

THE SUMMATIVE IMPACT OF COLLEGE ACCESS INTERVENTIONS:
A PROGRAM EVALUATION OF GEAR UP NORTH CAROLINA

A Dissertation
by
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Abstract

THE SUMMATIVE IMPACT OF COLLEGE ACCESS INTERVENTIONS: A PROGRAM EVALUATION OF GEAR UP NORTH CAROLINA

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This study evaluated the summative impact of interventions in a statewide Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) grant. This United States Department of Education federal grant was funded at \$19.2M in 2005 to serve students in 19 North Carolina low-income school districts. Direct student and parent services were examined in relation to students' subsequent postsecondary enrollment focusing on the 2010-11 graduating seniors in the GEAR UP North Carolina program. This study examined the impact parent and student services had on postsecondary enrollment. A fidelity index assessing whether grant objectives were met was also created to determine if meeting the grant's objectives was related to postsecondary enrollment. Overall, student services were shown to have an impact on postsecondary enrollment. In particular, there were two student services and three parent services that positively predicted postsecondary enrollment. Additionally, grade-point average, course of study, and gender also predicted the likelihood of postsecondary enrollment. There was a significant correlation between meeting the grant's objectives and postsecondary enrollment. Policy recommendations are included for GEAR UP programs, as well as suggestions for future GEAR UP evaluation.

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Chapter One

Introduction

The Organization for Economic Co-operation and Development (OECD) ranks the United States at number nine for college completion behind South Korea, Canada, and Japan, (U.S. Department of Education, 2011a). To get to number one, the United States needs about eleven million additional students graduating college with postsecondary certificates or degrees to increase the college graduation numbers from approximately sixteen million in 2010 to twenty-seven million in 2020 (U.S. Census Bureau, 2008-10; U.S. Census Bureau, 2020 Projections). President Obama's 2020 goal is for the United States once again, to lead the world in college completion. In response to the 2020 goal, college access programs are being held accountable to more rigorous research and evaluation methodologies to ensure students are prepared to enroll, persist, and succeed in their postsecondary education endeavors (U.S. Department of Education, 2011b). This study seeks to advance this agenda by an evaluation of a state GEAR UP program.

Historical Policy on College Access

Several major factors have contributed to the evolution of college access for underserved students within the United States. Among the first were the Morrill Land Grant Acts of 1862 and 1890 that allowed for the creation of land-grant colleges, many of which are still landmark postsecondary institutions today. Land grants and subsequent colleges were a response to the industrial revolution and provided an opportunity for minority students and those from lower social classes to attend postsecondary institutions. Additionally, the G.I.

Bill of Rights, signed into law in 1944 by President Franklin D. Roosevelt as the Servicemen's Readjustment Act, benefited 7.8 million veterans of World War II through federal payouts for college expenses, training programs, and monthly stipends (Mettler, 2005). Comparatively, more than 55,000 veterans have received benefits under the Post-9/11 Veterans Educational Assistance Act, commonly called the G.I. Bill of Rights for the 21st Century; these benefits have been used at more than 6,500 colleges across the country (Sander, 2012).

Furthermore, significant legislation passed in the 1950s and 1960s led to new postsecondary opportunities for minority, underserved, and underrepresented populations who had previously been excluded in a segregated society. In 1954 the *Brown v. Board of Education* Supreme Court decision declared state laws establishing separate public schools for black and white students unconstitutional. A decade later the Civil Rights Act of 1964 in conjunction with the Economic Opportunity Act of 1964, still identified with the Head Start programs of today, promoted greater inclusion of minorities in the educational and economic life of America. Additionally, the Higher Education Act (HEA) of 1965, signed into law by President Lyndon Johnson, was intended "to strengthen the educational resources of our colleges and universities and to provide financial assistance for students in postsecondary and higher education" (Higher Education Act of 1965, Public Law 89-329, p. 1). The Higher Education Opportunity Act (HEOA) of 2008 reauthorized the HEA of 1965, strengthening the federal agenda for college access even more. Each of these decisions has promoted the American ideal that every student in the United States should have access to a college education. Consequently, national and state policies now provide more students with greater opportunities for postsecondary enrollment and success.

