colleges (AAJC) was created and began to provide guidance for the early community colleges (Ratcliff, 2008).

The vocational movement concurrently fed growing community colleges, as well as provided future pathways for development. Despite the fact that the mission of the community college changed over time, community colleges in the 1920s still offered a liberal arts curriculum so that students could transfer to a four-year university after completing their coursework (Thelin, 2004, ). This helped community colleges remain successful during times in which other institutions were struggling. “Despite some limits in size, scope and resources, they [community colleges] were one of the success stories of the period between the world wars because they provided affordable, geographically accessible college studies” (Thelin, 2004 p. 250).
The further success and growth of the community college can be attributed to the vocational education movement of the late 19th Century, the emphasis on technical education during the years of the Great Depression and World War II, the career education initiatives of the 1970s and 1980s, and the contemporary workforce-development programs of states and the federal government have insured that vocational, technical, pre-professional, and para-professional programs; these are the mainstays of the community college (Ratcliff, 2008).

**The Community College Baccalaureate Degree**

Recently, there has been a new development in the community college landscape. Some community colleges have become accredited in order to confer baccalaureate degrees independent of any other college or university. This type of degree has developed for many reasons, including the need to increase the number of graduates with baccalaureate degrees and to allow for place-bound individuals to attain a baccalaureate degree.

Kenneth Walker (2005) explored two perspectives to explain the emergence of the community college baccalaureate—societal and institutional perspectives. From a societal perspective, a key responsibility of the community college is to meet the need for a baccalaureate educated workforce, and, “From an institutional perspective, an issue for the community college is that many of the occupations for which it has been providing education have, in recent years, elevated their entry requirements to the baccalaureate level” (p.13).

Walker (2005) also cited three additional factors that have motivated community colleges to pursue offering a baccalaureate degree: “rising demand of employers and students, rising costs of universities, and limited programs and access to meet these demands” (p. 14). Floyd and Walker (2009) stated “Increasingly, employers are requiring the bachelor’s degree for entry-level employment and advancement, especially in such allied health fields as nursing” (p.95).

Walker and Floyd’s (2009) final reason for the appearance of the community college baccalaureate was to allow for a lower-cost and local baccalaureate degree to provide accessibility for students geographically, programmatically and financially. Students who attend community colleges tend to be place-bound; they reside near the community college, and this is why they attend that particular school. Transfer to a four-year school may be possible academically, but not geographically. In addition to being place-bound, many students choose a program at the local community college because of program caps and high tuition costs at four-year institutions.
Because of the aforementioned reasons, the need for the community college baccalaureate seems to be increasing as the United States continues to lose its footing in the international realm of education. According to the 2006 National Center for Public Policy and Higher Education report, *Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy*:

In sum, although the United States continues to rank among the leaders in comparisons of performance in higher education, its leadership position has eroded. No longer the clear-cut top performer in participation and completion rates, the United States has been joined by other countries that have expanded access to and completion of higher education programs. Further, comparisons of direct measures of learning show the United States as trailing the leading countries (Wagner, 2006, p. vi).

The United States needs to graduate more students in order to compete with the global market. As in the past, community colleges are expected to assist in educating students who cannot be served at another institution; but only up to the Associate Degree level. Though the United States needs more baccalaureate graduates, the current four-year school system is not prepared to meet this need, and the need must be filled.

**Criticisms of the Community College**

Even during its early days, skeptics of the community college system voiced their concerns. The term “cooling out” was coined by Burton Clark in 1960 during his research on the community college. According to Clark (1960), the “cooling out process in higher education is one whereby systematic discrepancy between aspiration and avenue is covered over and stress for the individual and the system is minimized (p. 576).” Clark (1960) identified the five components of the cooling out process: alternative achievement, gradual disengagement, objective denial, agents of consolation and avoidance of standards. He argued that these processes were in place in order to cool the personal aspirations of those who aspired for job positions above their level of possible achievement.

Brint and Karabel (1989) acknowledged the notion that community colleges were designed to protect the four-year university from under-prepared students.

These university administrators recognized that the democratic character of the American culture and politics demanded that access to higher education be broad;
in the absence of alternative institutions, masses of ill-prepared students would, they feared, be clamoring at their gates (p. 10).

Brint and Karabel (1989) also provided support for Clark’s theory; they stated that the community college was designed to be a tool by which individual drive could be tempered before the individual had to face the fact that their education would not necessarily grant them access to the next level of success in their work environment.

Poised between a burgeoning system of secondary education and a highly stratified structure of economic opportunity, the junior college was located at the very point where the aspirations generated by American democracy clashed head on with the realities of its class structure (Brint & Karabel, 1989, p.9).

Cohen and Brawer (2008) also acknowledged this theory of why community colleges were thriving. “Even the notion of a grand scheme to keep poor people in their place by diverting them to programs leading to low-pay occupational positions has found some acceptance…. ” (p. 10). Brint and Karabel (1989) speculated that students became aware of this explanation of the purpose of community colleges, and became resistant to the community college as a vocational training center (p. 12). This resistance seemed to change in 1970 when many college graduates were unable to find work and were forced to return to school for additional job training.

**Student Success**

Though the literature related to “student success” is vast, it does not provide a commonly-used definition of student success. Colleges and universities are encouraged to define student success at their institution so that it may be measured properly on their campus. However, this leaves the field without one common definition. Additionally, it is more difficult to determine student success at a community college. Some students may only need a course or two for career advancement; some students may just want to enroll in a course to increase their personal skills in an area; and finally, some students wish to earn a certificate or associate’s degree. Because of the varying levels of need, it is difficult to state that only students who receive a certificate or degree are successful.

Despite the lack of a common definition, the literature does provide indicators of student success, that when combined, can provide a snapshot of how well students are faring. Indicators of student success that can be measured and that are repeatedly mentioned in the literature are graduation rates (Upcraft & Schuh, 1996; McPhail, 2011; Cohen & Brawer, 2008; SREB, 2010;
retention rates (AACC, 2011; SREB, 2010; Fike & Fike, 2008; ATD, 2011e; IPEDS, 2011a), and
transfer rates (Cohen & Brawer, 2008; McPhail, 2011; AACC, 2011; ATD, 2011e; Nitecki,
2011; IPEDS, 2011a; Sheldon, 2009). Studies relating to student persistence will be presented in
this section as well, as persistence measures the students’ ability to persist towards a degree
(resulting in an impact on retention, transfer and graduation rates). The following sections will
intermingle practices that appear to have a positive impact on student success with the overall
indicators of student success.

Increasing the Number of Graduates

Another driving force for the need for a large-scale intervention to increase student
success was President Obama’s call to action, The American Graduation Initiative. As proposed,
President Obama called for an additional five million community college graduates by 2020,
which would put America back on the top of the list for the highest proportion of college
graduates in the world (Whitehouse, 2009, para. 3). The support from the president continued in
2011 with the American Jobs Act; this proposal to Congress includes five billion dollars for
community college infrastructures. According to the proposed bill, each state will receive no less
than 2.5 million dollars, and some states will have higher funding depending on the number of
enrolled students (White House, 2011, p. 22).

Lumina Foundation also had a goal to increa...
Higher education attainment rates among adults, first-generation college-going students, low-income students and students of color are significantly lower than those of other students. This gap has endured for decades and is now widening. This attainment gap is alarming given the country’s demographic trends (para. 2).

By Lumina Foundation’s calculations, this effort will require 23 million more graduates; this means that an increase of five percent per year, or 150,000 new graduates each year above and beyond the previous year (Lumina Foundation, 2011, p.3), which is well above the challenge from the president. Community colleges will be key to the efforts outlined by the president and by Lumina Foundation.

Pradeep Kotamraju and Orville Blackman’s (2011) research attempts to offers ways in which community colleges can increase their graduation rates in order to meet the goal of the 2020 American Graduation Initiative (AGI). Kotamraju and Blackman (2011) used the Integrated Postsecondary Education Data System data from 1,013 Title IV community colleges in 44 states for the years 2005-2007. Using this data, the following independent variables were identified: student characteristics and behaviors (SCB), external workforce development variables (EWDV) and institutional environmental factors (IEF), in addition to the traditional graduation and completion rates. The analysis included multiple regression, trend analysis and descriptive statistics to determine the factors related to increasing the number of graduates.

Not surprisingly, Kotamraju and Blackman (2011) found that graduation and completion rates increase when those community colleges are nested in workforce environments that reward these accomplishments; additionally, workforce training and degree programs must match the necessary skills that will be needed in future job markets. However, this particular dataset was small (only 44 colleges), and was limited to three years of IPEDS data. The study offers further evidence of the importance of a supportive work environment and the need to align skills and knowledge with future needs, but the study failed to offer new information on how community colleges evaluate themselves and increase student success.

Graduation rates are a natural measurement for college accountability because they provide concrete evidence of the proportion of students in a cohort who have completed a degree versus how many students enrolled. It is also easy for policy makers and college leaders to understand that the lower the graduation rate, the less likely their college will be perceived as
successful. Though using graduation rates as the sole indicator of student success presents issues. Elena Nitecki (2011) stated:

Because community college students often accumulate credits without completing a specific degree, transfer before completing a program, lose credits on transfer, attend on a part-time basis due to family and work obligations, or leave school and return years later to finish, low graduation rates within traditional time frames are not necessarily accurate measures of student success (p. 99).

For her study, Nitecki (2011), sought to determine why two academic programs at a local community college had significantly higher levels of student success than the overall student success rate. Nitecki (2011) completed this case study over ten months at a community college in the Northeast United States using document analysis, faculty interviews, student interviews and classroom observations. The two programs examined in this study were the Paralegal Program and Early Childhood Education Program. Nitecki (2011) found that these programs had created cultures in which students were expected to succeed and were held to these expectations. Though the programs differed in approach and culture type, both cultures promoted student success through engagement with “caring” faculty.

