Testing the Strength of the Safety Net: Temporary Assistance to Needy Families (TANF) Recipients’ Persistence at LaGuardia Community College

Michael A. Baston
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Testing the Strength of the Safety Net: Temporary Assistance to Needy Families (TANF) Recipients’ Persistence at LaGuardia Community College

Abstract
This study, which used a quantitative, quasi-experimental constructed comparison group design, explored the persistence of Temporary Assistance for Needy Families (TANF) recipients’ at LaGuardia Community College over a six year period. TANF is the nation’s primary cash assistance program for public assistance recipients. This study operationalized community college student persistence using three outcomes: (1) semester to semester retention, (2) rate of credit accumulation and (3) rate of graduation for the treatment group (TANF participants in a drop-out prevention program) compared to the control group (constructed comparison group). TANF recipients’ persistence rate as measured by semester to semester retention, credit accumulation, and graduation rate was equivalent to the constructed comparison group when compared. The findings suggest that, given proper support, TANF recipients can persist at rates comparable to similar students of the general student body. An unanticipated result from the study was that the data demonstrated TANF recipients stopped out more frequently than the constructed comparison group over the study period, but still accumulated credits and graduated at rates comparable to the constructed comparison group. This result suggested the students have the resiliency necessary to persist and complete even when their study is interrupted due to unforeseen life changes. The implications of the study signal to practitioners the importance of understanding the specific reasons for a student’s need to stop out so that the appropriate mix of support strategies can be offered as alternatives to withdrawal in an effort to help them graduate.

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Testing the Strength of the Safety Net:
Temporary Assistance to Needy Families (TANF) Recipients’
Persistence at LaGuardia Community College

By

Michael A. Baston

Submitted in partial fulfillment
of the requirements for the degree
Ed.D. in Executive Leadership

Supervised by
Dr. Jerry Willis

Committee Member
Dr. Byron Hargrove

Ralph C. Wilson, Jr. School of Education
St. John Fisher College

December, 2012
Dedication

This dissertation is dedicated to God the Father, Son and Holy Spirit. He has supplied all my needs both spiritual and temporal. I dedicate this dissertation to my wife Tasha whose steadfast love and support has made this journey a labor of love. You encouraged me to go forward with the notion of this task and you lifted me up in every way every step of the way. I will forever be grateful for your sacrifices and selflessness. I thank the generations that came before me, on whose shoulders I stand. My parents, grandparents and extended family taught me from an early age to do my best and to be a good example. Two extraordinary women who have made me much of who I am and have fallen to sleep in the Lord, my dear sweet mother Gwendolyn Yvette Baston and my buddy and great woman of God Grandma Dorothy Baston. While you are not here to share this moment physically, I dedicate this dissertation to you because you live in and through me. You were the wind beneath my wings and my sheros! To Michael A. Baston, my dad, I love you so much and dedicate this dissertation to you as well. You worked tirelessly all of your life to ensure that your children had a roof over their heads, clothes on their backs and food in their stomachs. You made sure that I could have the opportunity that a good education affords. Thank you for giving me the chance that so many never have, to realize their dreams through the love of their father and a good education.

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I want to thank my staff, especially my Deans and office staff who were moral support. You so understood and honored my “no late Friday afternoon meeting” rule because I belonged to Fisher at 5:00 pm. I thank Terik Tidwell who was also a great help by editing with me and spending many a late night discussing data analysis strategies.

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Biographical Sketch

Michael Anthony Baston has been the Vice President of Student Affairs at LaGuardia Community College since July 2010. Dr. Baston attended Iona College and graduated with a Bachelor of Arts degree in Political Science in 1994. He attended Brooklyn Law School from 1994 to 1997 and graduated with a Juris Doctor. Dr. Baston began doctoral studies in the Ed. D. Program in Executive Leadership at St. John Fisher College in 2010. He pursued his research in community college TANF recipient persistence under the direction of Dr. Jerry Willis, Dissertation Committee Chair, and Dr. Byron Hargrove, Dissertation Committee Member.
Abstract

This study, which used a quantitative, quasi-experimental constructed comparison group design, explored the persistence of Temporary Assistance for Needy Families (TANF) recipients’ at LaGuardia Community College over a six year period. TANF is the nation’s primary cash assistance program for public assistance recipients. This study operationalized community college student persistence using three outcomes: (1) semester to semester retention, (2) rate of credit accumulation and (3) rate of graduation for the treatment group (TANF participants in a drop-out prevention program) compared to the control group (constructed comparison group). TANF recipients’ persistence rate as measured by semester to semester retention, credit accumulation, and graduation rate was equivalent to the constructed comparison group when compared.

The findings suggest that, given proper support, TANF recipients can persist at rates comparable to similar students of the general student body. An unanticipated result from the study was that the data demonstrated TANF recipients stopped out more frequently than the constructed comparison group over the study period, but still accumulated credits and graduated at rates comparable to the constructed comparison group. This result suggested the students have the resiliency necessary to persist and complete even when their study is interrupted due to unforeseen life changes. The implications of the study signal to practitioners the importance of understanding the specific reasons for a student’s need to stop out so that the appropriate mix of support
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Chapter 1: Introduction

Educational attainment rates in the United States have “stagnated” (Business-Higher Education Forum [BHEF], 2010, p. 1) and are in much need of improvement. This is cause for concern and the impetus for President Obama stating: “By 2020 America will once again lead the world in producing college graduates” (BHEF, 2010, p. 3). The Obama Administration has made the goal of attaining a college degree a major priority (Ewell, 2010; Jenkins, 2011). Community colleges are a part of this equation and are integral to “placing the United States once again at the forefront of the world with respect to college attainment” (Ewell, 2010, p. 89). In a graph featuring 2010 data from the Organization for Economic Co-operation and Development (OECD) in the March 2011 “U.S. Department of Education College Completion Toolkit,” the US ranked nine out of thirty-six countries in percentage of adults between the ages of 25 to 34 having attained a tertiary education (U.S. Department of Education, 2011, p. 7). According to the BHEF (2010), the President has also asserted that community colleges will play a major role in this undertaking by “producing an additional five million degrees and certificates in the next 10 years” (BHEF, 2010, p. 3). This is a critical social and economic goal. For more than half of the new jobs that will be created in the United States, a postsecondary degree or certificate will be required (U.S. Department of Education, 2011). Community colleges serve as one of the ideal vehicles through which to educate and train future workers who will be needed to staff these jobs. In general, community colleges have made it possible for Americans to have access to postsecondary education, mostly at a
low cost (Jenkins, 2011, p. 1). Students who might not have gone to college in the past, including those receiving public assistance (i.e. Temporary Assistance to Needy Families, TANF), are able to attend community colleges. These institutions have improved “college access in the United States dramatically over the past 50 years” (Jenkins, 2011, p. 1). TANF is the nation’s primary cash assistance program for public assistance recipients.

Even with more college access the economic downturn the US has experienced has had an effect on enrollment and persistence. Economic instability has caused some students to drop out of college to care for their families during these challenging times (BHEF, 2010, pp. 9-10). In general, the lack of a college degree serves as a barrier to employment and success throughout life (Lotkowski, Robbins & Noeth., 2004, p. 1). Clearly, financing college without sufficient, dependable, and established funding makes it challenging to persist or graduate, particularly for TANF recipients. Furthermore, there is a lack of empirical evidence on programs designed to improve the persistence of TANF recipients in the literature. More studies are needed to help address this major college completion dilemma for students and community colleges.

This dissertation reports the findings of a quasi-experimental study of the effects of a drop-out prevention program on the persistence of TANF recipients enrolled at an urban community college. This first chapter of the dissertation will specify the problem of the study, theoretical rationale, statement of purpose, and research questions. The chapter then describes the potential significance of the study and defines some special terms used. The chapter concludes with a summary.
Statement of the Problem

Many students begin college, but do not complete it (Carey, 2005). In the case of community colleges, students often enroll for a semester, take off the succeeding semester and re-enroll in a later semester or change their academic programs multiple times (Ewell, 2010). This adversely influences enrollment patterns and completion rates. There are myriad reasons for students not completing their course of study, which in a significant number of cases has no relation to academic factors. Common responses provided for why community college students interrupt their enrollment, or drop out of school altogether, are that students are not adequately prepared for college, they lack the motivation to succeed, and they possess poor study skills (Habley & McClanahan, 2004). However, there are a plethora of non-academic factors that impact community college students’ ability to complete their course of study or obtain a credential, including inadequate financial resources, too many job demands, and too many family demands (Habley & McClanahan, p. 6).

Community college students who receive TANF face the same school, work, and family balance issues that other community college students face, but living in poverty without a support system can be an added barrier to completion. In a brief prepared by Shelley Waters Boots (2010) on behalf of The Ford Foundation, the Open Society Institute, and the Annie E. Casey Foundation, the author states, “Education and employment are the clearest pathways out of poverty, but millions of Americans who work do not earn enough to cover basic necessities” (p. 6). Public assistance (i.e. TANF) can help families and students “compensate for low wages and sporadic employment” (Waters Boots, 2010, p. 6). In the case of college students however, federal regulations
mandate that students who receive public assistance must “work” while pursuing their education, and there are only a few exceptions to this policy. The rationale behind this is rooted in the monumental welfare reform legislation that was passed by Congress in 1996 (Brock, Matus-Grossman, & Hamilton, 2001; Dann-Messier, 2001). In 1996, the Personal Responsibility and Work Opportunity and Reconciliation Act (PRWORA) replaced Aid to Families with Dependent Children (AFDC), which was the nation’s primary cash assistance program, with Temporary Assistance to Needy Families (TANF), and limited or restricted postsecondary education as an allowable work activity for welfare recipients (Dann-Messier, 2001).

Community colleges have helped to “set TANF recipients on a path toward reduced welfare dependence, increased employment opportunity, and economic gains” (Brock et al., 2001, p. 19). Some community colleges have done this in part by establishing welfare-to work partnerships with local municipalities to help public assistance recipients move forward with their lives (Brock et al., 2001, p. 19, Mathur, Reichle, Strawn, & Wiseley, 2004, Mayfield, 2001). Fenster (2003) conducted a comparison study of academic achievement between TANF recipients and the general population of community college students at an urban community college. She concluded that students who receive TANF could have academic achievement levels at or above students in the general population. To date, however, there has been little, if any, empirical examinations of persistence in this population of community college students (Melendez, Falcon, & Bivens, 2003). Consequently, in order to understand the effect of drop-out prevention and retention initiatives aimed at helping TANF recipients become
successful college students that graduate, it is important that such research be conducted. This dissertation describes a quantitative, quasi-experimental study on the topic.

**Theoretical Rationale**

The Beatty-Guenter Retention Strategy Model served as the theoretical framework for the dissertation study. Beatty-Guenter (1994) developed a typology of retention strategies. She distinguished the strategies by classifying them into sorting strategies, supporting strategies, connecting strategies and strategies that transform the student and the institution. Beatty-Guenter described sorting and supporting strategies as reactive efforts to assist students based on their backgrounds (Beatty-Guenter, 1994, p. 114). Connecting strategies were described as interactive, targeting both the student and the institution to foster relationships between the two (Beatty-Guenter, 1994, p. 114). Transforming strategies, as they relate to both the student and the institution, were described as proactive efforts to effect change in the student and the institution (Beatty-Guenter, 1994, p. 114).

All of the strategies outlined in the Beatty-Guenter model were relevant to this study which was designed to examine the effectiveness of a comprehensive drop-out prevention program offered at LaGuardia Community College for TANF recipients. It is called the Community College’s College Opportunities for Employment (COPE) Program. The comprehensive nature of LaGuardia’s COPE program and the fact that the Beatty-Guenter theoretical framework has been applied in a previous quasi-experimental study of the effects of a comprehensive drop-out prevention program on community college TANF recipient’s academic achievement, (Fenster, 2003), supported using the
approach as the study’s theoretical framework. Figure 1.1 is an illustration of the Beatty-Guenter Retention Strategy Model.