National policy. Federal programs have been put in place over time specifically to assist low-income students in their attainment of higher education. Many of these programs are supported through funds that are funneled to states through discretionary federal grant projects. In December 2010, the United States Department of Education released sixteen supplemental priorities for federal discretionary funding that are currently being woven into federal discretionary grant programs as competitive priorities. These priorities, outlined in Table 1, are related to and drive college access opportunities for underrepresented students.

Table 1

U.S. Department of Education Supplemental Priorities for Discretionary Grant Programs^a

Priority 1—Improving Early Learning Outcomes

Priority 2—Implementing Internationally Benchmarked, College- and Career-Ready Elementary and Secondary Academic Standards

Priority 3—Improving the Effectiveness and Distribution of Effective Teachers or Principals

Priority 4—Turning Around Persistently Lowest-Achieving Schools

Priority 5—Improving School Engagement, School Environment, and School Safety and Improving Family and Community Engagement

Priority 6—Technology

Priority 7—Core Reforms

Priority 8—Increasing Postsecondary Success

Priority 9—Improving Achievement and High School Graduation Rates

Priority 10—Promoting Science, Technology, Engineering, and Mathematics (STEM)

Education

Priority 11—Promoting Diversity

Priority 12—Support for Military Families

Priority 13—Enabling More Data-Based Decision-Making

Priority 14—Building Evidence of Effectiveness

Priority 15—Supporting Programs, Practices, or Strategies for Which There Is Strong or Moderate Evidence of Effectiveness

Priority 16—Improving Productivity

Note: ^a Table adapted from Federal Register, December 15, 2010.

Historically, there have been two Democratic presidential administrations that have initiated broad scope college access initiatives. First, in 1998, during the State of the Union address, President Clinton presented Congress with a new education initiative called High Hopes. President Clinton (1998) outlined the following in his remarks:

I also ask this Congress to support our efforts to enlist colleges and universities to reach out to disadvantaged children, starting in the 6th grade, so that they can get the guidance and hope they need so they can know that they, too, will be able to go on to college. (White House Press Release, 1998)

High Hopes eventually became Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) as part of the 1998 HEA Amendments (The White House, 1998). The purpose of GEAR UP is, “to increase the number of low-income students who are prepared to enter and succeed in postsecondary education” (U.S. Department of Education, 2010a).

Second, on July 14th, 2009 at Macomb Community College in Michigan, President Obama announced the American Graduation Initiative:

That is why, at the start of my administration I set a goal for America: by 2020, this nation will once again have the highest proportion of college graduates in the world....Today, I am announcing the most significant down payment yet on reaching this goal in the next ten years. It’s called the American Graduation Initiative. It will reform and strengthen community colleges from coast to coast so that they get the resources students and schools need – and the results workers and businesses demand. Through this plan, we seek to help an additional five million Americans earn degrees and certificates in the next decade. (White House Press Release, 2009)

The United States Department of Education college access endeavors are guided by the Office of Postsecondary Education (OPE). OPE includes several major divisions including Higher Education Programs (HEP) which has leadership from the Assistant Secretary for Postsecondary Education, and under the OPE and HEP hierarchy falls the Student Service Division. Student Service, a newly formed partnership in 2011, encompasses TRIO and GEAR UP which are the two largest federal college access programs in the nation.

TRIO programs began with the creation of Upward Bound during the Economic Opportunity Act of 1964 (U.S. Department of Education, 2010b). In 1965, Talent Search was added under the HEA, and in 1968 Student Support Services (SSS) was added during the HEA Amendments. By the late 1960s, TRIO encompassed these three programs. While all three programs provide services to low-income and/or first-generation students, Upward Bound and Talent Search serve secondary students in their access to college, and Student Support Services serves students during their attendance at postsecondary institutions. Over the years, four additional programs have been added to the TRIO portfolio; these include 1) the Ronald E. McNair Post-Baccalaureate Achievement Program, 2) Educational Opportunity Centers, 3) the Upward Bound Math/Science Program, and 4) Veterans Upward Bound. While the McNair program and Educational Opportunity Centers were established for postsecondary students, the Upward Bound Math/Science and Veterans Upward Bound serve students in their pursuit of college access (McEloy & Armesto, 1998).