Nitecki’s (2011) study has limitations; first, participation in the study was voluntary, and the case study was only conducted at one community college (making the results less generalizable). There was no mention of whether student attributes such as attitudes, beliefs or behaviors could have had an impact on the success rate, nor was it mentioned if tuition differences existed for the two programs, which could have had an impact on program selection. Overall, Nitecki’s (2011) contribution to the literature is the reinforcement of the importance of culture and engagement on student success, especially at a community college.

**Retention and Transfer Rates**

Though the focus on accountability tends towards graduation rates, retention rates are equally as important. According to David and Renea Fike (2008),

Retention is important for a variety of reasons. From the institution’s perspective, the retention of students is necessary for financial stability and to sustain academic programs. Public policy makers are advocating accountability, and one strong measure is student retention leading to graduation or transfer (p.69).
In their study, David and Renea Fike (2008), attempted to determine the predictors of retention for first-time students at community colleges. Fike and Fike (2008) used a quantitative, retrospective study with a student population of approximately 9,200 first-year students who enrolled during a four-year period at a public, urban community college in Texas. Using multiple methods of statistical analysis (including descriptive statistics, chi-square analysis and multivariate regression), Fike and Fike (2008) found that each cohort year had significant differences in their fall-to-spring retention rates but no significant differences in their fall-to-fall retention rates.

In alignment with the current literature (and goals of ATD), Fike and Fike (2008) found that students who complete developmental courses (mathematics, reading and writing), who had financial aid, and who were not first-generation in college were more likely to be retained than students who did not successfully complete developmental courses. Surprisingly, enrolling in internet courses was also a statistically significant predictor of retention; also, gender and ethnicity were not found to be a significant predictor.

Fike and Fike’s (2008) study has limitations. First, they concede that there was a larger percentage of missing data for parents’ overall level of education, though they do not explicitly state the percentage; additionally, some of the data were self-reported, and such data can be inaccurate. Fike and Fike (2008) do not state how the data were collected for this study, which is concerning. The study was not an experimental design, as it was a retrospective study, so causation cannot be inferred, only correlations. Overall, Fike and Fike (2008) did little to contribute new knowledge to the existing body of knowledge on student retention but did find that internet classes were a predictor of retention. This creates a need for further research on how online courses are impacting retention.

Gloria Crisp (2010) sought to determine the impact of mentoring on community college student success. Crisp’s (2010) mentoring study had a student population of 7,688 community college students located in south-central United States in the Fall 2006 semester. The sample was drawn from twenty randomly-selected classrooms who offered core courses at the community college, yielding a sample of 436. The survey response was 81%, or 351 students, and 320 gave permission for Crisp (2010) to access their student record data. The survey contained the following constructs: mentoring experiences, social integration, academic integration, institutional commitment and goal commitment. Crisp (2010) used various types of statistical
analysis, including descriptive statistics, t-tests, regression-based multiple indicators, multiple cases analysis and structural equation modeling to analyze the self-reported data against the aforementioned constructs.

Crisp (2010) found that overall, female students were more likely to “perceive themselves as receiving significantly higher levels of mentoring, including psychological and emotional support, academic knowledge and degree and career support” (p. 48). Females were also found to be significantly more academically and socially integrated. Surprisingly, there were “no substantial differences for White and Asian Americans when compared with non-Asian minority participants” (p. 48). Also unexpected was that part-time students were found to receive higher levels of mentoring and were more committed to the institution when compared to full-time students. As expected, full-time students were more likely to persist than part-time students. Finally, Crisp (2010) states that mentoring was an integral part of the theoretical framework of student persistence.

Crisp’s (2010) study has several limitations. First, the study was limited to data from one community college, making the findings difficult to generalize. Second, the survey data came from fourteen of the randomly selected twenty classrooms, limiting the sample. As with Nitecki’s study, no mention was made about how student characteristics fit into the theoretical model on student success. Crisp’s (2010) study did provide some evidence that mentoring should be considered an integral part of increasing student success, and she suggested that future research focus on persistence models that are appropriate for the community college, rather than relying on existing models that were created for the traditional four-year institution.

George Kuh, Ty Cruce, Rick Shoup and Jillian Kinzie (2008) conducted a study on the effects of student engagement on first-year students’ grades and persistence. The study sought to “determine the behaviors and the institutional practices and conditions that foster student success” (p. 542). The data for this study was taken from 18 baccalaureate-granting institutions who participated in the National Survey of Student Engagement (NSSE) between 2000 and 2003. Two criteria were used to determine institution eligibility for the study: an ample number of NSSE responses, and reasonable racial and ethnic diversity; 6,193 student records contained all the necessary variables. Kuh et al. (2008) analyzed the data in two stages; the first stage used ordinary least squares, and the second stage used estimated models to test for conditional or interaction effects.
Kuh et al. (2008) found that student engagement in educationally purposeful activities resulted in higher grades and persistence rates and that student engagement effects are greater for lower ability student and students of color (as compared with White students). Though all students benefit from engagement, the effect is greater for the aforementioned groups. Unexpectedly, Kuh et al. (2008) found that students with high ACT/SAT scores, high first-year grades, and students from the highest income bracket were less likely to persist to their second year. Mostly, the findings do not add new knowledge to the field, but they substantiate the theory of how student engagement affects student success.

The limitations of Kuh et al.’s (2008) study are the limited number of years for NSSE administration, the short length of the NSSE survey (it does not measure all aspects of student engagement), and the unusually high response rate. The response rate for the survey was 85%, which the authors indicate may be due to the fact that many of the less-engaged students had already left the institution prior to the NSSE administration in the Spring semester.

Measuring multiple indicators of student success is important, especially now with increased levels of accountability and the increased desire for assessment (Ewell & Jenkins, 2008; Syed & Mojock, 2008; Upcraft & Schuh, 1996). The pressure began in 1986, with an annual state governors meeting in which the governors decided to hold higher education more accountable for the funding provided (Upcraft & Schuh, 1996). According to Upcraft and Schuh (1996), “In the past several years, the assessment movement in higher education has grown dramatically. Colleges and universities have come under increasing pressure from their various constituencies to demonstrate their effectiveness in measurable terms” (p. xi). This still holds true today with the economic downturn and limited funding availability.

In an effort to add to the literature on increasing transfer rates at community colleges, Caroline Sheldon (2009) studied the predictors of student transfers to a four-year, for-profit institution. The data was retrieved from both the California Community Colleges’ Management Information System and the National Student Clearinghouse (NSC) for the years 2000-2004. The transfer query led to 730,893 records; once all the records with missing data were removed, the population for the study was reduced to 613,595. Of the 613,595 records, 51,134 students transferred to a four-year, for-profit institution. Logistic regression was used to determine the predictors of transfer, and included 18 variables that could encompass student characteristics, academic experience and the organizational context of the community college.
Sheldon (2009) found three important predictors of transfer to a four-year, for-profit university. Race, institutional characteristics and student use of the transfer center on a campus reduced the likelihood that a student would transfer to a for-profit institution. This study has limitations; the study was limited to four-year, for-profit institutions only. The study would have been more robust if it would have included all transfers (including to other community colleges and four-year institutions) initially, then subset the data into the various categories. Additionally, this study was limited to only one state and would need to be replicated in other states in order to generalize to community colleges as a whole.

The Work of Achieving the Dream and Increasing Student Success

Currently, Achieving the Dream has 150 participating colleges in 30 states (160 total have participated), along with the District of Columbia. Through this effort, Achieving the Dream proposes to affect the success of over two million students (ATD, 2011c). To participate in the Achieving the Dream Initiative, colleges must submit an application for consideration. Additionally, they must participate in a College Readiness Assessment that will help them gauge the extent to which they are prepared to participate in ATD.

According to Achieving the Dream, those with an Associate’s Degree will earn between 20-30 percent more than those with only high school diplomas; every dollar in taxpayer money invested in a community college will yield a three-dollar increase in taxes from economic growth; and the United States of America can expect a 5-15 percent increase in economic growth for each additional year of schooling for each individual (ATD, 2011d). Because of these statistics, ATD seeks to make student success an institutional priority for community colleges. Community colleges are the target of this intervention because of dismal student success. “Fewer than 46 percent of students who enter community college with the goal of earning a degree or certificate have met their goal six years later” (ATD, 2011d). These low degree-attainment rates are in part attributed to the fact that community college students tend to be more high-risk than traditional college students for several reasons.

More than half of them [community college students] exhibit at least two of the seven characteristics that have been shown to reduce a student’s chance of completing a college program: delayed enrollment after high school graduation, lack of a high school diploma, part-time employment, full-time work (at least 30 hours a week), financial independence from parents, dependents other than a spouse, or single parenthood (Lamkin, 2004, p.2).
Assisting Under-represented Populations

Community colleges also tend to have higher numbers of under-represented students than most traditional four-year colleges and universities. Achieving the Dream seeks to grant access to under-represented populations (while simultaneously increasing the overall education of the United States of America) by making student success an institutional priority for community colleges. ATD will attempt to make this change through data-informed decision-making and the implementation of interventions aimed at increasing student success.

There are too few students achieving their academic goals at community colleges, and there is a disproportionate amount of students of color who are falling behind: “Fewer than 46 percent of students who enter community college with the goal of earning a degree or certificate have met their goal six years later” (ATD, 2011d). The National Center for Education Statistics (NCES) states that 66.8 percent of associate’s degrees conferred are awarded to White students, 12.8 percent to Black students, 12.2 percent to Hispanic students, and 8.2 percent going to a combination of Asian/Pacific Islander, American Indian/Alaska Native and Non-resident alien students (IPEDS, 2011b).