![Figure 1.1. The Beatty-Guenter retention strategy model. Adapted from Red River College website. Johnston, Veronique, Developing Strategies to Improve Student Retention: Reflections from a Scottish University, 2002, 4.](image)

**Significance of the Study**

The findings of the study have broad implications for the emerging national discussion of the importance of leveraging public benefits access initiatives with efforts that support the community college completion agenda. Overall, low college retention and completion rates are a national problem that strike at the core of the American higher education system. When students enter college and do not complete their programs, they
often run the risk of shutting themselves off to opportunities that could help enhance their lives. The significance of this problem is not lost on the federal government, as low college attainment rates have prompted President Obama to make increasing degree attainment a priority (Ewell, 2010; Jenkins, 2011). His goal is to also have the United States return to its former position as a nation with the most college educated population in the world (AIR, 2011). When students voluntarily depart college, this not only affects them and the schools they attend, it also affects the United States in terms of its ability to be globally competitive (www.completecollege.org/completion_shortfall/). Thus, completion challenges have major economic repercussions for students, colleges, and the nation.

Moreover, given that many students drop out because of financial reasons, students’ financial hardship could be lessened through the receipt of public benefits. Research indicates that the existence of drop-out prevention programs help students on public assistance meet TANF requirements and academically achieve in school (Fenster, 2003). Whether they persist to completion warrants review. Essentially, the success of low-income students contributes to the success of the community colleges they attend and the success of the nation.

**Purpose of the Study**

The purpose of this quasi-experimental quantitative study was to compare persistence between community college students enrolled in a drop-out prevention program for TANF recipients with the persistence of a control group from the general college population that did not participate in the drop-out prevention program but had the same probability of graduation as the treatment group students. For the purposes of the
study, persistence was defined as a student’s continued enrollment in the institution, making progress toward and ultimately completing their program of study. More specifically, the study operationalized community college student persistence using three outcomes: (1) semester to semester retention, (2) rate of credit accumulation and (3) rate of graduation for the treatment group (TANF participants in drop-out prevention program) compared to the control group (constructed comparison group).

**Research Questions**

As noted, the study explored whether TANF recipients who participated in a drop-out prevention program differed from students with the same probability of graduation who did not participate in the program. The study was designed to answer the questions:

1. Are there significant group differences in persistence (as measured by semester to semester retention) between community college TANF recipients who participated in a drop-out prevention program and matched non-participating general community college students enrolled at one community college?

2. Are there significant group differences in persistence (as measured by rate of credit accumulation per semester) between community college TANF recipients who participated in a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

3. Are there significant group differences in persistence (as measured by rate of graduation) between community college TANF recipients who participated in
a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

**Definition of Terms**

For the purpose of this study, the following is a definition of terms listed for clarification purposes:

**AACC.** The American Association of Community Colleges.

**CLASP.** The Center for Law and Social Policy.

**COPE.** College Opportunity to Prepare for Employment, a drop-out prevention program for public assistance recipients administered by LaGuardia Community College.

**Developmental need.** Remedial coursework.

**Generalization.** The extent to which research findings can be applied to larger populations and different settings.

**HDC.** Refers to human capital development programs.

**HWHD.** High wage high demand.

**HRA.** Human Resource Administration, a New York City municipal agency that administers the federally funded public assistance supports to eligible citizens.

**LFA.** Labor force attachment or job search.

**MDRC.** Manpower Research Demonstration Center, a non-profit, non-partisan education and social policy organization.

**MOE.** Maintenance of effort.

**Persistence.** A student’s continued enrollment in the institution, making progress toward and ultimately completing a program of study.
**PRWORA.** Personal Responsibility and Work Opportunity and Reconciliation Act, the law that made work a requirement of receiving public assistance benefits.

**PSM.** Propensity score matching, a non-experimental technique that addresses randomization through the reduction of the matching problem to a single dimension, the propensity score.

**Single Stop USA.** A not-for-profit organization that helps financially vulnerable families and students gain economic mobility by connecting them to existing benefits and services intended for them.

**TANF.** Temporary Assistance to Needy Families, the nation’s primary cash assistance program for public assistance recipients.

**URM.** Underrepresented minorities which include African Americans and Hispanics

**Welfare.** Public benefit programs sponsored by local, state nor federal municipalities to assist people in poverty move to self-sufficiency.

**Welfare-to-work.** The requirement under the Personal Responsibility and Work Opportunity and Reconciliation Act that public assistance recipients work as a condition for receiving benefits.

**Summary of Remaining Chapters**

This first chapter of the dissertation highlighted important aspects of the study. The future of the nation is tied to an educated workforce. Community colleges are poised to meet the education needs of the country. For community college students living on public assistance lack of a support system can be a barrier to college completion, but the extent of the barrier is unknown. Comparing persistence between community college
students enrolled in a drop-out prevention program for public assistance recipients with the success of a matched control group from the general college population that did not participate in the intervention but had the same probability of graduation as the treatment group students offered greater insight.

The Beatty-Guenter Retention Strategy Model provided an organizing framework for examining, understanding, and coordinating retention strategies in community colleges to address persistence. Ultimately, findings of the study have broad implications for the emerging national discussion of the importance of leveraging public benefits access initiatives with efforts that support the community college completion agenda.

Chapter 2 contains a literature review that provides greater insight into the practical and theoretical issues related to the problem. Chapter 3 describes the research design methodology including details of the research context, participants, and instruments used in the data collection. In Chapter 4 the results of the study including an explanation and analysis of the data are provided. Lastly, Chapter 5 includes a discussion and interpretation of the results highlighting implications of the findings, limitations, and recommendations.
Chapter 2: Review of the Literature

Introduction and Purpose

College persistence and completion serve as the cornerstones upon which professional/occupational and socioeconomic advancements are made possible for so many individuals in the United States. Success in higher education is commonly defined by a student’s persistence (i.e., continued enrollment in the institution), progression (i.e., successful accrual of credit hours), and completion of a degree or certificate at an institution (Crawford, 1999; Ganem & Manasse, 2011; Wild & Ebbers, 2002).

Thus, individuals who complete an academic or vocational program are thought to increase their odds of finding gainful and substantive employment. Chiefly, degree and credential bearers are in an advantageous position to contribute their needed talents and skills to society. Moreover, these individuals are thought to be well-suited to economically provide for themselves, their families, their communities, and the nation.

Overall, educational attainment is considered to be one of the most effective paths to success, particularly material success, in this nation. However, it appears that America continues to experience significant challenges with regard to college completion. In community colleges, specifically, students often stop in and out (Ewell, 2010), which has a negative effect on enrollment and completion. Scrivener and Coghlan (2011) frame this problem even further by stating:
Community colleges, with their open access policies and low tuition, are an important pathway into postsecondary education for nearly half of all U.S. undergraduates. Yet only one-third of all students who enter these institutions with the intent to earn a degree or certificate actually meet this goal within six years. (p. 1)

Not being prepared for the academic rigor of college, an absence of motivation to succeed, and poor study skills are some of the reasons why community college students stop in and out of college or permanently depart college (Habley & McClanahan, 2004). Notwithstanding academic factors, there are numerous non-academic factors that lead community college students to leave school such as inadequate financial resources and job and family obligations (Carey 2005; Habley & McClanahan, 2004). In addition to these factors, stress, housing and food insecurity, inadequate sleep, part time enrollment, and poor grades further contribute to students’ decisions to leave school (Cauthen & Orozco, 2009).

Students most susceptible to dropping out of college are low income and minority students (Carey, 2005; Cooper, 2010). This is disheartening in light of the fact that community colleges “make post-secondary education accessible to low-income, high-need populations” (Single Stop USA, n.d., p. 1) and these colleges “are one of the most effective vehicles for moving people out of poverty” (Single Stop USA, n.d., p. 1). Single Stop USA cites a 2010 American Association of Community Colleges (AACC) Fact Sheet when writing about the economic advantages of community college students earning a degree or credential: “the average expected lifetime earnings for a graduate with an associate degree are $400,000 more than a high school graduate earns” (as cited
in Single Stop USA, n.d., p. 1). Further, Pascarella and Terenzini assert, “the economic returns of completing a year of community college appear to be comparable to completing an equal number of credits at a 4-year college” (as cited in Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006, p. 77). Clearly, persistence and completion matter. Community college students who stay the course are able to improve their employment and earnings prospects.

Although staying the course is ideal, it is quite evident that application of this philosophy is problematic for some students. Non-traditional students, which include low income and minority students, experience significant completion challenges. These students are adults 25 and over; independent; enrolled part time; enrolled in two-year public colleges; and employed full or part time (Cauthen & Orozco, 2009). Even when these students receive financial aid they may still have unmet need not directly associated with the costs of attending college. Furthermore, a significant number of non-traditional students are dealing with other major priorities outside of school such as work, home, and their families. All too often for these students financial insecurity can lead to financial emergencies. According to Geckeler, Beach, Pih, and Yan (2008), financial emergencies can “interrupt or end” (p. 1) the educational pursuits of non-traditional students, chiefly low income students.

Nevertheless, for students experiencing financial challenges, particularly TANF recipients, leaving college may appear to be a better short-term alternative because it frees up time to work and handle other personal obligations. However, the underlying cost of not completing college may place students experiencing financial challenges at an employment and earnings disadvantage in the future. More than likely, remaining in
college can help to assuage future financial insecurity. But, present realities often trump future possibilities. For students who are experiencing financial challenges, seeing a return on their investment in college more than likely will not be as immediate as they would like. Consequently, if some students do not believe that their investment is paying off in the short-term, they are more at risk of leaving college and leaving behind a path to a better future. Undoubtedly, this places community colleges in a precarious predicament. Educating students whose personal financial priorities outweigh their educational aspirations is a challenging task. However, for students experiencing financial hardship, school sometimes becomes an afterthought. Hence, unmet financial need can serve as a barrier to completing college.

Research has shown that with an institutional support system in place student TANF recipients can succeed academically (Fenster, 2003). While researchers have identified ways to support student success through drop-prevention programs, the extent to which students on public assistance remain continuously enrolled and complete in light of program supports has not been sufficiently addressed in the literature. This dissertation study therefore focused on three questions. First, are there significant group differences in persistence (as measured by semester to semester retention) between community college TANF recipients who participate in a drop-out prevention program and matched non-participating general community college students enrolled at one community college? Second, are there significant group differences in persistence (as measured by rate of credit accumulation per semester) between community college TANF recipients who participate in a drop-out prevention program and matched non-participating general community college students enrolled at one college community? Lastly, are there
significant group differences in persistence (as measured by rate of graduation) between community college TANF recipients who participate in a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

The data came from a quantitative analysis of the semester-to-semester retention, rate of credit accumulation, and rate of graduation between a treatment cohort enrolled in a drop-out prevention program and a control cohort from the general student body at an urban community college. This literature review will outline influences on community college persistence, the relationship between community colleges and TANF recipients, and review community college TANF recipient’s persistence. The chapter will end with a summary and synthesis.

Influences on Community College Persistence

Persistence, as previously described, is identified by a student’s continued enrollment in the institution, progression (i.e., successful accrual of credit hours), and completion of a degree or certificate at an institution (Crawford, 1999; Ganem & Manasse, 2011; Wild & Ebbers, 2002). As noted, community colleges provide higher education access to and promote mobility of students who would otherwise have ended their education at high school or even before (Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1995). In fact, for many people seeking to enroll in college the choice is between the community college and nothing at all (Scheuetz 2008). Scheuettz’s study in “A Theory-Driven Model of Community College Student Engagement” begins by outlining the realities of student aspirations and intentions upon entering college and the fact that many leave college within the first term. The findings of her study suggest that
community college engagement and related outcomes can be fostered by turning campus policies, practices, and climates to promote a student’s senses of belonging, competence, and autonomy. Knowing students well by understanding their needs and goals provides an important basis in designing, defining and aligning campus services to meet student needs at the community college (King & Fox 2007).

Johnson and Rochkind’s (2009) study “With Their Whole Lives Ahead of Them” sought to address both the myths and realities of why so many students fail to finish college. The first myth identified by Johnson and Rochkind holds that student go to college full-time. If they leave without a degree, it is because they’re bored with their classes and don’t want to work hard. The researchers found that most students leave college because they are working to support themselves and going to school at the same time. At some point the stress of work and study just becomes too difficult.

The second myth suggests that most college students are supported by their parents and take advantage of a multitude of available loans, scholarships and savings plans. In reality, young people who fail to finish college are often going it alone financially. They are essentially putting themselves through school.

The third myth holds that most students go through a meticulous process of choosing their college from an array of alternatives. The reality is among student who do not graduate, the college selection process is far more limited and often seems happenstance and uninformed. The fourth myth suggests students who do not graduate understand fully the value of a college degree and the consequences and trade-offs of leaving school without one. In reality students who leave college realize that a diploma is
an asset, but they may not fully recognize the impact dropping out of school will have on their future.