GEAR UP was formed to increase the number of students successfully prepared to enter and complete college. Unlike TRIO which serves individual students within schools, GEAR UP serves cohorts of students starting no later than the 7th grade in schools where at least 50 percent of the students are eligible for free or reduced-price lunch under the under

the Richard B. Russell National School Lunch Act (U.S. Department of Education, 2011b). These students are served continuously through the end of their secondary education or their first year of postsecondary education, depending on the fiscal year they were funded and the program structure. Fiscal year 2011 was the first year GEAR UP grantees had the option of including services for the first year of postsecondary education. Created in 1998 to help overcome educational disparities by providing resources and services to students from underrepresented and low-income communities, GEAR UP's mission is to prepare students to enter and succeed in postsecondary education. GEAR UP, like other federal OPE programs operates under the Office of Management and Budget (OMB). The OMB measures for GEAR UP grantees are as follows:

- Performance Measure 1: Increase the academic performance and preparation for postsecondary education of GEAR UP students.
- Performance Measure 2: Increase the rate of high school graduation and participation in postsecondary education.
- Performance Measure 3: Increase GEAR UP students' and their families' knowledge of postsecondary education options, preparation, and financing.

As more college access programs are offered to serve underrepresented and underserved students, financial literacy has become more of a national focus. To address the many financial barriers of underrepresented populations, the HEA established a federal system for student financial aid. Out of the HEA of 1965 came programs that are now known as the Pell Grant and the Stafford Loan (U.S. Department of Education, 2010c). Most recently, the federal government has removed state postsecondary lending to a federal direct loan lending program that has lower interest rates (U.S. Department of Education, 2010c).

The United States once led the world in the number of 25 to 34 year-olds with college degrees, but that statistic is no longer true. In 2008 the national college enrollment rate after completing high school was 68.6 % (U.S. Department of Education, 2009). By implementing these federal programs at the state and local education levels, the United States has the potential to regain international postsecondary leadership while strengthening local communities as more students are college educated and prepared to join the workforce.

State policy. In 2006 North Carolina's college enrollment rate after completing high school was 65.7 %, while more recent data indicate that 65.9% of North Carolina's students who start at a four-year in-state postsecondary institution graduate within six years and that 35.2% of North Carolina's students who start at a two-year in-state postsecondary institution graduate within six years (National Student Clearinghouse Research Center, 2013). In 2007, the state of North Carolina refocused the meaning of college access through the creation and implementation of the University of North Carolina Tomorrow (University of North Carolina Tomorrow Commission Final Report). This initiative was designed to determine how to proactively anticipate and identify the needs facing North Carolina in the 21st century (University of North Carolina Tomorrow Commission Final Report, 2007). UNC Tomorrow set forth seven areas of improvement for the University based on a series of town hall meetings across the state, surveys, and stakeholder feedback. Major finding 4.2 states: "UNC should increase access to higher education for all North Carolinians, particularly for underserved regions, underrepresented populations, and non-traditional students" (University of North Carolina Tomorrow Commission Final Report, 2007, p. 15).

North Carolina also has a focus on college access programs for underserved students. In 2010 the North Carolina State Board of Education approved a new student and school

accountability model to begin in 2013-14 that focuses on college and career readiness (North Carolina Department of Public Instruction News Release, 2010). These changes were part of former Governor Perdue's statewide initiative, Career and College: Ready, Set, Go, also known as the College and Career Promise. The initiatives are part of North Carolina's federally funded Race to the Top (RttT) federal project. The goals of this plan are as follows:

- Increase the number of students who can read, write, and do math at the end of grade three;
- Increase the number of students who perform at or above grade level; and
- Increase the number of students taking college credit courses while in high school; graduating from high school; going to college; and completing a degree from community colleges, colleges, and universities.