The statistics provided by the College Board are somewhat higher than those of ATD and NCES as they are broken down by individual race/ethnicity. “As of 2008, 41.6 percent of White 25-34 year-olds had attained an associate’s degree…30.3 percent of Black 25-34 year-olds had attained an associate’s degree…19.8 percent of Hispanic 25-34 year-olds had attained an associate’s degree” (McPhail, 2010, p.10). Despite these slightly higher levels of attainment, all of these completion rates are unacceptable at any level.

As stated in Chapter 1, ATD seeks to make large-scale institutional changes on community college campuses through four main areas: institutional change, policy, public engagement, and knowledge development. Institutional change refers to community colleges committing to student success, establishing themselves as learning organizations, and creating long-term policy changes to improve student success (ATD, 2011a, para. 2). Achieving the Dream seeks to impact public policy by making ATD states leaders and advocates of changes for student success, making ATD states establish community colleges as a priority, and creating a policy environment that is rich with data for decision-making (ATD, 2011a, para. 3). Public engagement refers to engaging the surrounding community and employers to exert pressure on policy-makers to make community colleges a priority and that they encourage the use of data in
decision-making (ATD, 2011a, para. 4). Knowledge development refers to using data for decision-making and the production of research on promising practices for improving student success (ATD, 2011a, para. 5).

Achieving the Dream (2011b) will evaluate these goals by measuring the number of students who “successfully complete the courses they take; advance from remedial to credit-bearing courses; enroll in and successfully complete gatekeeper courses; enroll from one semester to the next; earn degrees and/or certificates” (para. 2). Achieving the Dream seeks to make these overarching changes to community colleges by developing a culture of evidence whereby colleges implement the following practices: collecting data on student success, identifying gaps in performance, creating initiatives based on data, evaluating the initiatives, and continuing the process until the overall student success rate increases at the college.

**Promising Practices that Lead to Student Success**

Achieving the Dream (2011g) provides a list of Promising Practices which colleges can use in order to work towards creating student success: “college readiness programs, mandatory new student orientation, student success courses, developmental course redesign, curriculum redesign, cooperative learning, learning communities, and intensive and individualized advising” (para. 2). These are practices that are supported by data from ATD colleges and are officially recommended to new participants in Achieving the Dream.

These practices are supported not only by the experiences of Achieving the Dream colleges, but they are grounded in the literature as well. In their review of 20 years of literature on student success, Pascarella and Terenzini (2005) found that the following programmatic interventions were linked with increased student success: new-student orientation programs, first-year student seminars, [passing of] developmental/remedial courses and supplemental instruction programs. New-student orientation and first-year seminars assist students by introducing them to the resources available at the college, as well as the expectations associated with college-level work. Even when pre-college variables were controlled for, these programs were linked with higher rates of student persistence towards a degree (Pascarella & Terenzini, 2005). These interventions align with the Promising Practices of Achieving the Dream.

As stated earlier, George Kuh (2008) found that student engagement in educationally purposeful activities led to higher rates of student success. Kuh (2008) cites his previous work and defines engagement as “both the time and energy students invest in educationally purposeful
activities and the effort institutions devote to using effective educational practices” (p. 542). Engagement in educationally purposeful activities relates to several of the Promising Practices offered by Achieving the Dream.

Two major findings from this study are that “student engagement in educationally purposeful activities is positively related to academic outcomes as represented by first-year student grades and by persistence between the first and second year of college” and that “engagement has a compensatory effect on first-year grades and persistence to the second year of college at the same institution” (Kuh, 2008, p. 555). Kuh’s findings are consistent with what Achieving the Dream wishes to achieve through their Promising Practices.

The Role of Institutional Research

Achieving the Dream encourages senior decision-makers learn the skills needed for data analysis and data-informed decision-making. Interpreting and using data can be a daunting task for community colleges, and they typically do not have the institutional research (IR) capacity to collect and interpret the necessary data (Morest & Jenkins, 2007; Delaney, 1997; Ewell & Jenkins, 2008; MDRC, 2011; Cohen & Brawer, 2008; Syed & Mojock, 2008). Little research on the size and staffing of community college IR offices has been conducted outside of the membership organization The Association for Institutional Research (AIR), and the publications are limited. However, the research that has been conducted indicates that a majority of community colleges are understaffed in institutional research.

In a study conducted for Achieving the Dream, Vanessa Smith Morest and Davis Jenkins (2007) surveyed community colleges to determine how many full-time staff are devoted to institutional research on a campus. They found that 43% of colleges surveyed had more than 1.5 FTE (full-time equivalent) researchers, leaving 57% with less than 1.5 FTE (Morest & Jenkins, 2007). Additionally, Morest and Jenkins (2007) estimated that “one fifth of community colleges have little or no IR capacity beyond very basic reporting functions due to very limited staffing” (p. 6). In their study, “additional staffing” was cited by 85 percent of the respondents when asked what would improve their ability to increase the effectiveness of institutional research at their college (Morest & Jenkins, 2007).

Ann Marie Delaney (1997) found similar results in her survey regarding institutional research capacity on college campuses. Though her study included four-year institutions, a majority of the schools reported little to no institutional research function. Delaney (1997)
reports, “Of the 127 responding institutions, 40 percent report they have an institutional research office; another 45 percent have a person or other office engaged in institutional research activities, but no office; and the remaining 15 percent have neither an institutional research office nor an institutional research function” (p. 3).

In their research on student unit record (SUR) data, Peter Ewell and Davis Jenkins (2008) identified the under-staffing of IR offices as a barrier to using data for improvement.

Policy makers are often unaware of the potential use of SUR data for informing improvements in student outcomes; hence, they under-invest in state data and research capacity. Community college state agency research staffs are generally spread thin, which limits their capacity to analyze data at the state level. Often, they cannot do much more than the data analysis and reporting required for statutory compliance (p. 76).

Syraj Syed and Charles Mojock (2008) also found that institutional research offices did not have the ability to add additional tasks because of the lack of staff. “Many colleges simply lack the capacity to conduct the institutional research necessary to address the issues of decreased student success and improvement, decreasing retention and graduation rates, or waning enrollment numbers” (p. 848).

The inability to analyze available data beyond what is required for external report does not allow colleges to use the data to increase student success. Once the capacity for institutional research is established, the next step is to interpret the data and use it for decision-making. Without actually using the data collected, colleges will be unable to advance in the pursuit of increasing student success. Investing in institutional research offices is one of the parameters of participation in Achieving the Dream.

Using data to inform decisions can help college leaders and policy makers justify decisions and policy changes. Without analyzing the data, it is difficult to know where to begin when creating interventions to improve student success; data analysis is especially important when determining a group or groups need a particular service to improve retention. “Using data to predict student retention enables institutions to engage in interventions with students who bring particular characteristics and aspirations to the campus” (Fike & Fike, p. 69).

**Related Efforts to Increased Student Success**

Collecting data for assessment and accountability is not a new concept in higher education, but now community colleges are seeing value in using the collected data in increase
student success. The data collected for reporting purposes are often the same data needed to
evaluate how well the college is faring; graduation, retention, and transfer rates are all indicators
of student success, and these data are all collected for external (state and national) reporting.
Data at the state level are referred to as student unit record (SUR) data, and can help policy
makers and college leaders make decisions impacting student success.

Ewell and Jenkins (2008) offered suggestions on how to use SUR data to improve student
success: data collection and use should be driven by desired outcomes; data should be used to
inform and empower educators; benchmarking can help focus the attention of policy makers;
and, findings should be effectively communicated to college leaders, policy makers and
stakeholders. Each of these practices can be found within the suggestions from Achieving the
Dream.

A national and widely-used survey used to aid community colleges in gauging student
success on their campus is the Community College Survey of Student Engagement (CCSSE). CCSEE began in 2001 at The University of Texas-Austin through the Community College
Research Program (CCSSE, 2011a). Before CCSEE, the National Survey of Student Engagement
(NSEE) was established in order to help four-year colleges and universities evaluate their current
practices targeting student success. In response, the CCSSE was created and targeted specifically
towards the community college environment. The CCSSE is a benchmarking instrument that
helps to establish national norms on educational practice, help colleges identify their
performance in designated areas, and document their progress over time (CCSSE, 2011a).
Specifically, the CCSSE provides feedback in five areas: active and collaborative learning,
student effort, academic challenge, student-faculty interaction and support for learners (CCSSE,
2011b). In addition to using CCSEE, colleges are creating campus-specific initiatives to increase
student success.

**Evaluation of Achieving the Dream**

Currently, there are few studies or evaluations of the Achieving the Dream program. The
evaluations that have been conducted have only been conducted by Achieving the Dream or their
partners. The most prominent evaluation of the program has been done by MDRC, a partner
from the original Achieving the Dream initiative. MDRC, (originally known as the Manpower
Demonstration Research Corporation, but officially adopted MDRC as their name in 2003) has
conducted periodic evaluations of the data submitted by Achieving the Dream participants. The
report of the data has fallen short of Achieving the Dream’s desired outcomes. In their latest report, *Turning the Tide: Five Years of Achieving the Dream in Community Colleges*, MDRC (2011) reported the following about participation in Achieving the Dream:

On the one hand, it represents an unprecedented effort to help community colleges change their institutional cultures so they can continuously pinpoint where, how, and why their students are underperforming, and then implement reforms to help them improve…On the other hand, trends in student outcomes—such as course completion, persistence, maintaining good grades, and earning college credentials—have remained relatively unchanged at these colleges, underscoring the depth of the challenge facing all community colleges. (p. xi)

The data collected and used by MDRC is for all first-time, certificate or degree-seeking students; these data are not available to the public (MDRC, 2007). This study differs in that it utilizes publicly-available data from the Integrated Post-Secondary Education Data System (IPEDS). MDRC focuses its efforts on the first cohort of ATD schools, leaving the remaining cohorts publicly undocumented. Because of the lack of evidence of improvement in the remaining cohorts, this study seeks to provide the results of any changes from the remaining schools. Additionally, there are no available studies (publications or dissertations) that have evaluated the Achieving the Dream program, nor are there any studies comparing ATD schools with non-ATD schools.