Moreover, there are many combinations of theories, perspectives, or models that seek to explain why students facing financial challenges may or may not remain in college, and the overall effect that this has on student success. However, “no one theoretical perspective is comprehensive enough to account for all factors that influence student success in college” (Kuh et al., 2006, p. 16). Nevertheless, these theories and perspectives help provide a framework through which to examine factors that influence retention and departure and help guide research and practice.

In a report commissioned by the National Symposium on Postsecondary Student Success, authors Kuh et al. (2006) discussed John Bean and Shevawn Bogdan Eaton’s use of attitude-behavior theory to illustrate the “importance of student characteristics to success in college” (p. 13). Attitude-behavior theory is grounded in a psychological model of student retention ("College Student Retention," n.d.). Bean and Eaton (2000) assert in their work, “A Psychological Model of College Student Retention,” that personality traits, which include self-efficacy, help students to persevere in school when they are faced with academic and social challenges (as cited in Kuh et al., 2006). The theorists also maintain that students who possess an internal locus of control “believe they can work their way through situations, while those who are externally controlled may conclude that fate has determined their course, especially when facing trying times; as a consequence they may give up and leave college prematurely” (Kuh et al., 2006, p. 13). Bean and Eaton’s application of attitude-behavior theory or a psychological model to student retention also considers “environmental variables (or factors outside of the
college that might affect retention) and a student's intentions, a factor found to be the best predictor of student retention ("College Student Retention," n.d.). In applying attitude-behavior theory to community college students for whom financial challenges may affect their ability to persist or complete, it is possible that these students may need to develop their sense of self-efficacy. Students who lack knowledge about financial resources outside of financial aid should seek out institutional resources, personnel, or offices that may be in a position help them remain in school. Having an external locus of control is detrimental to any student facing financial challenges because it inhibits individual initiatives to find ways of solving the problem. In addition, the desire to persevere in school has to be strong and students have to be proactive in finding a way to accomplish their academic or occupational goals without abandoning their plans when encountering difficult circumstances.

Kuh et al. (2006) also discuss organizational perspectives “that emphasize the institutional structures and processes that are thought to affect student performance” (p. 13). They cite Bean’s (1983) student attrition model that “posits that beliefs are affected by experiences with the institution, which then evolve into attitudes about the institution, which ultimately determine a student’s sense of belonging or ‘fit’ with the institution” (Kuh et al., 2006, p. 13). The authors further elucidate Bean’s theory by stating: “Thus, students’ perceptions of the fairness of institutional policies and the responsiveness of faculty and staff presumably affect decisions to persist or leave the institution” (Kuh et al., 2006, p. 13). Perhaps it can be concluded that if institutions have fair policies, robust support services, and helpful faculty and staff in place, they send students a message that they fit or belong. If students observe that their school is genuinely concerned about them
and their ability to do well academically, socially, and financially, students may not leave school. If anything, students may find ways to remain in school despite the challenges they are facing.

Moreover, Kuh et al. (2006) cite the work of Braxton; Goldin, Katz, and Kuziemko; and Becker to elucidate economic perspectives on retention (p. 15). Kuh et al. state with relation to the economic perspective posited by Braxton that “if a student perceives the cost of staying in school or becoming involved in a certain activity—such as orientation, a first-year seminar, internship, or study abroad—outweighs the return on investment, they will forgo the opportunity and leave college prematurely” (p. 15). The costs mentioned are thought to be tuition and other associated fees and lost income. One of the benefits of remaining in college would be future, not immediate, earnings, and “other less tangible outcomes such as obtaining additional knowledge and skills and enjoying a higher overall quality of life” (Kuh et al., 2006, p. 16). This assertion correlates to Goldin, Katz, and Kuziemko’s economic perspective with regard to student departure. Becker’s perspective is consistent with a human capital model and in alignment with this is the concept that colleges can create incentives for students to remain in school by making them aware that their knowledge, and critical thinking skills, and “sensibilities and dispositions that support lifelong learning” (Kuh et al., 2006, p. 16) will “increase their chances to obtain a desirable job and live a satisfying life after college” (Kuh et al., 2006, p. 16).

In “Why Financial Aid Matters (or Does Not) for College Success: Toward a New Interdisciplinary Perspective,” Goldrick-Rab, Harris, and Trostel (2009) also discussed human capital theory and the role financial aid plays in college success. The researchers
state that although the federal government invests nearly $100 billion (this is the figure
the researchers cite in their work, which was published in 2009) annually in financial aid,
the value of the spending should be questioned since a significant number of students do
not complete college (Goldrick-Rab, Harris, & Trostel, 2009, p. 1). Goldrick-Rab et al.
further assert that because completion rates for college are low, many students are left
behind (namely low income individuals)—even after aid is extended. The researchers
question if the amount of aid being distributed to low income students is effective or if
there are other mitigating factors at play that could possibly explain low college
attainment rates among this population (Goldrick-Rab et al., 2009, p. 1). The connection
between money, which includes financial aid, and college success, according to the
researchers, has historically been “relatively muted” (p. 1) in higher education research.
An example of this is Tinto’s Interactionalist Theory, which “initially omitted finances
altogether as a factor influencing whether students finished college since the initial
decision to attend was made and therefore it appeared that financial need was met”
(Goldrick-Rab et al., 2009, p. 1). Tinto initially believed that if students claimed they
were leaving college for financial reasons, they were doing so to mask other reasons for
why they were actually leaving (St. John, Cabrera, Nora, & Asker, 2000). In 1993, Tinto
modified the theory and included finances in the initial college adjustment phase to the
chagrin of some of his adherents who continued to omit finances as a factor influencing
completion (St. John et al., 2000, p. 32). Goldrick-Rab et al. also examined the work of
other researchers on the “money” issue and made the point that some researchers such as
Clifford Adelman believe that money is ‘the easy part’ (as cited in Goldrick-Rab et al.,
2009, p. 2). According to Adelman, inadequate academic preparation is one of the chief
reasons students do not complete college (Goldrick-Rab et al., 2009). However, Goldrick et al. argue that academic preparation is not the sole benchmark upon which college success should be assessed, nor should this “predictor” (Goldrick-Rab, et al., 2009, p. 2) be used to develop or influence financial aid policy.

The researchers added that although correlations between financial aid and attainment are not given in-depth consideration in some research studies, “a review of the existing evidence reveals that the most rigorous studies indicate a significant positive impact of aid” (Goldrick-Rab et al., 2009, pp. 2-3). Hence, this means that receipt of financial aid typically has a positive effect on retention and completion (Goldrick-Rab et al., 2009, pp. 2-3). Goldrick-Rab et al. (2009) examine the “standard economic model” (p. 3), human capital and net price theories, varying iterations of the models, and other theories to evaluate the impact that financial aid has on retention and completion.

The researchers postulate that there are limitations to human capital theory concerning the costs associated with college. The human capital model assumes that students have access to various resources to finance their education, but this is not always the case. Low income students are typically not in a position to “borrow at the same rate that wealthy students can invest” (Goldrick-Rab et al., 2009, p. 5). Thus, the type of aid a student receives makes a difference. Grants, quite obviously, are a better alternative to loans. In addition, the model assumes that all students are prepared to do college-level work. This is not always the case. Poor academic preparation can take a toll on students in the form of them having to work more diligently than their more well-prepared classmates to achieve good grades and digest lessons imparted (Goldrick-Rab et al., 2009, p. 6). This also means it could take some students a considerable amount of time to
complete college, which may mean more of a financial investment in their education and more of an investment of time—time that some students do not have. However, though Goldrick-Rab et al. (2009) cite limitations to human capital theory, they maintain that it is applicable in its relation to the concept that receipt of financial aid can increase the likelihood of students completing college (p. 6).

The researchers also examine net price theory, advanced by Leslie and Brinkman in 1987, to evaluate the impact that financial aid has on retention and completion. Goldrick-Rab et al. (2009) posit that there are also limitations to this theory in that it exclusively focuses on direct costs (tuition, books, etc.) associated with college while neglecting other major costs to students. The time students spend studying rather than engaging in paid work or the fact that some students may have to limit the amount of time they work is a significant opportunity cost. These opportunity costs, particularly in the case of students who may have unmet personal financial need, also influence students’ decisions to complete college (Goldrick-Rab et al., 2009, p. 6). Essentially, an investment in college equates to an investment of time and money (Goldrick-Rab et al., 2009, p. 6). For many students the idea of investing in a college education as opposed to earning money in the short term to meet immediate needs may not always seem fiscally sound. However, Goldrick-Rab et al. conclude that net price theory also shows support for the likelihood of financial aid positively influencing retention and completion (Goldrick-Rab et al., 2009, p. 6).

Other models that assess the effect financial aid has on retention and completion are assessed by the researchers. These models are financial nexus theory developed by Paulsen and St. John, and the ability to pay model, advanced by Cabrera, Stampen, &
Hansen (Goldrick-Rab et al., 2009, p. 8). Paulsen and St. John posit that the purpose of financial nexus theory is to “provide ‘insights into the ways students respond to student aid in different settings’” (as cited in Goldrick-Rab et al., 2009, p. 8). Students’ perceptions of college costs are emphasized in this theory. The ability to pay model posits that students “with a greater ability to pay for college become more integrated into college life, and are thus more likely to succeed” (Goldrick-Rab et al., 2009, p. 8). Both theories critically examine the effect financial aid has on retention and completion, but they too have limitations.

Overall, Goldrick-Rab et al. (2009) appear to take issue with models or theories that debate the importance of aid to college completion, but the researchers also contend that direct costs associated with attending college (tuition, books, etc.) only comprise a fraction of the challenges that students face in regard to college completion (p. 7). In the researchers’ estimation, financial aid may help to “offset other costs and make college a more desirable proposition, even for students who can minimally afford it” (Goldrick-Rab, 2009, p. 7).

In illustrating how financial aid can have a positive effect on retention and completion for low income students, Goldrick-Rab et al. cite a report authored by Brock and Richburg-Hayes (Goldrick-Rab et al., 2009). In their report prepared for Manpower Research Demonstration Center (MDRC), Brock and Richburg-Hayes (2006) discuss the impact grants MDRC distributed to mothers receiving welfare had on their ability to persist in college. MDRC Opening Doors grants in the amount of $2,000 were extended to 264 Black mothers on welfare attending two community colleges in New Orleans (Goldrick-Rab et al., 2009). Grant recipients had to be enrolled half time and maintain a
“C” average or better (Brock & Richburg-Hayes, 2006; Scrivener & Coghlan, 2011). Within seven semesters mothers who received the grant had higher rates of retention and some also had higher credit attainment rates (Goldrick-Rab et al., 2009, p. 12). This outcome demonstrates that aid provided an incentive and the means for the mothers to continue their studies.

As acknowledged in the Goldrick-Rab et al. study, unmet need or inadequate financial support, in particular, can complicate efforts put in place by colleges to retain students. Moreover, money is not “the easy part,” especially when it comes to retaining non-traditional students. Financial interventions have to be staged to provide these students with the support they need to complete college and improve their earning capacity and future employment prospects. Though it has its limitations, human capital theory provides a context for understanding the connection between finances and college success, and the costs students must consider when assessing their investment in their education.

In short, there are many influences that impact community college persistence. Getting students to graduate is the challenge, particularly TANF recipients for whom college could be the vehicle that changes their lives. Therefore, it is important to understand the relationship between community colleges and TANF recipients.

**Community Colleges and TANF Recipients**

Community colleges have helped TANF recipients acquire skills and gain entry or advance in the labor force for many years by delivering education, training, and other services to the welfare population (Brock et al., 2001, p. 5). In fact, community colleges have a long history of providing the greatest access to post secondary education to
disadvantages groups in America (Matus-Grossman & Gooden, 2001, p. 2). Community colleges serve traditional and non-traditional students from various socioeconomic, racial, and ethnic backgrounds (Brock et al., 2001, p. 19); they offer a variety of “academic, remedial, vocational, and continuing education courses, as well as some campus-based support services” (Brock et al., 2001, p. 19); and community colleges can help students to obtain “marketable credentials” (Brock et al., 2001, p. 19).