More recently, in 2012, North Carolina implemented a statewide requirement for the American College Testing (ACT) College and Career Readiness System that includes the EXPLORE, PLAN, and ACT in the 8th, 10th, and 11th grades, respectively. As North Carolina moves toward a new school accountability model, the North Carolina Department of Public Instruction will use the ACT College and Career Readiness System as a component of measuring college readiness.

Additionally, the College Foundation of North Carolina (CFNC) is a statewide free online resource for planning and applying to college known as CFNC.org funded by the North Carolina General Assembly. CFNC's planning and applying resources have provided significant contributions towards increasing the number of students who enroll and succeed in college. The percentage of CFNC.org account holders who enrolled as first-time first year students at a University of North Carolina institution increased from 74.3% to 88.3%

between 2005 and 2007 (Tillery & English, 2009). This increase shows more students taking advantage of and being knowledgeable about this vast resource.

There are also many other college access programs in North Carolina. Some of these programs include: Advancement Via Individual Determination (AVID), the New Schools Project, the Western North Carolina Network for Access and Success, the Carolina College Advising Corps, and the North Carolina Math Science Education Network.

Purpose of the Study

The purpose of this study was to evaluate the summative impact of the GEAR UP North Carolina program with a particular focus on the 2010-11 graduating seniors who participated in the statewide GEAR UP North Carolina program funded by the United States Department of Education in 2005. The research questions, which are outlined in Chapter three, address several facets of the GEAR UP North Carolina program. First, this research addresses postsecondary enrollment of the 2011 graduates and analyzes the characteristics of those students who enrolled in postsecondary education. This allowed for an in-depth examination of the dosage, or hours received, of student and parent intervention services. GEAR UP student and parent services, a large cost of the GEAR UP program, were analyzed to explore relationships between student and parent participation in GEAR UP activities and postsecondary enrollment. If the GEAR UP North Carolina program effectively targeted and provided college access services to students and parents, the results should indicate that those students who had a higher dosage of student and parent interventions enrolled in postsecondary education at a higher rate. This study also examined course of study, grade-point-average (GPA), and demographic data to analyze which of those variables were predictors of college enrollment. While the study did not control for parental support, the

study determined whether the amount of parental involvement in GEAR UP North Carolina had a positive relationship to college enrollment. While the hypothesis is that parents who participated more were more involved parents, this study will not be able to ascertain the baseline level of parental support. One of the greatest benefits of this study was the identification of which student and parent services had the greatest impact on postsecondary enrollment accounting for service dosage. All GEAR UP student and parent services are outlined in Table 2. Other GEAR UP studies have only looked at these services in aggregate and have not determined which individual services have positive impacts on college enrollment. Additionally, this study examined the fidelity of meeting stated grant objectives and the relationship meeting those had on college enrollment.

While working within the GEAR UP community, I have heard these questions asked again and again, but never answered. The study will have significant implications for college access programs across the country, especially federal programs developed to assist students as they matriculate from middle school to high school and into postsecondary education. Many congressional delegates, as well as United States Department of Education personnel, are seeking answers to these types of questions as funding for discretionary programs becomes tighter and as the nation works to strengthen the educated citizenship of the United States. For me personally, this research exemplifies a crossroads of my personal and professional life. As a first-generation student of higher education, one who is the first member from my family to attend college, education has been the cornerstone of my life. Additionally, my professional career has been in the field of college access research and evaluation for the last six-years. During this time, I have spent time in low-income school

districts and also have a deep connection to the students who are served by college access programming.

Definition of Terms

To ensure clarity and facilitate understanding, the following terms are defined for this study:

- **College access:** An educational movement that assists students, particularly low-income and underrepresented students, in their endeavor to enroll, persist, and graduate from a postsecondary institution through strategic programming interventions that takes place in secondary school settings.
- **First-generation students:** Students who are the first members of their families to attend college (Chen, 2005).
- **GEAR UP student:** A student who is eligible by definition to receive direct GEAR UP services through a cohort model of program implementation. Direct GEAR UP services are defined as any student or parent service that is documented and coded for evaluation and/or reporting purposes by the GEAR UP North Carolina program. Students who are enrolled in schools that are implementing GEAR UP services participate at different levels of service. Additionally, over the six-years of a GEAR UP project, students enroll, withdraw, and/or re-enroll in schools where GEAR UP services are provided.
- **High school graduation rate:** The four-year adjusted cohort graduation rate, also referred to as “the four-year graduation rate,” is the number of students who graduate in four years with a regular high school diploma divided by the number of students who form the adjusted cohort for the graduating class. From the beginning of 9th

grade, students who are entering that grade for the first time form a cohort that is subsequently adjusted by adding any students who transfer into the cohort later during the 9th grade and the next three years and subtracting any students who transfer out, emigrate to another country, or die during that same period (U.S. Department of Education, 2008).

- **Low-income:** Schools in which at least 50 percent of the students are eligible for free or reduced-price lunch under the Richard B. Russell National School Lunch Act (U.S. Department of Education, 2011b).
- **Parent services:** Parent services, for the purpose of this study, also include other family member and/or guardian attendance at defined parent activities. The United States Department of Education requires grantees to report on “parent” services but given the population of the students served, services were captured for “families” by GEAR UP North Carolina and included guardians.
- **Postsecondary enrollment:** Enrollment of students who are admitted to an institution and subsequently enroll; note that some institutions have an open admission policy. For the purpose of this study, postsecondary enrollment is defined as those students who enrolled in college immediately after high school graduation and were retained in college through the first semester. Students that were enrolled in postsecondary education during high school were also included if they continued enrollment after high school graduation and through the first semester.
- **Underrepresented students:** In the context of race- and ethnicity-related diversity policies, consideration should be given to defining this term with respect to groups of students for whom there are insufficient numbers to establish a critical mass that will

advance the educational benefits of diversity (College Board, 2009). This also includes first-generation students.

This document is organized into five chapters. This chapter, Chapter One, outlines an introduction to the study and provides a state and national perspective of college access, as well as definitions of common terms for the purpose of this study. Chapter Two provides an overview of GEAR UP North Carolina, as well as a review of the literature. Chapter Three outlines the methodology used for this study. Chapter Four presents descriptive and quantitative results of the study. Chapter Five provides a synthesis and discussion of the data along with future inquiry, limitations of the study, and policy recommendations.

Chapter Two

GEAR UP North Carolina Background and Review of the Literature

This chapter will provide an overview of the GEAR UP North Carolina program, a statewide GEAR UP program serving over 16,000 students. GEAR UP North Carolina students and their postsecondary outcomes are the focus of this proposed program evaluation. In addition, this chapter will introduce college access literature, followed by GEAR UP specific literature, as well as address gaps in the literature that this study addresses.

GEAR UP North Carolina Overview

GEAR UP North Carolina is administered through the University of North Carolina General Administration (UNC GA), as appointed by the North Carolina Governor's Office. GEAR UP North Carolina, a state GEAR UP grant, was funded in 2005 and served 42 middle and high schools in 19 North Carolina local education agencies (LEAs). The middle schools in these districts had at least 50% of students receiving free or reduced-price lunch. GEAR UP contracted with LEAs to fund a full time coordinator position in each school district. The coordinator was responsible for implementing direct GEAR UP interventions or services with students and parents. In addition, the district contracts were designed to fund strategic, data-driven services. GEAR UP provided funding, oversight, and evaluation services to the LEAs. See Table 2 below for a list of required and permissible GEAR UP services provided to students and parents as required by the United States Department of Education under the Higher Education Opportunity Act (HEOA). Student and parent service

definitions, as defined by GEAR UP North Carolina for this project, are included in Appendix A. GEAR UP North Carolina served over 16,000 students in 9th through 12th grade during the 2010-11 academic year. This study examined the 3,270 graduates from the 2010-11 high school class.