**The Uses of Propensity Score Matching**

Propensity score matching is a relatively new technique and is credited to Rosenbaum and Rubin. In their 1983 study, *The Central Role of the Propensity Score in Observational Studies for Causal Effect*, they outline this technique for comparing two samples when randomization of participants is not possible. The matching technique also allows for unequal numbers in the two sample groups. “Matching is a method of sampling from a large reservoir of potential controls to produce a control group of modest size in which the distribution of covariates is similar to the distribution in the treated group” (Rosenbaum & Rubin, p. 48). Since 1983, several fields have used this technique in their research including the medical profession, the social sciences and labor bureaus (Austin, 2011; GMAC, 2006; Bryson, et al., 2002). A more detailed explanation of propensity score matching is presented in Chapter 3.
Summary

Community colleges began in the United States of America with the goal of providing education to the masses, and have continued to provide education for many who would otherwise be able to afford higher education, and for those who are place-bound and cannot relocate to attend another institution of higher education. Community colleges have undergone many changes in order to meet the needs of their students and communities, and must now ensure that they are doing so within a culture of doing more with less.

Achieving the Dream believes that they can help community colleges do more with less by increasing institutional research capacity on campus, by assisting with the identification of value-adding programs through systematic evaluation, and to assist students in achieving success at the community college level. Several previous studies have highlighted programs and services that point in an increase in student success, and many of these programs are endorsed by Achieving the Dream.

Propensity score matching and multiple regression are two statistical techniques that are used in this study to compare ATD and non-ATD schools on three indicators of student success: graduation, retention and transfer rates. Such a comparison has not been done, and the results will add to the current body of literature about Achieving the Dream.
CHAPTER III

METHODS

This chapter outlines the research question that guided this study, the definitions of the variables that were used, and an outline of the quantitative methods that were used to analyze the data. Additionally, limitations of the quantitative methods chosen for this study are addressed.

Research Question

The primary research question that guided this study was: Are community colleges who participate in Achieving the Dream (ATD) more successful than community colleges who do not participate in Achieving the Dream? This research question was broken down by each variable:

- Is there a difference between graduation rates of the community colleges that participate in Achieving the Dream and those that do not participate?
- Is there a difference between transfer rates of the community colleges that participate in Achieving the Dream and those that do not participate?
- Is there a difference between retention rates of the community colleges that participate in Achieving the Dream and those that do not participate?

Population of Interest and Sampling Procedures

The population of interest for this study was the entire population of community colleges in the United States of America. The population was divided into two subpopulations: those who participated in Achieving the Dream and those who did not during the specified timeframe of 2004-2007. The ATD sample consisted of 60 community colleges for the propensity score matching method and 70 for the multiple regression model. The sample sizes are different in each model due to the matching process in propensity score matching. Based on the variables used to match the ATD schools with non-ATD schools, only 60 valid matches were produced. Additional information about the sample sizes is provided in the Data Analysis section. The list of matched schools is located in Appendix B.

The list of Achieving the Dream schools used in the multiple regression analysis part of this study is provided in Appendix A. Based on the Process for Institutional Change framework (MDRC, 2004) offered by ATD (Figure 3.1 below), it was appropriate to analyze schools with two or more years experience with the program. By year two, some results of the implementations in year one should have been evident even if they were small. Since IPEDS data
are only available through 2009, the latest cohort that will be used is the 2007 cohort (fourth cohort).

Figure 3.1. Process for Institutional Change. This figure illustrates the expectations for Achieving the Dream schools by year of participation.

Thirty schools participated in the first cohort in 2004, meaning that they have participated in Achieving the Dream for five years; eight were in the second cohort, 23 in the third cohort and 31 in the fourth. The total ATD population for this study is 70 colleges, which is less than the total participation population for the years 2004-2007. Some of the schools were excluded
because their offer baccalaureate degrees and are not classified as two-year institutions by the Carnegie Foundation (Carnegie, 2011).

**Variables**

Transfer rates, graduation rates and retention rates are the three indicators of student success that were used in this study. The Integrated Postsecondary Education Data System (IPEDS) provided a definition for each, and this study will use the IPEDS definition provided. It is important to note that these variables are indicators (or measures) of student success, and that this study measured the indicators on a continuous scale. The ATD and non-ATD schools were compared on each of these three measures. The group that had the highest rates in each variable category was considered to have higher rates of student success, as long as the results were statistically significant ($\alpha < .05$). The IPEDS definitions are as follows:

**Transfer rates.** “Total number of students who are known to have transferred out of the reporting institution within 150% of normal time to completion divided by the adjusted cohort” (IPEDS, 2011b).

**Graduation Rates.** “Data are collected on the number of students entering the institution as full-time, first-time, degree/certificate-seeking undergraduate students in a particular year (cohort), by race/ethnicity and gender; the number completing their program within 150 percent of normal time to completion; the number that transfer to other institutions if transfer is part of the institution’s mission” (IPEDS, 2011b).

**Retention Rates.** “A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage…For [community colleges] this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall” (IPEDS, 2011b).

**Data Collection**

This study relied on data collected by the Integrated Postsecondary Education Data System, which is managed by the National Center for Education Statistics (NCES). This data source was chosen because the data are publicly-available. Though MDRC (originally known as the Manpower Demonstration Research Corporation, but officially adopted MDRC as their name in 2003) offers data upon request, Achieving the Dream data are not offered. Annually, NCES surveys more than 6,700 institutions of higher education (IPEDS, 2011). It is mandatory for any institution receiving federal government loan money to participate in the survey. This policy is
outlined in “Title IV of the Higher Education Act of 1965, as amended (20 USC 1094, Section 487(a) (17) and 34 CFR 668.14(b) (19))” (IPEDS, 2011, para. 4).

The data collected by the Integrated Postsecondary Education Data System include information in seven areas: institutional characteristics, institutional prices, enrollment, student financial aid, degrees and certificates conferred, student persistence and success, and institutional human and fiscal resources (IPEDS, 2011). This information is readily available for any institution of higher education, including community colleges. As reporting the data is a requirement for all colleges receiving federal loan money, the instances of missing data should not have impacted the study.

Data received from individual schools are input into the system and coded. A glossary (data dictionary) is available on the website for those interested in using the data. The glossary lists all of the variables available for use, along with a narrative definition of the variables and, depending on the variable, an operational definition. In addition to the glossary, IPEDS also provides a User Manual to assist users in downloading the appropriate data. In order to access IPEDS data, the user has to access the IPEDS Data Center online and select the appropriate tool. Once the variables of interest are chosen, the user downloads the data into a comma delineated file and can then use the data for analysis.

The dependent variables for this study were graduation rates, retention rates, and transfer rates. The independent variables were participation in ATD, control of institution, total enrollment, race/ethnicity, gender, the total core expenses per each full-time equivalent, the percent of first-time, full-time students receiving financial aid, the student to faculty ratio, and the percent of enrollment that are full-time students. This information is displayed in Table 3.1 (below).
Table 3.1
*Description of Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type of Variable</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATD Participation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID1</td>
<td>ATD: 1, Non-ATD: 0</td>
<td>Categorical</td>
<td>Dummy variables assigned, with ATD as the reference</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control of Institution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID2</td>
<td>ID2: Public: 1, Private: 0</td>
<td>Categorical</td>
<td>Dummy variables assigned, with Public as the reference</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID3</td>
<td>Total Enrollment</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID4</td>
<td>FTE Fall Enrollment</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percent of Total Enrollment that are American Indian or Alaska</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID5</td>
<td>Native</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percent of Total Enrollment that are Asian/Native</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID6</td>
<td>Hawaiian/Pacific Islander</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percent of Total Enrollment that are Black or African American</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID7</td>
<td>Hispanic/Latino</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID8</td>
<td>Enrollment that are White</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID9</td>
<td>Enrollment that are two or more races</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID10</td>
<td>Enrollment that are Race/ethnicity unknown</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID11</td>
<td>Nonresident Alien</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID12</td>
<td>Percent of Total Enrollment that are women</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID13</td>
<td>Total Core Expenses per FTE</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

34
Table 3.1
**Description of Variables – cont.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type of Variable</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID15</td>
<td>Percent of full-time first-time undergraduates receiving any financial aid</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID16</td>
<td>Student-to-faculty ratio</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>ID17</td>
<td>Percent full-time enrollment</td>
<td>Continuous</td>
<td>Derived from adding full-time enrollment and part-time enrollment numbers, then dividing the full-time number by the total</td>
</tr>
<tr>
<td>DV1</td>
<td>Graduation Rate</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>DV2</td>
<td>Transfer Rate</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>DV3</td>
<td>Retention Rate</td>
<td>Continuous</td>
<td></td>
</tr>
</tbody>
</table>

**Data Analysis**

The first step in data analysis was to clean the data extracted from the IPEDS data system. The data extracted were filtered by Carnegie Classification (Associate’s Degree granting), yielding 1520 institutions. There were many cases of missing data; a propensity score could not be created for schools with missing data, so those schools were removed. Next, the file was reviewed for outliers or obvious errors within the data. For example, schools with core expenses of one dollar were removed as this was not a realistic figure. Finally, any schools that participated in Achieving the Dream after 2007 (the last cohort used in this study) were removed due to their participation status. After outliers and missing data were removed, 739 schools remained.

The first method of statistical analysis conducted in this study was Propensity Score Matching. The concept behind propensity score matching is to compare two groups; one group is considered to have received a treatment and the other is considered to have not received the same treatment (ATD participant and non-ATD participant). Propensity score matching was the best analysis for this study because it allowed for unequal numbers of cases for the treatment and control group (prior to matching), and evens out the groups by pulling matches from the larger sample and pairing them with the smaller sample. “Matching is a method of sampling from a
large reservoir of potential controls to produce a control group of modest size in which the
distribution of covariates is similar to the distribution in the treated group” (Rosenbaum &
Rubin, p. 48).