The findings of the few studies that have analyzed whether there is a benefit to having public assistance (e.g. TANF) recipients pursue education given the work requirements of welfare reform are instructive. In May 2004, the Center for Law and Social Policy (CLASP) published a study that assessed the earnings and employment rates of California welfare recipients who left the California Community College system (CCC) in 1999-2000. CalWorks, the TANF program in California, allowed participants to attend a California community college for a specified period of time (18 to 24 months) to meet work requirements (Mathur, Reichle, Strawn, & Wiseley, 2004, p. 7). The CLASP study compared the employment and earnings of female CalWorks students to those of other women who exited the CCC system in 1999-2000, and it also compared all CalWorks students to the general welfare population in California (Mathur et al., 2004, p. 7). Center for Law and Social Policy found that the CalWorks students were more likely to work throughout the year after attending community college; for those students who did not transfer to a four-year college, the more education the student obtained, the more likely the student increased (her) earnings; students who completed a vocational certificate or associates degree in nursing, dental, or business fields tended to have higher earnings and employment rates than those who did not complete similar programs; the
longer the program or course of study, the better the payoff for students; before and
during school CalWorks students earned less than other female students, but after leaving
college the earnings gap diminished; and while in school, earnings for employed students
were higher than they were for the general welfare population employed during the same
period of time (Mathur et al., 2004, pp. 7-8).

In the CalWorks program, students had to participate in welfare-to-work activities
for at least 32 hours a week, and classroom and laboratory and internship training
counted toward this requirement (Mathur et al., 2004, p. 9). Work study, employment,
on-the-job training, and community service also counted as allowable activities (Mathur
et al., 2004, p. 9). Study time did not necessarily count as an allowable activity in some
California counties, therefore students still had to complete additional welfare-to-work
hours in addition to time spent in the classroom (Mathur et al., 2004, p. 9). For this study,
CLASP also interviewed CalWorks students and in its report the organization stated the
following: “Interviews with CalWorks students indicate that the targeted support and
employment services offered by the California community colleges (such as on-campus
child care, work-study, and academic advising) were often the key factor in their
academic success” (Mathur et al., 2004, p. 8). Based on the CalWorks study, it appears
that a college education and training are important in improving employment
opportunities and increasing the earnings capacity of students (Mathur et al., 2004, p. 8).
Coupled with the support services that the California community colleges provided, the
students met with not only academic success, but also a measure of financial success.

In a report authored by Mayfield in 2001 on behalf of the Washington State
Institute for Public Policy, Mayfield reports that the Washington State Legislature
directed the Institute to recommend how Washington could possibly add a more targeted, stand-alone, cost-neutral component to its TANF WorkFirst program (p. 1). In the report, Mayfield examined other state programs and recommended how Washington could consider adding a targeted program that would allow TANF student recipients to attend college and have it count as a stand-alone activity. Mayfield reported that 37 states allowed students to pursue higher education to some extent as an allowable activity; 16 states allowed higher education as a stand-alone activity for a year or more; and nine states allowed clients to pursue postsecondary education in the form of a year or less of vocational education (Mayfield, 2001, p. 15). Illinois, Kentucky, Maine, and Wyoming were closely examined in this study because they were among 11 states that allowed clients to pursue a full-time higher education as a stand-alone activity for more than a year, and there was more information available about these states’ programs (Mayfield, 2001, p. 15). Mayfield found states that allowed clients to pursue a college degree or credential had expectations or even requirements that students had to meet for one of two reasons, either to limit the number of clients who desired to participate in stand-alone programs or to identify clients who were more likely to succeed in college (Mayfield, 2001, p. 17). To meet state higher education requirements, some clients had to: have a self-supporting job; be currently enrolled in a program and be in good standing; demonstrate that the program leads to some form of employment and a marketable degree; maintain a good GPA; be enrolled as a full-time student; and meet strict work requirements to participate in four-year programs (Mayfield, 2001, p. 17). This is only a partial listing of requirements to which students had to adhere.
In summarizing the findings of the WorkFirst study, Mayfield cited several important details in relation to some states allowing TANF clients to pursue higher education as a stand-alone activity. These stated:

- Fund clients pursuing higher education with MOE [Maintenance of Effort] funds;
- Take advantage of caseload reduction bonuses to create more flexible programs that can still be funded by federal TANF dollars;
- Use existing waivers to define work activities more broadly so that allowable activities may include higher education;
- Structure their programs in ways that limit the number of clients eligible to participate in higher education in lieu of payment; and
- Limit the number of clients pursuing higher education as a stand-alone activity or in combination with other countable activities. (Mayfield, 2001, p. 23)

In the report Mayfield added that Washington State did add a stand-alone program to the higher education component of the WorkFirst program for specified fields of study (technology, healthcare, or other high-wage, high-demand occupations), also referred to as the High-Wage/High-Demand Education (HWHD) program. He also stated that the review of existing research on the effectiveness of higher education in the Washington WorkFirst study illustrated that there is strong evidence “linking higher education with improved earnings” and that this does not necessarily apply to welfare recipients but to the population in general (Mayfield, 2001, p. 25). He further asserted that research shows that “higher earning power is associated with reduced poverty and welfare dependency”
(Mayfield, 2001, p. 25). Thus, students who receive TANF assistance and attend college are in a position to improve their academic and financial prospects if they are able to pursue a college education or credential.

To further examine the effect and success of welfare-to-work programs and strategies, in 2001, on behalf of MDRC, Brock, Matus-Grossman, and Hamilton reported on National Evaluation of Welfare-to-Work Strategies (NEWWS) findings. In 1989, the NEWWS (a federally initiated study) Evaluation was launched to assess whether an immediate investment in basic education and skill development would produce better results than a labor force attachment (LFA), or job search approach (Brock et al., 2001, p. 6). At that time, policymakers and proponents of human capital development (HCD) programs, advocated for and “focused on the development of basic skills through education” (Brock et al., 2001, p. 6) which represented an alternative approach to the job-search process. HCD program proponents believed this approach to welfare-to-work “would help people get better and more stable jobs and reduce returns to welfare rolls” (Brock et al., 2001, p. 6). The debate between LFA or HCD proponents in the 1980s, which pre-dated (PROWRA) legislation, was very prominent because some states decided to get welfare recipients to work by running mandatory job search programs where recipients were taught how to look for work and were also given job leads (Brock et al., 2001, p. 6). Research conducted on the job search programs revealed that welfare recipients were able to enter the work force more rapidly, but they did not obtain long lasting or high paying jobs. In fact, most of the job search programs did not succeed in helping welfare recipients who were extremely disadvantaged (Brock et al., 2001, p. 6).
To settle the debate concerning which approach to welfare-to-work was better, LFA or HCD, NEWWS conducted an evaluation of the implementation, effects, and costs of welfare-to-work programs in Atlanta, Georgia; Grand Rapids, Michigan; Riverside, California; Columbus, Ohio; Detroit, Michigan; Oklahoma City, Oklahoma; and Portland, Oregon (Brock et al., 2001, p. 6). Programs in these states were evaluated because employment or education programs were in operation in these locations for several years or more (Brock et al., 2001, p. 7). Atlanta, Grand Rapids, and Riverside agreed to run both LFA and HCD programs concurrently. Columbus, Detroit, and Oklahoma City offered only education-based (HCD-type) programs, and Portland adopted a hybrid approach (Brock et al., 2001, p. 7). The Portland model was unique in that it combined elements from both programs and welfare departments contracted the services of community colleges to provide welfare recipients with major services (Brock et al., 2001, p. 9). The Portland program “outperformed the others by far in terms of employment earnings and gains and saving government money” (Brock et al., 2001, p. 12). This suggested that a blended education and employment or training model could be the most effective approach to welfare-to-work programs (Brock et al., 2001, p. 12). Welfare recipients were able to increase their earnings and the government was able to save more in terms of expenditures on welfare.

TANF recipients can benefit greatly from a community college education. Understanding the retention strategies that foster community college TANF recipient persistence is important. This is particularly true given the history of TANF recipients’ community colleges.
Community College TANF Recipient Persistence

Researchers have looked for a comprehensive way to address persistence of community college students (Bers & Smith, 1991; Fenster, 2003). There has been a lack of studies in the literature however that addresses the persistence of community college students who are TANF recipients, which is the purpose of this study. In her research on the achievement of community college TANF recipients Judy Fenster provided some insight into the study of this population. Fenster’s theoretical rational is based on the retention work of Patricia Beatty-Guenter. Beatty-Guenter developed a typology of retention strategies to clarify what various retention strategies have in common and how this understanding can be applied in practice and research which builds on Tinto’s (1975) research on social integration and Astin’s (1984) research on student involvement (Beatty-Guenter, 1994, 113). Under Tinto’s student integration theory a student’s social and academic integration into a college community influences their commitment to the institution and to academic goals. Commitment influences the student’s decision to remain enrolled and progress towards graduation or not. Moreover, Astin’s student involvement theory posits students learn more the more they are involved in both the academic and social aspects of the collegiate experience. He notes that an involved student is one who devotes considerable energy to academics, spends much time on campus, participates actively in student organizations and activities, and interacts often with faculty (Astin, 1984).

Many of the common retention strategies utilize the work of Tinto and Astin as their theoretical base (Tinto, 2006). Therefore, Beatty-Guenter’s contribution to college student retention, synthesizing traditional drop-out prevention strategies in light of the
research into four broad categories or retention related activities, provides educational institutions the ability to develop a successful comprehensive retention program aimed at supporting persistence. As noted previously, sorting, supporting, connecting and transforming are the retention strategy categories established from her work.

Beatty-Guenter categorizes retention strategies that attempt to divide the student body into meaningful subsets as sorting (Beatty-Guenter, 1994, p.114). Describing sorting as a medical model, Beatty-Guenter identifies the four techniques used in sorting strategies: (a) strategies of “best fit” admissions, (b) entry assessment and placement, (c) program and course planning, and (d) student monitoring through early warning and academic-alert processes. Sorting is an attempt to target students, group them, and place them in pre-designed categories within the institutional structure so they can be matched with college programs most suited to their academic and vocational goals, and with courses according to their current academic abilities or programs according to their “at-risk” status (Beatty-Guenter, 1994, p.114). As such, sorting is a reactive strategy intended, as Beatty-Guenter notes “to address the issues faced by the college by virtue of the characteristics and backgrounds of their students” (Beatty-Guenter, 1994, p.114).

Supporting strategies, like sorting strategies, are reactive in nature. Supporting strategies however target the institution to create and provide programs of assistance to students. Supporting strategies, in an effort to help students deal with issues in their lives outside of the higher education institution, seek to reduce the barriers to completion. The most common strategies include institutional provision of on-campus child care options, financial aid, health and wellness programs, and security and transportation support (Beatty-Guenter, 1994, p.117). The college, through these efforts, becomes a part of the
solution to many of the student’s issues instead of an additional problem (Beatty-Guenter, 1994, p.118).

Unlike sorting and supporting strategies which are reactive in nature, connecting strategies are interactive. These strategies foster bonding between a student and the institution. Student activities, student groups, peer programs, orientation, faculty student events, the attendance policy, faculty advisers and mentors, and work study programs are all meant to create attachments between the student and the institution.

While connecting strategies are interactive, transforming strategies are proactive. Some strategies target the student, some the institution, but all are intended to “effect changes in both students and the college in order to anticipate or eliminate causes of attrition” (Beatty-Guenter, 1994, p.114). By stimulating the student to improve attainment levels and skills and by enhancing all aspects of the teaching and learning and work environments, transformation can take place. Strategies aimed at transforming the student include learning assistance programs, remedial education programs, and career counseling programs. Strategies aimed at transforming the institution include, among others, curriculum change, building community, the teaching environment, policy changes, and instructor development programs. (Beatty-Guenter, 1994, p.114).