Also, propensity score matching allowed for variables outside of the treatment
(conditioning variables) to be accounted for through the matching of pairs based on similar
characteristics. “In a well-matched pair, it is as if we are using the same individual twice. When
matching is adequate, the variables used for matching that might cause confounding problems
are controlled” (GMAC, 2006, p. 1). According to David Harding (2003), “propensity score
matching offers advantages over more traditional regression techniques: matching estimators are
nonparametric, generally more efficient, largely avoid problems of multicollinearity, and ensure
that treatment and control cases are reasonable comparisons” (p. 682).

Propensity score matching is done through logistic regression, and each of the
conditioning variables are entered; statistical software then provides a propensity score. The
propensity score is defined as “the probability of exposure to the treatment conditional on a
subject’s observed baseline characteristics” (Austin, 2011, p. 150). Essentially, if one did not
know which group a particular school belonged to (treatment or non-treatment), the propensity
score is the probability that the school would be a member of the treatment group. *Nearest
Neighbor Matching* is the type of propensity score matching that was used in this study to
determine the appropriate matches to the ATD group from the non-ATD group.

Using nearest neighbor matching, the ATD group was randomly ordered, and then each
participant was matched with its nearest neighbor (which has the closest propensity score) (Guo,
et al., 2004). Each ATD school was matched with only one non-ATD school, which is referred to
as “greedy” matching (Guo, et al., 2004). The caliper width for matching (or tolerance level) is
.02 as suggested by the literature (Austin, 2011).

Once the matching was complete, each school was placed into the ATD and non-ATD
groups. Descriptive statistics were run in order to determine that each of the pairings was a
suitable match. The descriptive data are provided in Chapter 4. After the matching phase of the
analysis was complete, three individual independent t-tests were performed to compare the
means of each the variables of interest, graduation, retention and transfer rates of the ATD and
non-ATD participants. Three individual independent t-tests were used because all of the original
independent variables were controlled for in the propensity score matching process.
After the propensity score matching analysis was complete, a multiple regression was run on the 70 ATD and 669 non-ATD schools (for a total of 739 schools). Though regression is often used to make predictions, this study used it to examine the relationship of being an ATD school on graduation, retention and transfer rates. The multiple regression model used similar independent variables as the propensity score analysis, which is explained further in the next section. Multiple regression was run on each of the three outcome variables: graduation rates, retention rates and transfer rates.

**Assumptions of Statistical Models**

**Propensity Score Matching**

In propensity score matching, one must establish “strongly ignorable treatment assignment”, which means that all observable characteristics have been included in the model so that treatment assignment can largely be ignored, and the effect of the treatment can be measured (Rosenbaum & Rubin, 1983; Rosenbaum, 1984; Harding, 2003). In order to meet this assumption, an extensive review of the literature was conducted to determine which available variables from the IPEDS database could be confounding variables. Additionally, a sample of the matched ATD and non-ATD schools were examined to determine if evidence of student success initiatives (such as a TRIO program) could have an impact on the results. As each school selected had a type of student success program, this variable was not included in this study as an independent variable.

**Multiple Regression**

There are assumptions with multiple regression that must be satisfied in order to be able to use the results of the multiple regression. The assumptions are: the residuals have a normal distribution, with a mean of zero, homogeneity of variance of the residuals, that the residuals are independent of each other, and that there are no instances of multicollinearity within the model. To determine if any of these assumptions were violated, a scatterplot, a probability plot, and a histogram were produced to visually examine the standardized residuals. The scatterplot showed a cloud of standardized residuals with no identifiable pattern; the probability plot displayed a tightly-fit line with a slight deviation of standardized residuals along the zero-mean line; finally, the histogram displayed a normal, bell-shaped curve with very few outliers.

An examination of the coefficients output from the model indicated that the model initially had issues with multicollinearity; Race/ethnicity variables, Total Enrollment and Full-
time FTE fall enrollment appeared to have the issue of multicollinearity. Specifically, the race/ethnicity variables appeared to highly correlate with each other. The same was true for the full-time enrollment and full-time equivalent fall enrollment variables.

Each of the race/ethnicity variables had a value greater than 10 in the VIF (variance inflation factor) column in the output. According to Cohen, et. al. (2003), a value greater than 10 “provides evidence of serious multicollinearity involving the corresponding IV” (p. 423). The reason behind the high values for the race/ethnicity variables is that they are all derivations of one greater measurement: race/ethnicity. If one were to add up all of the values of the race/ethnicity variables in one row, the values will add to 100%. Cohen, et. al. (2003) stated that when “the analyst has included several highly correlated variables that can be thought of as measuring the same underlying construct, the model can be revised by combining the variables into one variable” (p. 426).

The following variables were collapsed into one categorical variable: percent of total enrollment that are American Indian or Alaska Native, percent of total enrollment that are Asian/Native Hawaiian/Pacific Islander, percent of total enrollment that are Black or African American, percent of total enrollment that are Hispanic/Latino, percent of total enrollment that are White, percent of total enrollment that are two or more races, percent of total enrollment that are race/ethnicity unknown, and percent of total enrollment that are nonresident alien. The three race/ethnicities that represented the largest group were assigned a categorical number, along with the creation of an “other” category, and were renamed “Race/Ethnicity”. Table 3.2 illustrates the recoded variable.

Table 3.2

Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>612</td>
<td>82.81%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>40</td>
<td>5.41%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>59</td>
<td>7.98%</td>
</tr>
<tr>
<td>Other</td>
<td>28</td>
<td>3.79%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>739</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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Similar in nature to the race/ethnicity variables, the full-time equivalent fall enrollment variable was a derivation of the total enrollment variable. Cohen, et. al. (2003) suggested that a variable can be dropped from the model in order to reduce multicollinearity. An examination of the collinearity diagnostics output showed that total enrollment had a relationship of .38, whereas full-time equivalent fall enrollment had a relationship of .08; based on the two relationships, the full-time equivalent fall enrollment was removed from the model. As propensity score matching is largely resistant to multicollinearity (Harding, 2003), the recoding and removal of variables was not done for the propensity score matching model.

**Limitations**

There are some limitations to this study that need to be addressed. First, this study assumed that the data provided to IPEDS are correct, accurate and free of errors. However, a majority of the non-ATD schools and 12% of the ATD schools had some form of missing data or had erroneous entries. Another limitation of using IPEDS data is that the data provided by IPEDS are one to two years behind the current year. As this is the case, data from 2009 were used, which means that the population size of ATD schools was reduced to 70 schools. One additional limitation of the IPEDS data is that the IPEDS definitions for transfer rate and graduation rate are similar; the interpretation of each is determined by each reporting campus.

Second, the technique of propensity score matching has some limitations. Using this technique may not remove all of the bias due to unobservable characteristics. Propensity score matching can only match the pairs of schools based on observable characteristics. Individual student motivation, institutional policies (and the enforcement of) and level of commitment to data-informed decision-making are a few examples of unobservable characteristics. Additionally, in the matching process, there may be more than one non-ATD school that may have the same propensity score and therefore each could be matched to the corresponding ATD school. Though this was not the case in this study, the limitation had to be mentioned. A final limitation with propensity score matching is that there is little research indicating the ideal caliper width when creating matches (Austin, 2011). This study used a delta of .02 as the acceptable range based on the limited amount of research available (Austin, 2011).

**Summary**

Per the conceptual framework provided by ATD, participating schools from 2004-2007 were used in this study because each of the cohorts had participated in ATD for at least two
years. The statistical methods used in this study were propensity score matching and individual t-tests, as well as multiple regression to verify the results. Propensity score matching is done through a logistic regression, and a propensity score is created. Each ATD school was then matched with a non-ATD school. Once the matching was complete, the ATD and non-ATD groups were compared on graduation, retention and transfer rates. Multiple regression was used to compare ATD and non-ATD schools in order to verify the results of the propensity score matching.

This study was able to measure only the observable characteristics of each school, which was provided by the IPEDS database. Unobservable characteristics such as the level of commitment to ATD were not able to be measured.
CHAPTER IV

RESULTS

This chapter provides the results from each data analysis model to answer the three research questions presented in this study. The chapter is organized as follows: the first section reports on the propensity score matching model followed by descriptive statistics for all matched ATD school and non-ATD schools for all variables. Second, the results of the independent t-tests for the dependent variables are reported. Third, the section on the multiple regression model follows; reported first are descriptive statistics for the sample for all variables. Finally, the results of the multiple regression follow. Additionally, this chapter contains information on supplemental analyses.

Propensity Score Matching

The Matching Process

Logistic regression was run on the 739 schools using the independent variables listed in Chapter 3, with the outcome variable of ATD participation; this procedure was done using IBM® SPSS® 17.0 statistical software. The logistic regression was run in order to produce the propensity score (probability of being an ATD school) used to match ATD and non-ATD schools. Because the caliper width used in this study was .02, only 60 of the 70 ATD schools were able to be matched with the remaining non-ATD schools. All matches fell well within the caliper width of .02, with .0095 as the largest match width. The remaining unmatched schools were well above .02. The list of matched schools is provided in Appendix B.