Table 2.1 lists the common retention strategies by category type. Beatty-Guenter offers practitioners the range of options. The strategies are to be integrated based on the retention objective.
Table 2.1

**Common Retention Strategies by Category Type**

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<th>Category</th>
<th>Strategies</th>
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<td>Sorting</td>
<td>“Best-Fit” admissions</td>
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<td>Entry assessment and placement</td>
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<td>Program/course planning</td>
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<td>Early warning/academic alert</td>
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<td>Supporting</td>
<td>Child care</td>
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<td>Financial aid</td>
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<td></td>
<td>Health and wellness programs</td>
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<td>Security and transportation</td>
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<td>Connecting</td>
<td>Student activities, student groups</td>
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<td>Peer programs</td>
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<td>Orientation</td>
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<td>Faculty advisors, mentors</td>
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<td>Transforming</td>
<td>Learning assistance, tutoring</td>
</tr>
<tr>
<td></td>
<td>Remedial education</td>
</tr>
<tr>
<td></td>
<td>Counseling about goals, careers</td>
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<tr>
<td></td>
<td>Curriculum change</td>
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<tr>
<td></td>
<td>Building community, teaching environment</td>
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<tr>
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<td>Policy changes</td>
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<td></td>
<td>Instructor development programs</td>
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</tbody>
</table>


Fenster (2003) conducted a study of undergraduate students (N = 106) enrolled in a pilot program for TANF recipients comparing their achievement with that of the general population students at an urban community college which uses all of the attribute of the Beatty-Guenter model. Achievement was measured by grades attained in a basic level introductory psychology course, rates of academic retention, and election to the Dean’s list over a period of four semesters. The overarching research question asked was
can a group of welfare recipients, given extra counseling, academic support, and financial support, succeed in basic college courses. In analyzing the data, Fenster used a $t$-test to compare the grade point averages of students in the psychology classes and Chi-square tests to examine rates of election to the Dean’s list and academic retention rates. The results of the study indicated that, on average, TANF students outperformed general population students in the psychology class. In addition, the TANF students were much more likely to be elected to the Dean’s list than were the general population students. Lastly, TANF students were no more likely than general population students to be academically dismissed from the college.

While the study is methodologically consistent with quantitative research data analysis techniques, there are limitations which warrant further study. One limitation of the study is that it was only over a two year period. As noted previously, the study period does not take into account the fact that community college students often take off semesters and re-enroll in later semesters because of changed circumstances in their lives (Ewell, 2010). Additionally, given that achievement was the focus of study, there was no analysis of whether the students continued their studies and graduated. This dissertation study relied upon the same theoretical rationale as Fenster (2003). The present study by contrast sought to address the Fenster limitations and add to literature on the persistence of community college students who are TANF recipients by extending the time of observation to six years and by studying the component parts of persistence: semester to semester retention, rate of credit accumulation and rate of graduation. As will be discussed more fully in Chapter 3 the researcher, building on Fenster, used a similar
methodological approach found in that study with respect to data analysis using both the t-test and Chi-Square tests.

**Summary and Conclusion**

If community college students do not have the appropriate support systems in place it is challenging for them to persist or complete college. The ability to accomplish both of these goals amounts to success in higher education. Not only is it important for all colleges to enroll students, but it is equally important that students complete degree programs or qualify for credentials. This contributes to students having better access to employment opportunities and higher earnings that will support them and their families. This is especially important for low-income students and students receiving TANF. The dissertation study, building on what scholarship exists, contributes to the knowledge of researchers studying in this area. This particularly true as the literature informs the research design methodology including details of the research context, participants and instruments to be used in the data collection which is outlined in Chapter 3.
Chapter 3: Research Design Methodology

Introduction

This third chapter of the dissertation explains in detail the research method used in the study. The purpose of the study, as previously noted, was to investigate the effects of a comprehensive drop-out prevention program on the persistence of TANF recipients seeking a community college degree. Specifically, the proposed study was designed to answer the following research questions:

1. Are there significant group differences in persistence (as measured by semester to semester retention) between community college TANF recipients who participated in a drop-out prevention program and matched non-participating general community college students enrolled at one community college?

2. Are there significant group differences in persistence (as measured by rate of credit accumulation per semester) between community college TANF recipients who participated in a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

3. Are there significant group differences in persistence (as measured by rate of graduation) between community college TANF recipients who participated in
a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

To answer the research questions the quantitative study used a quasi-experimental design. The particular quasi-experimental design selected was a constructed comparison group design. It was selected because it is particularly suited to situations where there is no possibility of either using random assignment to create the experimental groups and there is, likewise, no way of identifying a naturally occurring group that would serve as a suitable control for the experimental group. Constructed comparison group designs match a treatment and control group based on relevant factors, other than the treatment provided, that are thought to influence scores or measurements of the dependent variable. As Mancini, Huebner, and McCollum (2005) noted, “the matched constructed control group is commonly used in evaluation research and forms its control group by matching as closely as possible key characteristics of the program group” (p. 286).

In this study the purpose of using a constructed control group was to conduct a rigorous evaluation of an intervention strategy in the context of practice where it is not possible to create randomly constituted groups that either receive or do not receive the intervention. As a viable alternative, the control group was constructed by matching participants who received the “treatment” with a control group of students who were matched with the experimental group on a range of pre-treatment characteristics including academic achievement, race, age, and gender. An ethical advantage of this approach was that it did not, for purposes of experimentation, withhold support from an at-risk group, in this instance, community college enrolled TANF recipients. Needlessly
withholding treatment from disadvantaged and eligible people in order to conduct this study as an experiment using random assignment to the treatment and control groups would have raised serious ethical questions.

The remainder of this chapter discusses in greater detail the design methodology. In particular, the researcher outlines of the research context, identify the research participants and describe instruments used in the data collection as well as the procedures for data collection and analysis. The chapter concludes with a statement summarizing the essential elements of the chapter.

**Research Context**

As noted in Chapter 1, the study was conducted at LaGuardia Community College in Long Island City, New York. Part of the City University of New York (CUNY), LaGuardia Community College (hereafter referred to as LaGuardia) is a nationally recognized leader among community colleges for its success educating underserved students. For example, upon graduation, LaGuardia students’ lives are transformed as family income increases 17%, and students transfer to four-year colleges at three times the national average (www.laguardia.edu). LaGuardia serves predominantly minority, immigrant, and low-income college attendees. LaGuardia terms itself “The World’s Community College,” with students born in over 160 countries and speaking more than 110 native languages. LaGuardia’s diverse student population includes 35% Hispanic, 19% Asian, 15% Black, 12% White, and 19% Other or Unknown. Over two-thirds of the students were born outside the U. S.; indeed, half of the incoming students have lived in the United States for less than five years (www.lagcc.cuny.edu/Facts/2011factbook.pdf).
Sixty percent are first-generation college students; two-thirds of entering students report a family income of $25,000 or less. The College does an analysis of the unmet financial need of its students. The analysis calculates the annual student costs for tuition and fees, room and board, books and supplies, personal expenses, and transportation for both students living at home and living independently, and compares the average estimated financial need to the average financial aid award. Note that room and board estimates the cost of living in the community as LaGuardia is a commuter campus without dormitories. For students living at home, the average estimated financial need is $8,872, the average financial award is $3,738, and thus the average financial gap (or unmet need) is $5,134. For students living independently – a substantial number given that 45% of LaGuardia students are 23 years of age or older – the average estimated financial need is $13,639, the average financial award is $3,393, and thus the average financial gap (or unmet need) is $10,245 (www.lagcc.cuny.edu/Facts/2011factbook.pdf). Based on its innovative programs to serve TANF recipients, LaGuardia has been selected to test new strategies to help students’ complete college by integrating public benefit screening and application assistance into the college’s existing services and supports. The College will work with the Center for Law and Social Policy (CLASP) and the American Association of Community Colleges (AACC) to implement one of several models being tested in the Benefits Access for College Completion (BACC) initiative. The three-year $4.84 million initiative will receive funding from the Ford Foundation, Kresge Foundation, Lumina Foundation, and the Open Society Foundations. The Annie E. Casey Foundation is also contributing to the initiative.
BACC will help low-income students connect to coordinated income supports including child care subsidies and food assistance. The initiative will be evaluated to see if low-income students who receive coordinated income supports stay in school longer and complete their studies more quickly. Public supports and refundable tax credits can help low-income students bridge the gap between financial aid and the resources needed to attend college. The initiative’s aim is to help students complete their studies swiftly and successfully and move into jobs earning family-sustaining wages so they will be less likely to need such supports in the future. Given LaGuardia’s long-standing work with TANF students and its commitment to improving outcomes, it was selected by the researcher as the case study institution.

**Research Participants**

Methodologically speaking, once a research context has been identified then the population that will be studied must be defined. According to Frankfort-Nachmias and Nachmias (1996) the study population, which represents the entire set of relevant units of analysis or data, is defined in terms of (1) content, (2) extent, and (3) time (Frankfort-Nachmias & Nachmias, 1996). For the purpose of this TANF student persistence study, the study population included all 14,205 degree seeking students enrolled at LaGuardia Community College in the Fall 2006 semester. By looking at a population over a six year period, the researcher attempted to take into account the fact that community college students, as noted previously, often enroll for a semester, take off the succeeding semester and re-enroll in a later semester or change their academic programs multiple times (Ewell, 2010). Many, therefore, do not proceed in a linear fashion from enrollment in a Fall semester to graduation or completion of their program two years later.
A master list of the students entering in the Fall 2006 semester was generated from institutional data obtained from the database of the Office of Institutional Research and Assessment (OIRA) at LaGuardia. The list was matched against the master list of degree seeking TANF recipients enrolled in the Fall 2006 semester which was maintained by LaGuardia’s College Opportunities to Prepare for Employment Program (COPE) office, the college’s signature program for TANF recipients. The purpose was to confirm accuracy of the College master list as it relates to TANF recipients.

The TANF recipients were extracted from the College master list and served as the treatment group (COPE). There were 170 students enrolled in the COPE program in the Fall 2006 semester. Then, from the College list the researcher created a constructed comparison group. To be effective, the comparison group needed to be very closely matched in academic achievement levels, demographics, and other characteristics with the treatment group.

A sample of the general population that best resembled the observable characteristics of the treatment group was used as the control or comparison group (Control Group). The control sample selection process was accomplished using a selection procedure known as propensity score matching (PSM). Propensity score matching is a methodological approach that attempts to match students from two groups based on observable characteristics that are similar in both groups. Reynolds and DesJardins (2009), in describing matching generally and propensity score matching, specifically noted:

The intuition behind matching is to find individuals who do not receive the “treatment” who have observable pretreatment characteristics that are similar to the
individuals’ receiving the treatment. One particular matching procedure controls for pretreatment differences between the treated and the untreated by balancing each group’s set of observable characteristics on a single “propensity score.” This score is used to match treated and untreated individuals, thereby balancing the two samples on observable characteristic and hopefully allowing more rigorous inferences than are possible when using other statistical methods (Reynolds & DesJardins, 2009, p.49).

According to the U.S. Department of Education, when this method is used in education, the two groups should be matched closely in characteristics including: measures of academic achievement, demographic characteristics, time period in which the two groups are studied and methods used to collect outcome data. Moreover, the comparison group should not be comprised of individuals who had the option to participate in the intervention but declined (U.S. Department of Education, 2003). The researcher chose these eight characteristics to give the comparison group as great a similarity to the treatment group as possible in terms of propensity toward retention and graduation. The following eight characteristics had between two and four categories:

1. Cumulative GPA through spring 2005 (4 groups: (1) null or zero, (2) >0 and less than 2.00, (3) 2.00 to less than 3.00, and (4) 3.00 and above)
2. Credits earned through spring 2005 (4 groups: (1) null or zero, (2) >0 and less than 15, (3) >14.5 and less than 30, (4) 30 or more)
3. Race/Ethnicity (Black/Hispanic v. all others)
4. Age (younger than 24 v. 24 and older)
5. Gender
6. International (F-1 visa, no F-1 visa)
7. Financial aid recipient Fall 2006 (yes, no)

8. Developmental status as of end of spring 2005, (all developmental requirements finished v. developmental requirements remaining)

Any particular combination of the eight characteristics designated a cell. Each student was coded with an 8-digit cell code, each digit representing a dimension, 8 digit cell code (leading zeros are blank) (e.g., 11111111), left to right:

1. ten millions place: GPA Bracket (coded 0-3)
2. millions place: Credits Earned Bracket: (0-3)
3. 100 thousands place: Under-represented minority (1=yes, 0=no)
4. ten thousands place: Age (1=24 and older, 0=less than 24)
5. thousands place: Gender (1=female, 0=male)
6. 100s place: International (1=F-1 visa, 0=no F-1 visa)
7. tens place: Financial Aid (1=awarded fall 06 or Sp 07, 0=no award)
8. one’s place: Developmental (2=missing data, 1=completed developmental work, 0=developmental work still required)

Before the matching took place, and because the goal was to balance the similarities of those that were assigned to a comparison group and the treatment group, a standard difference score was calculated. The matching procedure was accomplished by calculating a predicted probability score for each subject, regardless of group participation, which indicated how likely the subject was to be in the treatment group based on demographic and previous achievement variables included in the model. This predicted probability, or propensity, value was calculated for both groups of students simultaneously and subjects with the most similar probability scores were matched and
their outcomes compared. Eighty-five different cell codes were found among the 170 COPE students. The 14,035 students in the non-COPE (general population students) group fell into 671 different cell code groups. Selection of the control group was made from among the 2,869 students in the non-COPE group who fell into one of the 85 cell code groups found among the COPE students. (For example, no international students would fall into one of the 85 COPE student cell groups). Selection of a student into a control group was calculated as: The probability of selecting a student from cell code XXXXXXXX from the non-COPE group to be in a control group = the number of COPE students in the XXXXXXXX cell code divided by the number of non-COPE students in the XXXXXXXX cell code times a control group multiplier. Thus, in cell code group 11000011 (GPA above zero and below 2.00, credits earned by Fall 2006 above 0 less than 15, non-URM, etc.) there were one COPE student and eight non-COPE students. If the control group multiplier is one, then the probability of picking for the control group any one non-COPE student in this cell group is 1/8.

The actual multiplier used was 4.0. This gave the control group a size that minimized the error in distribution of students between the COPE group and the control groups. Each control group was picked using Excel’s random number generator. The computer selected a quasi-random number between 0 and 1. If that number was below the probability computed by the equation above, that student was picked for a control group. If there were no COPE students in a cell code, then the probability of picking a student from the non-COPE group from that cell code was zero. The random selection was run fifty times to allow the calculation of sample selection error statistics. Duplicates within cell codes were excluded. Each student could only be represented in a cell one time. All
cell codes found in the COPE group had at least 3 non-COPE students with the same cell code. The ratios of non-COPE to COPE students in each cell code ranged from 2.7 to 349.0. This allowed the researcher to increase the size of the control groups, giving the researcher lower errors. Errors were calculated as the sum over each COPE cell code of the square of the difference between the proportion of COPE students in that cell and the proportion of randomly chosen Control group students in that cell. For the typical control group, this sum of the errors was 0.000714. Among the 85 cells in the COPE group, the average of absolute difference between the proportion of the COPE group and the proportion of the Control group was 0.00221. That is, the average proportion of students in any of the 85 COPE cell codes was 1.1765%. The average proportion of students in any of these 85 cell codes in the typical control group was the same. Nevertheless, the average absolute differences in proportions among the 85 cell codes between the COPE group and the Control Group was 0.221% in each cell.

Using control group multipliers above and below 4 increased the size of the error. Higher control group sizes (higher multipliers) increased the probability that small cells would run out of unduplicated students. Lower control group sizes increased the impact of small differences in population numbers between the COPE cells and Control cells. While allowing duplication of students within cells would reduce the cell size difference error, it would also increase the possibility of exaggerating individual characteristic differences is opened. To preserve the face validity of using only real students, duplication of students was not allowed.

Student data were derived from the LaGuardia Community College Institutional Research and Assessment data warehouse. Access software was used to pull the data and
set up the cell and outcome coding. 41 Access queries were written to assemble the data. Two files were then downloaded into Excel. Figure 3.1 illustrates the composition of matched experimental and control groups of Fall 2006 degree students.

![Figure 3.1](image_url)

**Figure 3.1.** Matched experimental and control groups of Fall 2006 degree students.

**Study Intervention and Data Collection**

The interaction between independent variables and dependent variables forms the basis of analysis at the heart of a research problem. The dependent variable is the variable the researcher is trying to explain. The independent variable is the variable that may cause a change in the dependent variable. Frankfort-Nachmias and Nachmias (1996) also noted the importance of understanding whether the variables are continuous or discrete. A continuous variable is a variable that, at least theoretically, can have a value anywhere along the range from minimum to maximum. A continuous variable, for example, could potentially have a value of 42, 42.1, or 42.001. A discrete variable by contrast is a variable that can have only certain values between its minimum and maximum range. A
discrete variable might, for example, have a potential value of 42 and 43 but not 42.1 or 42.001. Understanding these attributes of variables is important because they affect measurement procedures, data analysis and methods of statistical inference and logical generalization (Frankfort-Nachmias & Nachmias, 1996).

The independent variable in this study was participation in LaGuardia Community College’s College Opportunities for Employment (COPE) Program, a comprehensive drop-out prevention program from TANF recipients. Funded by and operated in collaboration with the Family Independence Administration of the City of New York Human Resource Administration (HRA), services are available to anyone who is a current or former CUNY student or applicant, and who is receiving public assistance cash benefits (i.e. TANF) (LaGuardia Community College, COPE, n.d.). Students cannot apply to be a part of the program once enrolled at the college. They must be allocated to the college through HRA’s case management process. The students assigned to the College by HRA have mandatory participation requirements. COPE students must be engaged in an allowable “work” activity for 35 hours per week, as their college courses, work-study, and internship hours count toward this TANF requirement. COPE also offers a Work Experience Program (WEP), which allows “full-time TANF students to meet their workfare obligation in specially developed WEP assignments that do not interfere with college attendance” (LaGuardia Community College, COPE, n.d.). In the WEP program, students take a total of 20 hours of classes and complete the balance of the TANF/Safety Net 35-hour requirement by completing a WEP assignment.

As the Beatty-Guenter Retention Strategy suggested, institutions must use the right mix of strategies to address their population’s needs. LaGuardia sorts students by
dividing them into subsets. TANF recipients, a subset of the general college population, participate in the institution’s COPE Program as noted. The COPE program has strategies that support, connect, and help to transform both the student and the institution. COPE helps to ease students’ problems by providing personal counseling and assistance in many areas including accessing appropriate child care and meeting transportation needs. Moreover, to help students connect with the institution, COPE fosters bonding between students, and between the student and the college. This happens through orientation, peer tutoring and academic supports like assistance with registration, career planning and course scheduling. Additionally, COPE supports student transformation from dependency to independence and confidence. The students’ ability to articulate and advocate for themselves in various settings and to interview for and obtain employment supports their transformation. Through COPE the institution too has been transformed as it has committed personnel, financial support and physical space to meet the needs of this subgroup. All of these efforts are aimed at helping public assistance recipients stay in school and graduate. It is important to note, participation in extra counseling regarding academic and financial support are also mandatory to ensure, even in the case of the student who stops out for a period of time, that the student has the every opportunity to pursue his or her educational pursuits that lead to completion, workforce entrance and self-reliance. Figure 3.2 highlights the Beatty-Guenter retention strategy model at LaGuardia through COPE.
In this study the independent variable is a discrete variable because it only has two values: treatment or no treatment. This is also a dichotomous variable because it can have only two values. Students participate or they do not.

The dependent variable components investigated were semester to semester retention, rate of credit accumulation, and rate of graduation. Two of the dependent variables were discrete variables and one was a continuous variable.

For purposes of this study,

1. Graduation rate was the proportion of students in the COPE group and the Control Group who graduated any time after the end of Fall 2006. The graduation rate is a dichotomous discrete variable as students may or may not graduate.
2. Credits Earned Rate was the average number of credits earned per semester for all semesters attended beginning with Fall 2006. Credit accumulation is a continuous variable because a range of possibilities exist.

3. Retention Factor: This factor was the number of semesters attended over the first four semesters beginning in Fall 2006. Students who graduated at any time after Fall 2006 were given a retention factor score of 4. A student who only attended Fall 2006 had a score of 1. Like credit accumulation, retention is a continuous variable because a range of possibilities exist.

In this study, the data analyzed was archival data from the student records database. The data was organized in an Excel spreadsheet. It was maintained by the researcher in a safe and secure environment.

**Data Analysis**

Question 1 of the research questions of the study asked whether there were significant group differences in persistence (as measured by semester to semester retention) between community college TANF recipients who participate in a drop-out prevention program and the matched non-participating general community college students (constructed control group) enrolled at the community college. The data that addresses this question of persistence was measured on a four point scale with a range of 1 to 4. This is a somewhat limited range and it is not likely that this data will be normally distributed because of the limited range and because retention measures often do not cluster in the middle of the values possible. After conducting a preliminary analysis to determine the appropriate hypotheses testing method a t-test was selected. The researcher conducted a preliminary analysis to examine the distribution within the data set. In
studies such as this if the assumptions of range and distribution are violated, nonparametric statistics would serve as another option in place of parametric statistics like the t-test. There are several nonparametric tests for comparing two matched groups but in this study individual participants in one group were not matched with individual participants in the other group. Instead, the control group as a whole was constructed so that it was as similar as possible to the experimental group. Because of the way the control group was constructed, if parametric tests were employed it would be necessary to use an independent groups t-test rather than a related groups t-test. The same is true of nonparametric options. There are several nonparametric options for comparing two “independent” groups. For example, the Fisher Exact Test would be appropriate if the data were categorical and dichotomous such as Yes/No or Male/Female. Using this test would throw away some of the precision in the data because it is at least ordinal (ranked) because a score of 4 is better than a score of 3 which is better than a score of 2, and so on. With ordinal data, the best nonparametric equivalent of the parametric t-test is the Mann Whitney U Test. The Mann Whitney U Test tests for differences between the medians of two independent groups just as the t-test looks for differences between the means of two groups. In this study, since the data set was normally distributed the t-test was the statistic that was used to address the first research question.

As noted previously, semesters retained is considered a continuous variable. The critical p value was set at .05. Results with a p value less than .05 were considered statistically significant.

Research Question 2 asks whether there are statistically significant group differences in another measure of persistence: the rate of credit accumulation by
community college TANF recipients who participate in a drop-out prevention program versus the constructed control group of matched non-participating general community college students enrolled at the same institution. This data has a relatively wide range and met the criteria for using parametric statistics. It is normally distributed and there were similar variances in each group, therefore independent groups t-test was used to analyze the data. Like retention, and as noted previously, credit accumulation is considered a continuous variable.

Research Question 3 asked whether there are statistically significant group differences in persistence (as measured by rate of graduation) between community college TANF recipients who participate in a drop-out prevention program and matched non-participating general community college students enrolled at one community college. In order to address Question 3, the data analysis strategy used to test group differences between the treatment and control groups was the 2 X 2 Chi-square test with rows indicating the group and the two columns indicating the frequency of students in the group that graduated or did not graduate. In this instance both the independent and the dependent variables are discrete variables, treatment and graduation rates. The Chi-Square statistic is widely used for this type of data and typically calls for organizing the data in a 2 X 2 table. A significant Chi-Square indicates one of the groups has a higher proportion of members who fell into one of the two values of the dependent variable. In this study a statistically significant Chi-Square would indicate a higher proportion of students in one of the groups completed their program successfully.
Summary

In the study it was not ethically possible to assign participants at random given population and nature of the study. Consequently, understanding the effect of drop-out prevention initiatives aimed at helping public assistance recipients become successful college students that graduate would not have been appropriate through a true experiment. It was therefore important that a quantitative quasi-experimental study be conducted. To date, there has been little, if any, study of the community college students on public assistance as it relates to persistence relative to matched students from the general population. The research participants of the study were derived from degree seeking students at LaGuardia Community College in fall 2006. Using propensity score matching techniques, treated and untreated individuals were matched, balancing the two samples, COPE and Control Group students, on observable characteristics with the hope of allowing more rigorous inferences than are possible when using other statistical methods. As noted in the chapter, Access software was used to pull the data and set up the cell and outcome coding. Files were then downloaded into Excel to separate COPE and non-COPE (general population) students for the purpose of selecting the control group. To analyze the impact on retention and credit accumulation a t-test was used. To analyze the impact on the rate of graduation a chi-square test was used. In chapter 4 the results of the experiment are provided.
Chapter 4: Results

Introduction

This chapter reports the results and findings of the study. By comparing TANF recipients who participated in a comprehensive drop-out prevention program with similar students who did not participate in the program, this study examined TANF recipients’ persistence over a six year period using the graduation rate, retention rate, and number of credits earned by the Fall 2006 credit seeking cohort as outcome measures. The chapter is organized around the study’s research questions. After presenting descriptive data about the groups studied, the results relevant to each question are presented in separate sections. The chapter concludes with an overall summary of the results.

Preliminary and Descriptive Data Analysis and Findings

As noted in Chapter 3, a comparable control group was created using propensity score matching. From the possible 14,205 degree seeking students, 671 non-TANF students were selected based on matching demographics with respect to the 170 Treatment Group (COPE students). Based on the data, students in the COPE program represent a significant sub-set of the college's population.

Preliminary analyses. The next few tables compare and confirm the matching demographics of the two groups (COPE group and Matched Control Group students) with respect to eight demographic dimensions. The first demographic matching variable
for both groups was gender which is depicted in Table 4.1. The gender frequency patterns in Table 4.1 revealed that both groups had an equal distribution of participants by gender.