Descriptive Statistics

After the schools had been matched, descriptive statistics were run to see how well the two groups matched each other. Table 4.1 provides the descriptive statistics for all of the variables, using only matched ATD schools. Table 4.2 provides the descriptive statistics for all of the variables, using only matched non-ATD schools. Most importantly, Table 4.3 shows the differences in the means between the matched ATD and non-ATD schools.
Table 4.1

*Descriptive Statistics of matched ATD Schools*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Participation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Control of Institution</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>1579</td>
<td>46619</td>
<td>9901.97</td>
<td>9226.86</td>
</tr>
<tr>
<td>FTE Fall Enrollment</td>
<td>816</td>
<td>27177</td>
<td>5994.40</td>
<td>5458.57</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are American Indian or Alaska Native</td>
<td>0</td>
<td>9</td>
<td>0.98</td>
<td>1.71</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Asian/Native Hawaiian/Pacific Islander</td>
<td>0</td>
<td>82</td>
<td>6.58</td>
<td>15.69</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Black or African American</td>
<td>0</td>
<td>58</td>
<td>18.37</td>
<td>15.21</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Hispanic/Latino</td>
<td>0</td>
<td>86</td>
<td>15.05</td>
<td>19.66</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are White</td>
<td>6</td>
<td>97</td>
<td>50.85</td>
<td>20.49</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are two or more races</td>
<td>0</td>
<td>6</td>
<td>0.55</td>
<td>1.38</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Race/ethnicity unknown</td>
<td>0</td>
<td>27</td>
<td>6.13</td>
<td>6.70</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Nonresident Alien</td>
<td>0</td>
<td>11</td>
<td>1.37</td>
<td>2.17</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are women</td>
<td>31</td>
<td>72</td>
<td>59.80</td>
<td>6.26</td>
</tr>
<tr>
<td>Total Core Expenses per FTE</td>
<td>6854</td>
<td>22508</td>
<td>11349.85</td>
<td>3520.72</td>
</tr>
<tr>
<td>Percent of full-time first-time undergraduates receiving any financial aid</td>
<td>31</td>
<td>96</td>
<td>68.25</td>
<td>17.44</td>
</tr>
<tr>
<td>Student-to-faculty ratio</td>
<td>14</td>
<td>46</td>
<td>21.15</td>
<td>5.05</td>
</tr>
<tr>
<td>Percent full-time enrollment</td>
<td>23</td>
<td>69</td>
<td>41.70</td>
<td>9.33</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>3</td>
<td>53</td>
<td>16.35</td>
<td>9.09</td>
</tr>
<tr>
<td>Transfer Rate</td>
<td>2</td>
<td>67</td>
<td>20.35</td>
<td>10.76</td>
</tr>
<tr>
<td>Retention Rate</td>
<td>31</td>
<td>71</td>
<td>58.67</td>
<td>6.97</td>
</tr>
</tbody>
</table>

Note. n=60
Table 4.2

*Descriptive Statistics of matched non-ATD Schools*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Participation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Control of Institution</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>683</td>
<td>35880</td>
<td>9819.80</td>
<td>8497.39</td>
</tr>
<tr>
<td>FTE Fall Enrollment</td>
<td>357</td>
<td>19823</td>
<td>6159.17</td>
<td>5309.49</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are American Indian or Alaska Native</td>
<td>0</td>
<td>25</td>
<td>1.65</td>
<td>4.08</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Asian/Native Hawaiian/Pacific Islander</td>
<td>0</td>
<td>44</td>
<td>7.10</td>
<td>9.68</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Black or African American</td>
<td>1</td>
<td>93</td>
<td>18.28</td>
<td>20.81</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Hispanic/Latino</td>
<td>0</td>
<td>62</td>
<td>13.52</td>
<td>14.23</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are White</td>
<td>1</td>
<td>88</td>
<td>51.28</td>
<td>25.52</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are two or more races</td>
<td>0</td>
<td>4</td>
<td>0.55</td>
<td>1.02</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Race/ethnicity unknown</td>
<td>0</td>
<td>26</td>
<td>5.65</td>
<td>5.46</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Nonresident Alien</td>
<td>0</td>
<td>13</td>
<td>1.88</td>
<td>2.77</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are women</td>
<td>41</td>
<td>75</td>
<td>60.20</td>
<td>6.23</td>
</tr>
<tr>
<td>Total Core Expenses per FTE</td>
<td>6402</td>
<td>21032</td>
<td>11378.42</td>
<td>3327.10</td>
</tr>
<tr>
<td>Percent of full-time first-time undergraduates receiving any financial aid</td>
<td>26</td>
<td>98</td>
<td>68.63</td>
<td>18.62</td>
</tr>
<tr>
<td>Student-to-faculty ratio</td>
<td>9</td>
<td>33</td>
<td>21.73</td>
<td>5.20</td>
</tr>
<tr>
<td>Percent full-time enrollment</td>
<td>16</td>
<td>68</td>
<td>44.68</td>
<td>12.34</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>5</td>
<td>56</td>
<td>19.92</td>
<td>10.97</td>
</tr>
<tr>
<td>Transfer Rate</td>
<td>0</td>
<td>39</td>
<td>18.40</td>
<td>8.08</td>
</tr>
<tr>
<td>Retention Rate</td>
<td>31</td>
<td>73</td>
<td>56.90</td>
<td>8.40</td>
</tr>
</tbody>
</table>

*Note. n=60*
Table 4.3

*Difference in Means and S.D.s of Matched Schools*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Participation</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Control of Institution</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>82.17</td>
<td>729.46</td>
</tr>
<tr>
<td>FTE Fall Enrollment</td>
<td>-164.77</td>
<td>149.08</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are American Indian or Alaska Native</td>
<td>-0.67</td>
<td>-2.37</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Asian/Native Hawaiian/Pacific Islander</td>
<td>-0.52</td>
<td>6.01</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Black or African American</td>
<td>0.08</td>
<td>-5.60</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Hispanic/Latino</td>
<td>1.53</td>
<td>5.43</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are White</td>
<td>-0.43</td>
<td>-5.03</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are two or more races</td>
<td>0.00</td>
<td>0.37</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Race/ethnicity unknown</td>
<td>0.48</td>
<td>1.23</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are Nonresident Alien</td>
<td>-0.52</td>
<td>-0.60</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are women</td>
<td>-0.40</td>
<td>0.04</td>
</tr>
<tr>
<td>Total Core Expenses per FTE</td>
<td>-28.57</td>
<td>193.62</td>
</tr>
<tr>
<td>Percent of full-time first-time undergraduates receiving any financial aid</td>
<td>-0.38</td>
<td>-1.18</td>
</tr>
<tr>
<td>Student-to-faculty ratio</td>
<td>-0.58</td>
<td>-0.15</td>
</tr>
<tr>
<td>Percent full-time enrollment</td>
<td>-2.98</td>
<td>-3.01</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>-3.57</td>
<td>-1.88</td>
</tr>
<tr>
<td>Transfer Rate</td>
<td>1.95</td>
<td>2.68</td>
</tr>
<tr>
<td>Retention Rate</td>
<td>1.77</td>
<td>-1.43</td>
</tr>
</tbody>
</table>

*Note. n is the number of paired matches (120 schools total, 60 matches)*

Table 4.3 shows that there is very little difference between the matched ATD and non-ATD schools in descriptive statistics. Total Enrollment for each group of schools is nearly
10,000 students, and there is a mean difference of only 82 students; both schools have FTE enrollment of nearly 6,000 and a difference of only 164 students. All of the variables relating to gender and ethnicity were within 1% of each other, with the exception of Hispanic/Latino; American Indian or Alaska Native .67%, Asian/Native Hawaiian/Pacific Islander .52%, Black or African American .08%, Hispanic/Latino 1.53%, White .43%, two or more races 0%, Race/ethnicity unknown .48%, and Nonresident Alien .52%. The difference between the percentage of women at ATD and non-ATD schools was .40%.

The Total Core Expenses per FTE at each school type are approximately $11,000, with a difference of only $28.57 per FTE. As with the Race/Ethnicity variables, the mean difference in the percentage of first-time, full-time students receiving financial aid was less than 1% (.38%). The student to faculty ratio at each type of school differed only by .58%, and the percentage of enrollment that is full-time students differed only by 2.98%. Regarding the dependent variables, graduation rates differed by 3.57%, transfer rates by 1.95% and retention rates by 1.77%.

**Outcome Variable Results**

Each individual outcome variable was compared with a t-test. None of the tests performed were found to be significant at the .05 level. The results of the graduation rate t-test were nearly statistically significant, but missed the cutoff; $t(118) = 16.35, p = .054$. The retention t-test showed that retention rates were higher, $t(118) = 6.97, p = .213$, but not statistically significant. Finally, the results of the transfer rate t-test also indicated higher rates at ATD schools but were not statistically significant; $t(118) = 20.35, p = .264$.

**Multiple Regression**

**Descriptive Statistics**

As Table 4.4 shows, the range of values indicate that the sample is comprised of both large and small community colleges, that the schools have a varied mix of races/ethnicities and gender composition, and that there is a large range of core expenses spent per FTE. There is also a considerable range in the student-to-faculty ratio with a minimum value of 6 and a maximum value of 48. Additionally, the range of values for the percentage of full-time enrollment is 91, with the lowest value of 9 and the greatest of 100.
Table 4.4

**Descriptive Statistics for Independent Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Participation</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>119</td>
<td>54942</td>
<td>7753.12</td>
<td>7496.94</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Percent of Total Enrollment that are women</td>
<td>10</td>
<td>75</td>
<td>57.70</td>
<td>7.14</td>
</tr>
<tr>
<td>Total Core Expenses per FTE</td>
<td>2015</td>
<td>49816</td>
<td>10982.81</td>
<td>3723.56</td>
</tr>
<tr>
<td>Percent of full-time first-time undergraduates receiving any financial aid</td>
<td>8</td>
<td>100</td>
<td>69.21</td>
<td>18.87</td>
</tr>
<tr>
<td>Student-to-faculty ratio</td>
<td>6</td>
<td>48</td>
<td>21.74</td>
<td>5.88</td>
</tr>
<tr>
<td>Percent full-time enrollment</td>
<td>9</td>
<td>100</td>
<td>44.63</td>
<td>13.34</td>
</tr>
</tbody>
</table>

*Note. ATD n= 70, Non-ATD n=669, total n=739; Control of Institution removed.*

**Outcome Variable Results**

When the multiple regression model was run on this data, Control of Institution was removed from the analysis because every school in the sample was a publicly-controlled institution; therefore, this variable added nothing to the model.