Table 4.1

**Gender Characteristics of COPE Students Versus Matched Control Group Students**

<table>
<thead>
<tr>
<th></th>
<th>Men (%)</th>
<th>Women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched Control Group</td>
<td>13</td>
<td>87</td>
</tr>
<tr>
<td>COPE Treatment Group</td>
<td>14</td>
<td>86</td>
</tr>
</tbody>
</table>

*Note.* COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.

The second demographic matching variable for both groups was minority distribution (percentage of African-American and/or Hispanic student in the groups) which is depicted in Table 4.2. The underrepresented minority (URM) population represented 66% of COPE group whereas the matched control group had a similar minority distribution (65%).

The third demographic matching variable for both groups was financial aid distribution (% of students receiving financial aid) which is depicted in Table 4.3. The COPE population had 82% of its population receiving financial aid. The Matched Control Group had a similar distribution (80%).
Table 4.2

*Minority Distribution Characteristics of COPE Students Versus Matched Control Group Students*

<table>
<thead>
<tr>
<th></th>
<th>URM (%)</th>
<th>Non-URM (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched Control Group</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>COPE Treatment Group</td>
<td>66</td>
<td>34</td>
</tr>
</tbody>
</table>

*Note.* URM = Under-represented Minority (Black or Hispanic) students. Non-URM = all other students besides Black or Hispanic students. COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N = 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.

Table 4.3

*Financial Aid Distribution Characteristics of COPE Students Versus Matched Control Group Students*

<table>
<thead>
<tr>
<th></th>
<th>Financial Aid (%)</th>
<th>No Financial Aid (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched Control Group</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>COPE Treatment Group</td>
<td>82</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note.* COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N = 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.
The fourth demographic matching variable, developmental need (i.e. need to take remedial classes), was approximately equally distributed for both groups. As noted in Chapter 3, students with developmental need were students who did not complete their remedial coursework prior to the study period, beginning Fall 2006. Table 4.4 summarizes the developmental need for students in both groups. The percentage of students in the COPE program, who did not finish their developmental coursework prior to the Fall 2006 semester was 36%, which was similar to the Matched Control Group (35%).

Table 4.4

<table>
<thead>
<tr>
<th>Developmental Need (%)</th>
<th>Non-Developmental Need (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched Control Group</td>
<td>35</td>
</tr>
<tr>
<td>COPE Treatment Group</td>
<td>36</td>
</tr>
</tbody>
</table>

*Note.* COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. Developmental need is the student’s need to take remedial classes.

The fifth demographic matching variable for both groups was the credit distribution. Figure 4.1 summarizes the credit frequency distribution for students in both groups. At the start of the study period both the matched control group and the COPE group had an equal distribution of credits earned.
Figure 4.1. Frequency credit distribution by population.

Note. COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. X Axis = credits earned Y Axis = percentage of students.

The sixth demographic matching variable for both groups was the GPA distribution. Figure 4.2 summarizes the GPA frequency distribution for the students in both groups.

As shown in Figure 4.2, both the matched control group and the COPE group had an equal distribution as it relates to GPA.
Figure 4.2. GPA frequency distribution by group. 

Note. COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.

The seventh demographic matching variable, age, which is defined as percent of population above 23 years of age, was equally distributed for both groups as seen in figure 4.3. The COPE group had 72%, which was similar to the Matched Control Group (72%).

The eighth demographic matching variable, F-1 Visa, was omitted from the observation. Students who are in the COPE group must be United States citizens. Thus it would have been inappropriate to include international students in the Matched Control Group. International students are not eligible for public benefits.
Figure 4.3. Age distribution by group.

Note. COPE students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.

As the preliminary analysis indicated, using propensity score matching enabled the researcher to construct a comparison control group for the study. Both groups were evenly distributed on all dimensions. To answer the research questions however, other statistical analyses were required. The research questions were aimed at helping the researcher get a better understanding of TANF recipient persistence.

Research question #1. Are there statistically significant group differences in persistence (as measured by semester to semester retention) between community college TANF recipients who participated in a drop-out prevention program and the control group?
On average (mean) the COPE group had a retention factor of 2.73 with a standard deviation of 1.56, as indicated in Table 4.5. The Control Group had similar characteristics. The Control Group had a mean retention factor of 2.77 with a standard deviation of 1.60. Additionally, both groups had a slight negative skew, indicating there were fewer low retention scores than high retention scores in both groups. However, when the COPE and Control Group values for each of the statistics in Table 4.5 were compared, using a two-tailed test of significance, none were statistically different. In fact, none even approach statistical significance.

Table 4.5

Semester to Semester Retention Data from Fall 2006 To Spring 2012

<table>
<thead>
<tr>
<th></th>
<th>COPE Group</th>
<th>Matched Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.73</td>
<td>2.77</td>
</tr>
<tr>
<td>Median</td>
<td>4.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.56</td>
<td>1.60</td>
</tr>
<tr>
<td>Variance</td>
<td>2.44</td>
<td>2.56</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.68</td>
<td>-0.74</td>
</tr>
</tbody>
</table>

Note: COPE GROUP students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program.

The results from the t-test, as outlined in Table 4.6, indicated that there was not statistical significance between the Control Group and COPE group, in terms of retention.
Table 4.6

T-test of Significant Differences in Semester to Semester Retention Mean scores for COPE and Matched Control Group students assuming equal variances

<table>
<thead>
<tr>
<th>COPE Group</th>
<th>Matched Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>2.73</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Note. COPE Group students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. *p < .05. M = Mean. SD = Standard Deviation. "t" = t-statistic. "p" = p-value. Confidence Interval was set at 95%.

That the t test was not statistically significant indicates there was no difference in retention between the COPE Group and the Control Group. This is a positive finding given that the COPE group is traditionally considered to be the most “at risk” for not persevering in their pursuit of a college education.

Research question #2. Are there statistically significant group differences in persistence (as measured by rate of credit accumulation) between community college TANF recipients who participate in a drop-out prevention program and the non-participating general community college students (constructed control group) enrolled at the community college?

On average, the Control Group accumulated a mean of 7.71 credits in the Fall 2006 semester, compared to the COPE Group’s accumulated 7.67 credits. Given the size of the standard deviation, which indicates considerable variance in the data from both
groups, the two means for credit accumulated were remarkably close. In addition, the standard error for the means was relatively small which suggests the two means are relatively representative of the central tendency in each group. The standard error for the COPE Group was almost double that of the Control Group but such a pattern is to be expected given that there were 671 students in the Control Group and only 170 in the COPE Group. The standard error of the mean tends to decrease as the n (sample size) increases.

Table 4.7

Credit Accumulation Per Semester for COPE Students Versus Matched Control Group

<table>
<thead>
<tr>
<th></th>
<th>COPE Group</th>
<th>Matched Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.68</td>
<td>7.71</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.31</td>
<td>4.52</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.33</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note. COPE Group students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. Average number of credits accumulated from Fall 2006 to Spring 2012. Confidence Interval was set at 95%.

During the study period, the researcher observed that there was a varied pattern in average credits earned by active students in each semester of the study; as noted in Figure 4.4. The Control Group earned more credits in the first semester than the COPE Group. After the first semester, the researcher observed that, on average, the Control Group's
earned credits declined for four consecutive semesters, with few exceptions. Conversely, the COPE group's pattern for earned credits fluctuated more than the Control Group's.

Additionally, Figure 4.4 shows the average accumulated number of credits for only those students who had not dropped out or graduated in each semester. Students who are stopped out are included, but they do not cause any increase in the average since they earn zero credits in that semester.

![Mean credits by semester for COPE and Matched Control Groups.](image)

Figure 4.4. Mean credits by semester for COPE and Matched Control Groups.

The researcher then questioned whether the COPE group was stopping out more frequently given the data. It appears that they did; as illustrated in Figure 4.5. The researcher also observed that when a student stops out, they earn zero credits in a semester, and then earn more credits later. (If a student earns zero credits now, and none later, then they are not included. They are not active.) Although some students earn zero
credits because they fail, then earn more later, these are many fewer than stop-out students. About 1/3 of all leavers are stop-outs.

More stopping out would cause the credit accumulation graph to drop for the COPE students as we see. Additionally, Figure 4.5 shows the average accumulated number of credits for only those students who had not dropped out or graduated in each semester. Students who are stopped out are included, but they do not cause any increase in the average since they earn zero credits in that semester.

![Average Credit Accumulation for Active (not yet graduated or dropped out) Students in Program](image)

**Figure 4.5.** Average (mean) credit accumulation for active students in the program.

Based on Figures 4.4 and 4.5, the researcher conducted another assessment to analyze if there were any significant differences between the COPE and Control group students who stop-out. The two groups on average earned credits at the same rate. However, it is equally important to note that when the stop-out (withdrew for no more than two semesters) students from the COPE Group returned, they earned more credits than students from the Control Group who stopped-out as outlined in Table 4.8. These data suggest high resiliency amongst the COPE student population.
Table 4.8

Average Number of Credits Per Semester for COPE Students and Matched Control

Group Students Post-Stopping Out

<table>
<thead>
<tr>
<th></th>
<th>COPE Group</th>
<th>Matched Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.58</td>
<td>6.89</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.12</td>
<td>4.38</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.33</td>
<td>0.17</td>
</tr>
<tr>
<td>Population</td>
<td>26</td>
<td>24</td>
</tr>
</tbody>
</table>

Note: Stopped out means a student did not take courses for more than two semesters and re-enrolled. COPE GROUP students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program).

Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. Average number of credits accumulated from Fall 2006 to Spring 2012. Population is measured as a percentage. Confidence Interval was set at 95%.

Based on the preliminary analysis the data appeared to be normally distributed and the variances of the data from the two groups were similar. Given that the data met the criteria for parametric analysis the credits earned data from the two groups were compared using student’s t-test.

As shown in Table 4.9 there was no statistically significant difference between the means of credits earned between the Control Group and the COPE Group.
Table 4.9

T-Test of Significant Differences in Rates of Earned Credits for COPE and Matched Control Group Students Assuming Equal Variances

<table>
<thead>
<tr>
<th>COPE Group</th>
<th>Matched Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>7.68</td>
<td>4.31</td>
</tr>
</tbody>
</table>

Note. P < .05 (2-tailed). M = Mean. SD = Standard Deviation. St. Error = Standard Error of the Mean. COPE GROUP students (N = 170) represented the treatment group (TANF-recipients who participated in the LaGuardia Community College COPE program). Matched Control Group (N= 671) represented students with similar demographic characteristics as the COPE group who did not participate in the COPE program. Confidence Interval was set at 95%. Average number of credits accumulated from Fall 2006 to Spring 2012.

**Research question #3.** Are there statistically significant group differences in persistence (as measured by rate of college graduation) between community college TANF recipients who participate in a drop-out prevention program and the non-participating general community college students (constructed control group) enrolled at the community college?

During the research period (from Fall 2006 to Spring 2012), 55% of the students from the Control Group graduated, as compared to 51% of the students from the COPE group (see figure 4.6).
In order to address Question 3, the data analysis strategy used to test group differences between the treatment and control groups was a 2 X 2 Chi-square test. The test included rows indicating the group and the two columns indicating the frequency of students in the group who graduated or did not graduate. In this study, where the researcher is examining a discrete variable, a statistically significant Chi-Square would indicate that a higher proportion of students in one of the groups completed their program successfully. Research Question 3 asked whether there are statistically significant group differences in persistence (as measured by rate of graduation) between community college TANF recipients who participate in a drop-out prevention program and non-participating general community college students enrolled at one community college?

In Figure 4.6, the data suggest that the Control Group students were slightly more likely to graduate than the COPE students. However, the percentages are so close that they may fall within the margin of error. One way to test this difference of about 4% in the percentages is to conduct a 2 X 2 Chi-Square test. The result of that test, however, yielded a Chi-Square of .65 which has a p value of .42 which does not even approach the
critical value of .05. The differences in graduation rate between the two groups were not statistically significant. Another test, the Significance of the Difference Between Proportions, was also calculated on this data and the result was also not statistically significant ($z = -0.895, p = .37$ two tailed).

**Summary of Results**

The selection of the control group that was comparable to the COPE group was a difficult task. The researcher, using propensity score matching, however, was able to find a comparable group that represented the proportion of students for each of the eight dimensions: cumulative GPA, credits, race/ethnicity, age, gender, international, financial-aid, and developmental need.

Conducting a Descriptive Analysis provided meaningful insight. The researcher used this method as a preliminary examination of the retention rates and credit accumulation rates. Both rate examinations indicated that the data sets were normally distributed. Additionally, the results from the persistence data (credit accumulation), led the researcher to examine anomalies.

The volatility of the accumulation of credits for COPE students, combined with a continuous decline in accumulated credits for the Control Group, led the researcher to analyze student stop-outs for both groups over the study period because the data appeared counterintuitive - both groups ended with the same graduation rate. What the researcher discovered was that the COPE students stop-out more frequently than the Control Group. This led the researcher to analyze how a group that stops out more frequently than the comparable group could have a comparable graduation rate. What the researcher then discovered was that COPE students who stopped-out, upon returning to the college,
accumulated, on average, more credits than the Control Group of students who stopped-out.

As noted in Chapter 3, the researcher hypothesized that on average members of the COPE group persist, graduate, and return at the same rate as the Control Group. Although both groups were similar in characteristics, as noted in preliminary analysis tables and figures, on the three measures of successful college participation, there were no statistically significant differences. In fact, the outcomes were remarkably similar. In short, TANF recipients (COPE students) persist, return, and graduate from college at very similar rates as students who are similar to TANF recipients, but are not.
Chapter 5: Discussion

This chapter summarizes the results of the study comparing persistence between community college students enrolled in a drop-out prevention program named COPE that was for TANF recipients with the persistence of a matched control group drawn from the general college population that did not participate in the drop-out prevention program but had characteristics similar to that of the treatment group (except that none of the control group was receiving TANF). This chapter will explore the implications of the study’s findings in terms of professional practice, discuss the study’s limitations, and offer recommendations for both professional practice and future research. The chapter will end with concluding remarks that summarize the dissertation.

Implications of Findings

The findings of the study further support prior research that indicates that when an institutional support system is in place TANF recipients can succeed academically (Fenster, 2003). TANF students are one of, if not the, most “at risk” groups of students in higher education and a very promising finding of this study was that with well-organized and broad support services their persistence rates can equal that of students who are like them but not receiving TANF. It validates the time, money, and staff resources invested in programs like COPE at La Guardia Community College and justify the deployment of similar programs at other institutions.
However, the study did not find that with support TANF students behave in virtually the same way as similar students who do not receive TANF. In fact, an unanticipated but important finding relates to the pattern of attendance and credit accumulation of TANF students. The data highlighted patterns that have practical significance for professional practice. A U.S. Department of Education study concluded that among the students who attend community colleges to obtain a degree or credential or who plan to transfer to a four-year institution, nearly one half do not accomplish this goal (Cooper, 2010, p. 22). “Low income and minority students are particularly vulnerable to dropping out” (Cooper, 2010, p. 22). Many students have difficulty meeting college costs, need developmental or remedial courses in math and English, and many are trying to maintain balance between school, family, and work obligations (p. 22). The intricate interplay between these factors have led, and continue to lead, community college students to stop out or altogether abandon their plans of pursuing a postsecondary degree, or formal education of any sort,. This is particularly true of TANF recipients, as some students are not inclined to believe their short-term plans of attending community college will produce an immediate return on investment. However, the data analysis suggests the need to carefully differentiate between stopping out and dropping out. In this study TANF recipients stopped out more frequently than the constructed comparison group over the study period. Yet, the TANF recipients still accumulated credits and graduated at rates comparable to the constructed comparison group. Moreover, while the TANF recipients stopped out more frequently than the constructed comparison group, with the support of COPE services, when they re-enrolled, TANF recipients took and accumulated more credits than the constructed comparison group during that same
period. This suggests that TANF students, with help, have the resiliency necessary to persist and complete their education. This finding, although unanticipated, signals to practitioners using the Beatty-Guenter model the importance of understanding the specific reasons for a student’s need to stop out so that the appropriate mix of support strategies can be offered as alternatives to withdrawal. It also suggests the possibility that if the institution maintains contact and continues to provide some support and encourage students who have stopped out, the number who re-enroll rather than drop out may be higher.

**Limitations**

Methodologically, this study relied upon the same theoretical rationale as Fenster (2003), which was discussed in Chapter 2. As noted, Fenster conducted a study of undergraduate students (N = 106) enrolled in a pilot program for TANF recipients. That study compared the achievement of TANF recipients with that of the general population students at an urban community college in the first year. Like the COPE program used in this study Fenster’s support services had all the desirable attributes of the Beatty-Guenter model and thus constituted an integrated comprehensive dropout prevention strategy. The two studies are different in that the present research sought to address some of the limitations in the Fenster study by extending the time of observation to six years and by studying the component parts of persistence: semester to semester retention, rate of credit accumulation and rate of graduation. Fenster used both the t-test and Chi-Square tests with respect to data analysis. This study also used the same types of statistical tests. The overarching research question Fenster asked was: Can a group of welfare recipients, given extra counseling, academic, and financial support, succeed in basic college
courses? The overarching research question in the present study was: Can a group of welfare recipients, when given extra counseling, academic, and financial support, persist and graduate? The results of both studies indicate that not only can TANF recipients achieve academically with a little help but also persist at rates comparable to similar students in the general population who do not receive TANF. What this study did not do is examine the specific component parts of the Beatty-Guenter model used by COPE. Such a study might help determine which of the strategies had a greater or lesser impact on the TANF recipients’ persistence. Short of withholding some services from randomly selected students, a survey or interviews might have enabled the researcher to contribute some understanding to that question. Additionally, the study did not consider the economic climate during the study period and the impact a depressed economy had on enrollment patterns during that period.

**Recommendations**

Perhaps the most important recommendation is that comprehensive support services for TANF recipients who are attending college may well be worth the investment. A second recommendation is that for the most at risk students, stopping out may be something they consider necessary and essential but it does not mean they have given up on completing their education. Research needs to be done on whether supporting these students during their stop out will enhance the likelihood they will re-enroll and complete their programs.

The need also exists for conducting future studies exploring the factors considered by TANF recipients in making the decision to stop or drop out and re-enroll in school. While this study demonstrated that stopping-out happens, it also indicated stopping-out is
not always a prelude to dropping out. Future researchers should explore why and how those decisions are made. Future studies should also attempt to examine the extent to which community college students are aware of their eligibility for TANF benefits.

Students who are experiencing financial hardship are less likely to remain in school and graduate. If students, particularly very low-income students, are to meet with success, it is critical that they are informed about and, if eligible, receive financial assistance in the form of public benefits to help them remain enrolled and graduate. Finally, future researchers should explore the social return on investment for supporting TANF recipients who seek to complete community colleges and go into the workforce.

**Summary**

Enrollment in community college may be “an effective path to long-term self-sufficiency” (Mayfield, 2001, p. 7). Each year recipients of Temporary Assistance for Needy Families (TANF), the nation’s primary cash assistance program for public assistance recipients attend community colleges to broaden their horizons. “In theory, higher education leads to greater earning power, which leads to increased employment and a decrease in receipt of public assistance such as TANF” (Mayfield, 2001, p. 7). Therefore, not only is it important for colleges to enroll students, it is equally important that students complete degree programs or acquire credentials. This contributes to students having better access to employment opportunities and earnings that will support them and their families, and this is especially important for TANF recipients. The potential economic and intellectual contributions of these graduates to the nation are important. For more than half of the new jobs that will be created in the United States, a postsecondary degree or certificate will be required (U.S. Department of Education,
Community colleges serve as one of the ideal vehicles through which to educate and train future workers who will be needed to staff these jobs. This summation will highlight the purpose of the community college TANF recipient persistence study, review the methodology used, outline the results and implications of the findings and end with the key recommendations.

The purpose of this study was to compare persistence between community college students enrolled in a drop-out prevention program for TANF recipients with the persistence of a matched control group from the general college population that did not participate in the drop-out prevention program. For the purposes of this study, persistence was defined as a student’s continued enrollment in the institution, making progress toward, and ultimately completing their program of study. More specifically, the study operationalized community college student persistence using the following three outcomes: (1) semester to semester retention, (2) rate of credit accumulation and (3) rate of graduation for the treatment group (TANF participants in drop-out prevention program) compared to the control groups (general college students).

This study, which used a quantitative, quasi-experimental constructed comparison group design, explored the persistence of TANF recipients’ at LaGuardia Community College over a six year period. LaGuardia was selected by the researcher as the case study institution given its long-standing work with TANF recipients and its commitment to improving outcomes. It supports TANF recipients through a comprehensive drop-out prevention effort called the College Opportunities for Employment (COPE) Program. Patricia Beatty-Guenter’s contribution to college student retention, synthesizing traditional drop-out prevention strategies, in light of the research, into four broad
categories - sorting, supporting, connecting, and transforming (institution and student) -
provides educational institutions the framework to develop a successful comprehensive
drop-out prevention program aimed at supporting persistence (Beatty-Guenter, 1994).
Her model was the theoretical rationale supporting this study. It has also been used in a
similar study on TANF recipients that focused its inquiry on the student’s academic
achievement in basic level courses (Fenster, 2003).

This study’s independent variable was participation in the drop-out prevention
program, COPE. The dependent variable was persistence as measured by (1) semester to
semester retention, (2) rate of credit accumulation and (3) rate of graduation. The study
was designed to answer the following research questions:

1. Are there significant group differences in persistence (as measured by
   semester to semester retention) between community college TANF recipients
   who participated in a drop-out prevention program and matched non-
   participating general community college students enrolled at one community
   college?

2. Are there significant group differences in persistence (as measured by rate of
   credit accumulation per semester) between community college TANF
   recipients who participated in a drop-out prevention program and matched
   non-participating general community college students enrolled at one college
   community?

3. Are there significant group differences in persistence (as measured by rate of
   graduation) between community college TANF recipients who participated in
a drop-out prevention program and matched non-participating general community college students enrolled at one college community?

The particular quasi-experimental design, a constructed comparison group, was selected because it is particularly suited to situations where there is no possibility of either using random assignment to create the experimental and control groups, and there is, likewise, no way of identifying a naturally occurring group that would serve as a suitable control for the experimental group. Constructed comparison group designs match a treatment and control group based on relevant factors, other than the treatment provided, that are thought to influence scores or measurements of the dependent variable. Propensity score matching was used to construct the comparison group. Propensity score matching is a methodological approach that attempts to match students from two groups based on observable characteristics that are similar in both groups. Eight characteristics were selected to match the two groups: (a) cumulative GPA through spring 2005, (b) credits earned through spring 2005, (c) race/ethnicity (Black/Hispanic v. all others), (d) age (younger than 24 v. 24 and older), (e) gender, (f) international student status (F-1 visa, no F-1 visa), (g) financial aid recipient Fall 2006, and (h) developmental status as of end of spring 2005, (all developmental requirements finished v. developmental requirements remaining). The matching procedure was accomplished by calculating a predicted probability score for each subject, regardless of group participation, which indicated how likely the subject was to be in the treatment group based on demographic and previous achievement variables included in the model. This predicted probability, or propensity, value was calculated for both groups of students simultaneously and non-COPE subjects with the most similar probability scores to TANF students participating in
the COPE program were matched and their outcomes compared. For purposes of data analysis, to analyze the impact on retention and credit accumulation a t-test was used. To analyze the impact on the rate of graduation a Chi-square test was used.

TANF recipients’ persistence rate as measured by semester to semester retention, credit accumulation and graduation rate was statistically equivalent to the constructed comparison group when compared. The findings suggest that, given proper support, TANF recipients can persist at rates comparable to similar students in the general student body. Because being a TANF recipient has been shown, in previous research, to reduce the likelihood of persisting, this result is encouraging. An unanticipated result from the study was that the data indicated TANF recipients stopped out more frequently than the constructed comparison group over the study period but still accumulated credits and graduated at rates comparable to the constructed comparison group. With the support of COPE services, when they re-enrolled, TANF recipients took and accumulated more credits than the constructed comparison group during that same period suggesting that TANF students, with help, have the resiliency necessary to persist and complete.

The need exists for conducting future studies exploring the factors considered by TANF recipients in making the decision to stop or drop out and re-enroll in school. Additionally, future researchers should explore why and how those decisions are made. Future studies should also attempt to examine the awareness of financial support of TANF by students who may be eligible for benefits but not have them. Lastly, future researchers should explore the social return on investment for supporting TANF recipients who seek to complete community colleges and go into the workforce.
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