Unlike the propensity score Propensity score matching model, one multiple regression model had statistically significant findings. As shown in Table 4.5, graduation rates were lower at ATD institutions, and were statistically significant. Graduation rates at ATD schools were 4.23% lower than non-ATD schools. Retention rates and transfer rates were slightly higher for ATD schools, but were not statistically significant; these results are also shown in Table 4.5. Regression models are often used for prediction; in this study, multiple regression was used to examine the relationship between ATD participation and graduation, retention and transfer rates. As this model was not used for prediction, only the outcome variables are presented in Table 4.5.
Table 4.5

*Outcome Variables for ATD Schools*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation Rates</td>
<td>-4.23</td>
<td>1.37</td>
<td>-0.11</td>
<td>-3.09</td>
<td>.002</td>
</tr>
<tr>
<td>Retention Rates</td>
<td>1.71</td>
<td>1.23</td>
<td>0.050</td>
<td>1.39</td>
<td>.165</td>
</tr>
<tr>
<td>Transfer Rates</td>
<td>0.51</td>
<td>1.25</td>
<td>0.015</td>
<td>0.41</td>
<td>.682</td>
</tr>
</tbody>
</table>

*Note. N=739, ATD n=70, non-ATD n=669.*

**Supplemental Analyses**

Supplemental analyses were run on this data in order to replicate the findings and to examine the recoding and removal of variables’ impact on the results of the multiple regression model. First, the propensity score matching process was duplicated by randomly re-ordering the ATD schools and matching them with non-ATD schools. The matches produced the same findings as the initial propensity score matching model. Next, the regression analysis was run again, this time with the original independent variables (without collapsing or removing the variables) to see if the issue of multicollinearity would have any substantive effect on the outcome variables. The results were not substantially different; graduation rates remained the only outcome variable with a statistically significant result ($p = .009$) with 3.55% lower graduation rates at ATD schools.

**Summary**

In summary, both the propensity score matching model and the multiple regression model showed similar results for the outcome variables of graduation, retention and transfer rates. Graduation rates were shown in both models to be approximately 3.55 – 4.23% lower at ATD schools than at non-ATD schools; retention rates were shown to be approximately 1.8% higher at ATD schools; transfer rates were also shown to be higher at ATD schools. However, only graduation rates in the multiple regression model were found to be statistically significant ($p = .002$). Answering the research questions of this study, the results are as follows:

- There appears to be a difference in graduation rates between ATD and non-ATD schools, with one model showing a statistically significant difference ($p = .002$) of 4.23% lower graduation rate at ATD schools.
• There is no statistically significant difference in retention rates between ATD and non-ATD schools.
• There is no statistically significant difference in transfer rates between ATD and non-ATD schools.
CHAPTER V
DISCUSSION

This chapter provides the significant findings of this study, possible explanations for the findings, and implications for future practice and research. The purpose of this study was to compare Achieving the Dream and non-Achieving the Dream community colleges on three indicators of student success: graduation, retention and transfer rates. Two statistical models were used to measure the treatment effect (participation in ATD) on the outcome variables: propensity score matching and multiple regression. Multiple regression was used as a method to replicate the findings of the propensity score matching model, as propensity score matching is a relatively new procedure.

Conclusions

The propensity score matching model and the multiple regression model displayed similar results; neither model found retention or transfer rates to be statistically significant, though the rates for both retention and transfer were higher at ATD schools. Graduation rates were statistically significant in the multiple regression model, and nearly statistically significant in the propensity score matching model. With the multiple regression model, the result was a 4.23% lower graduation rate at ATD schools when compared to non-ATD schools. As this study used both models as a comparative tool, it would be erroneous to conclude that participation in ATD leads to lower graduation rates than if a school did not participate. However, graduation rates were shown to be lower at ATD schools in both statistical models. Specifically, the answers to the research questions of this study are:

- There appears to be a difference in graduation rates between ATD and non-ATD schools, with one model showing a statistically significant difference ($p = .002$) of 4.23% lower graduation rate at ATD schools.
- There is no statistically significant difference in retention rates between ATD and non-ATD schools.
- There is no statistically significant difference in transfer rates between ATD and non-ATD schools.

Lower graduation rates at ATD schools are consistent with the findings of MDRC’s 2011 report, *Turning the Tide: Five Years of Achieving the Dream at Community Colleges*. According
to MDRC’s (2011) quantitative analysis, “Trends in student outcomes remained relatively unchanged, except for modest improvements in gatekeeper (introductory) college English courses and the completion of courses attempted within the first two years” (p. iii). Though individual community colleges made strides in areas such as enhancing a culture of evidence and evaluations, the first cohort examined by MDRC did not reach the initial intended goals. The report offered some possible reasons for the lack of achievement, and the reasons offered are also applicable to this study’s results as well. Possible explanations follow the limitations section.

Limitations of the Study

This study was quantitative, and used existing publicly-available data; therefore unobservable characteristics could have provided a more in-depth analysis of the results of this study, if they were to be observed. There are several unobservable characteristics that could have been supplementary to this study: campus commitment to full participation in ATD, level of effort towards ATD participation, programmatic efforts related to student success at the campus, student motivation and or reasons behind ATD participation (or non-participation). The existence of these unobserved characteristics need to be considered when interpreting the results of this study.

Another limitation of this study is the sample size of schools for both the propensity score matching and multiple regression models. Nearly half of the original dataset downloaded from the IPEDS database was excluded due to erroneous entries or missing data. Additionally, only data through 2009 was available, meaning that approximately 80 additional ATD schools could not be included in this analysis. Only 60 of the original 2004-2007 ATD schools were able to be matched due to missing data and the use of a caliper range of .02. This left additional schools’ results out of the study, which could have added valuable data. Finally, this study was cross-sectional in nature, and does not account for changes over time. It is possible that some of the individual schools had increased student success outcomes on campus over time, but that change is not observable in this cross-sectional study.

Practical and Statistical Significance

As stated, only one outcome variable (graduation rates) was statistically significant in the multiple regression model. However, the propensity score matching model was nearly statistically significant with similar graduation rate results (approximately 3.55 - 4.23% lower rates at ATD schools). The findings from the two models, though not both statistically
significant, hold practical significance for administrators. Both models indicate that graduation rates are lower at ATD schools when compared to non-ATD schools. As of the writing of this dissertation, there are no other studies that have compared ATD and non-ATD schools on any indicators of student success. As such, until the study can be replicated with future data, the results should be regarded as tentative.

There are many possible explanations for the lower graduation rates, and the limitations of this study must be taken into account when interpreting these results. The results of this study are in no way a failure for Achieving the Dream; the results simply show that this cohort of participants had not achieved the desired level of student success related to graduation, retention and transfer rates when compared with non-ATD schools.

Discussion

Campus Change

This study examined schools who had participated in ATD for two to five years, and the results were compared with non-ATD schools during the same time frame. This comparison was based on ATD’s original intentions to increase student success called Process for Institutional Change (As shown in Figure 3.1 in Chapter 3). According to this framework, campuses are encouraged to assess outcomes after two years of Achieving the Dream participation. However, the literature suggests that campus change is a long-term effort that requires intentional efforts to create change. The first possible explanation for the results of this study is that significant change on a campus (either practical or statistical) does not take place within two to five years.

In order to increase student success at community colleges, Achieving the Dream (2011b) offers four principles for creating institutional change: committed leadership, use of evidence to improve programs and services, broad engagement and systemic institutional improvement. However, achieving campus change can be difficult, especially when attempting large-scale initiatives.

A primary consideration for campus change is the campus culture itself; if the desired change (in this case, an increase in student success) is implemented in alignment with the current campus culture, the effort is more likely to be successful (Kezar & Eckel, 2002). Campus change cannot be solely a top-down decision, nor can new campus initiatives survive without leadership support but must instead be a collaborative effort across the campus (Rhoades, 2000). These suggestions align with one of the limitations of this study; the level of organizational
commitment to participation in Achieving the Dream is an unobservable, perhaps immeasurable characteristic and cannot be accounted for in this quantitative study. It is possible that participation in Achieving the Dream for any of the campuses was a decision made without extensive consultation or support from stakeholders and campus constituencies, thus making change difficult.

**Campus Programmatic Efforts**

A limitation of this study is that an examination of programmatic efforts at all of the individual campuses could not be accomplished, meaning that the absence of such programs could be a possible explanation for lower graduation rates at ATD colleges. To assist new participants in determining appropriate student success initiatives, Achieving the Dream (2011g) provides a list of *Promising Practices*: “college readiness programs, mandatory new student orientation, student success courses, developmental course redesign, curriculum redesign, cooperative learning, learning communities, and intensive and individualized advising” (para. 2). Additionally, the literature provides support for the best practices suggested by Achieving the Dream—specifically, new student orientation, student success courses, developmental courses, learning communities and individual advising (Kuh, et. al, 2005; Pascarella & Terenzini, 2005).

It was not possible to include every programmatic approach by each individual ATD college; however, as stated in Chapter 4, a sample of the matched ATD schools were examined to see if there were any evidence of Federal TRIO programs (TRIO, not an acronym, but to represent the first three programs created by the federal government) (United States Department of Education, 2012) on the campuses, potentially explaining why some ATD schools had higher rates than other schools. TRIO programs are designed to assist students from disadvantaged backgrounds, and include programs such as Upward Bound and Summer Bridge (United States Department of Education, 2012). The sample consisted of 12 schools, or 20% of the total matched ATD schools. Though each school from the sample had evidence of a TRIO program with the exception of one, the process would have to be replicated for each promising practice suggested by ATD and the literature.

**Targeted Population**

Finally, one of the most obvious potential explanations for the results of this study is that the schools which need to participate in Achieving the Dream are the ones which already have lower rates in the areas that indicate student success. As this study did not perform a pre- and
post-test analysis on each ATD school, it is unknown where each school began with the outcome variables used in this study. Schools who were already showing high rates of student success would not necessarily be the ones who would participate in an initiative to increase student success; therefore, it could be concluded that schools with lower graduation, transfer and retention rates would be the ones in need of a type of program like Achieving the Dream and would be more likely to participate. Additionally, as mentioned earlier, some schools may have had a greater commitment to participating in ATD, and this study was not able to measure the level of commitment at each school.

**Implications for Future Practice and Research**

This study focused on three indicators of student success that are prevalent in the literature: graduation, retention and transfer rates. However, as stated earlier, there is no commonly accepted definition for student success; though the term is used often. The ability to measure student success can only be accomplished by determining what student success is, and how it can be measured. Each community college must define student success for their campus and then establish ways in which to measure progress.

Recent national attention to student success has highlighted the need to increase the number of graduates to stay competitive on an international scale. “The U.S. has fallen in international education rankings. In one single generation, America went from 1st to 12th in college completion rates for young adults” (ATD, 2011c). In addition to educational reports, increasing the number of graduates from community colleges has been addressed by the president of the United States (The White House, 2009). In response, programs like Achieving the Dream have developed in order to assist colleges in increasing student success.

Additional research is needed as Achieving the Dream is a relatively new program; it only began in 2004. As more community colleges join Achieving the Dream, more data will be available for research. As data become available, either via a publicly available source (such as IPEDS) or released from MDRC, researchers can continue to determine the effectiveness of the intervention. Each year, Achieving the Dream collects data from its participating colleges in order to modify the program to better assist community colleges in increasing student success.

Replication of this study in future years with additional data would provide a more complete picture of how participation in Achieving the Dream affects determined indicators of student success. Future researchers should also consider the value of adding a qualitative piece in
order to eliminate some of the limitations of this study; specifically, “Why did a particular college choose to join ATD?”, “Why are student success indicators greater at non-participating colleges?”, and finally, “How do individual colleges measure student success?” The answers to these questions would provide a more robust analysis.

Each participating school must spend $125,000 over three years to participate in Achieving the Dream. This is money that could be used elsewhere on initiatives such as increased staffing, new programs targeting at-risk populations, or for increasing the capacity for program evaluation. The results of this study should not automatically deter future participants from joining Achieving the Dream; they should be a part of the decision-making process.

Despite the fact that this study found lower graduation rates at Achieving the Dream schools, the study was unable to answer why. Future research should incorporate qualitative analysis to answer why, in addition to quantitative analysis that can measure indicators of student success. If the United States of America wishes to remain competitive in a global market, more citizens need post-secondary education. Recently, the College Board released *The College Completion Agenda 2011 Progress Report*. The results of this report state that the number of graduates ages 25-34 has decreased slightly (Lee, et. al, 2011). Programs like Achieving the Dream can assist community colleges in increasing student success (and the number of graduates), but further research is needed to determine the effectiveness of participating in the program.

**Summary**

The only statistically significant finding in this study was graduation rates in the multiple regression model. Graduation rates were 4.23% lower at ATD schools than at non-ATD schools. However, this study was unable to assess why graduation rates were lower. There are many possibilities as to why the rates were lower, such as the target audience for the ATD program, unobservable characteristics such as level of commitment to ATD and simply the length of time it takes to make significant change on a community college campus. Future research is warranted to determine why graduation rates are lower at ATD schools, as well as to determine if ATD schools see an increase in student success over time.
APPENDIX A

LIST OF ACHIEVING THE DREAM SCHOOLS USED IN MULTIPLE REGRESSION;
ALPHABETICAL BY STATE

Arkansas (4)
National Park Community College (2007)
Ouachita Technical College (2007)
Phillips Community College (2007)
Pulaski Technical College (2007)

Connecticut (3)
Capital Community College (2005)
Housatonic Community College (2005)
Norwalk Community College (2005)

Florida (4)
Broward Community College (2004)
Hillsborough Community College (2004)
Tallahassee Community College (2004)
Valencia Community College (2004)

Hawaii (6)
University of Hawaii Community Colleges (2007)
   Hawaii Community College
   Honolulu Community College
   Kapiolani Community College
   Kauai Community College
   Leeward Community College
   Winward Community College

Massachusetts (4)
Bunker Hill Community College (2007)
Northern Essex Community College (2007)
Roxbury Community College (2007)
Springfield Technical Community College (2007)

Michigan (5)
Bay de Noc Community College (2007)
Henry Ford Community College (2007)
Jackson Community College (2007)
Lake Michigan College (2007)
Wayne County Community College District (2007)
New Mexico (3)
New Mexico State University-Dona Ana (New Mexico State Univ.) (2004)
Santa Fe Community College (2004)
University of New Mexico-Gallup (University of New Mexico) (2004)

North Carolina (1)
Wayne Community College (2004)

Ohio (3)
Cuyahoga Community College (2005)
Eastern Gateway Community College (2005)
Sinclair Community College (2005)

Oklahoma (3)
Oklahoma City Community College (2007)
Rose State College (2007)
Tulsa Community College (2007)

Pennsylvania (5)
Community College of Allegheny County (2006)
Community College of Philadelphia (2006)
Delaware County Community College (2006)
Montgomery County Community College (2006)
Northampton Community College (2006)

South Carolina (4)
Aiken Technical College (2007)
Orangeburg-Calhoun Technical College (2007)
Technical College of the Low Country (2007)
Trident Technical College (2007)

Texas (14)
Alvin Community College (2006)
Brookhaven College (2004)
Coastal Bend College (2004)
College of the Mainland (2006)
Galveston College (2004)
Houston Community College System (2004)
Lee College (2006)
Lone Star College System (2006)
Paris Junior College (2007)
San Jacinto College (2006)
South Texas Community College (2004)
Southwest Texas Junior College (2004)
Wharton County Junior College (2006)
Virginia (6)
Danville Community College (2004)
Mountain Empire Community College (2004)
Northern Virginia Community College (2007)
Patrick Henry Community College (2004)
Paul D Camp Community College (2004)
Tidewater Community College (2004)

Washington (6)
Big Bend Community College (2006)
Highline Community College (2006)
Renton Technical College (2006)
Seattle Central Community College (2006)
Tacoma Community College (2006)
Yakima Valley Community College (2006)
# APPENDIX B

## MATCHED ACHIEVING THE DREAM AND NON-ACHIEVING THE DREAM SCHOOLS

<table>
<thead>
<tr>
<th>Institution</th>
<th>Institution</th>
<th>Propensity Score</th>
<th>Propensity Score</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renton Technical College</td>
<td>Dakota County Technical College</td>
<td>0.006775445</td>
<td>0.006824554</td>
<td>-0.000049109</td>
</tr>
<tr>
<td>Eastern Gateway Community College</td>
<td>Mohawk Valley Community College- Utica Branch</td>
<td>0.020666765</td>
<td>0.020642273</td>
<td>0.000024492</td>
</tr>
<tr>
<td>Bay de Noc Community College</td>
<td>Three Rivers Community College</td>
<td>0.023404297</td>
<td>0.023392513</td>
<td>0.00011784</td>
</tr>
<tr>
<td>Patrick Henry Community College</td>
<td>Tri-County Technical College Maysville Community and Technical College</td>
<td>0.026538801</td>
<td>0.026523934</td>
<td>0.00014867</td>
</tr>
<tr>
<td>Big Bend Community College</td>
<td>Lamar Community College Sullivan County Community</td>
<td>0.035477072</td>
<td>0.035512857</td>
<td>-0.00003785</td>
</tr>
<tr>
<td>Parson Junior College</td>
<td>College</td>
<td>0.035585825</td>
<td>0.035539356</td>
<td>0.00004649</td>
</tr>
<tr>
<td>National Park Community College</td>
<td>Scottsdale Community College Quinsigamond Community College</td>
<td>0.047037955</td>
<td>0.047342564</td>
<td>-0.000304609</td>
</tr>
<tr>
<td>Ouachita Technical College</td>
<td>College</td>
<td>0.047597335</td>
<td>0.047521294</td>
<td>0.00076041</td>
</tr>
<tr>
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REFERENCES


Southern Regional Education Board. (2010). Promoting a culture of student success: how colleges and universities are improving degree completion. Atlanta, GA: Southern Regional Education Board.


BIOGRAPHICAL SKETCH

Sarah Grace Luczyk was born in Cleveland, Ohio, and was raised in North Royalton, Ohio. Sarah earned her Bachelor of Science in Child and Family Community Services from Bowling Green State University in 2002, where she began her career in Student Affairs as a Resident Advisor. Sarah then moved to North Carolina to pursue her Masters of Arts in College Student Development at Appalachian State University and held a Graduate Hall Director assistantship. During the summer, Sarah completed and Association of College and University Housing Officers – International (ACUHO-I) internship at Rutgers University – Newark in the Office of Residence Life.

Sarah began working at Oakland University in the Office of Housing and Residence Life prior to graduation as an intern. Upon graduation in 2004, Sarah accepted a full-time offer for Program Coordinator position. In 2006, Sarah returned to Bowling Green State University as a Hall Director for the Department of Housing and Residence Life. Upon being accepted into the Doctoral Program at The Florida State University in 2008, Sarah moved to Tallahassee to begin her studies.

Upon arriving at The Florida State University, Sarah began working for the Office of New Student and Family Programs as a First Year Experience Graduate Assistant. The following May, Sarah began working for the Association for Institutional Research, which turned into the full-time position of Project Manager in the Fall semester. In the Fall 2011 semester, Sarah returned to full-time student status and held a Graduate Research Assistant position with Dr. Bradley Cox on the Linking Institutional Policies to Student Success project. Sarah successfully defended her dissertation in May of 2012, and will graduate in August of 2012.