Table 2

GEAR UP Student and Parent Services

| GEAR UP Student Services | GEAR UP Parent Services |
|--|---|
| 1) Tutoring/homework assistance/academic enrichment | 1) Workshops on college preparation/financial aid |
| 2) Computer assisted lab | 2) Counseling/advising |
| 3) Comprehensive mentoring | 3) College visits |
| 4) Counseling/advising/academic planning/career counseling | 4) Family events |
| 5) College visits/college student shadowing | |
| 6) Job site visit/job shadowing | |
| 7) Summer programs | |
| 8) Educational field trips | |
| 9) Workshops | |
| 10) Family events | |
| 11) Cultural events | |

GEAR UP North Carolina is based on a grade cohort approach. The cohort or whole-grade model involves providing services to all students in the participating grade levels, rather than a select group of students. By law, a cohort must start no later than the 7th grade, and services must be provided to the students in the cohort through the 12th grade. Each cohort must include either: (1) all of the students in a particular grade level at a participating school that has a 7th grade and in which at least 50 percent of the students are eligible for free or reduced-price lunch under the Richard B. Russell National School Lunch Act; or (2) all of the students in a particular grade level who reside in public housing, as defined in section 3(b) (1) of the United States Housing Act of 1937. GEAR UP North Carolina served students under the cohort model in schools meeting the free and reduced lunch requirement. Under this model, students in this study could have received services for six years from 7th to 12th grade. Students had to be in a target grade to be served by the program.

The program began with all 7th graders in participating middle schools in 2005. The goal of the program was to serve all students within the participating grades. Each year, the program continued to serve all the students served during previous years as well as adding an additional 7th grade cohort. Therefore, 7th graders were served in the 2005-06 academic year. Seventh and eighth graders were served during 2006-07, and seventh, eighth, and ninth graders were served during 2007-08. Seventh, eighth, ninth, and tenth graders were served during 2008-09. No additional seventh grade cohorts were added after 2008-09 and the four cohorts of students continued to be served through the 2010-11 academic year in which the students were 9th, 10th, 11th, and 12th graders. In August 2011, federal funding expired.

Simultaneously, the first group of students graduated from high school and enrolled in postsecondary education programs.

Grades served by year are, therefore, as follows:

| | |
|---------|---|
| 2005-06 | 7 th grade |
| 2006-07 | 7 th and 8 th grades |
| 2007-08 | 7 th , 8 th , and 9 th grades |
| 2008-09 | 7 th , 8 th , 9 th , and 10 th grades |
| 2009-10 | 8 th , 9 th , 10 th , and 11 th grades |
| 2010-11 | 9 th , 10 th , 11 th , and 12 th grades |

Postsecondary enrollment, the outcome that GEAR UP funding and strategic services aim to achieve, could not be observed until 2011 at the conclusion of the program. While formative data-driven measures were in place to guide local district programming throughout the six-year grant project, this timing of the desired outcome, at the close of the project prevented the ability to improve and refine services based on summative evaluation results. Thus, this research aims to provide college access programs, including GEAR UP programs, with an analysis of how services provided to students and parents impact college enrollment.

College Access Literature

The world is changing and the United States is no longer the leader in many areas, including higher education. Thus, there is a great need to make changes during the 21st century to put this country back in the ranks it once enjoyed (Friedman, 2005). Analysts project that by the year 2018, 62% of jobs will require some form of postsecondary training and that at least 50% of jobs will require a formal postsecondary degree (Carnevale, Smith,

Strohl, 2010). Underserved populations including at-risk, low-income, and first-generation students are a group toward which the federal government has turned resources in order to assist the United States in regaining the lead in higher education attainment. Additional funding for disadvantaged LEAs has been found to close the gap between school districts with differing socioeconomic statuses (Henry, Fortner, Thompson, 2010). Roderick, Nagaoka, Coca, & Moeller (2008) found that students who are strategically matched to a college significantly increase their chances of enrolling and graduating. However, additional research by Bastedo and Jaquette (2011) found that even perfectly matching students to higher education institutions would not close the gap between wealthy and disadvantaged students in their attainment of a college degree. Even with differing research findings, college access programs need to continue to focus on accountability of student success, data-driven programmatic decisions, and policy changes to better assist underserved students (U.S. Department of Education, 2011a).

While there are numerous barriers for working class families to complete secondary education and obtain higher education degrees, many of these barriers fall outside of the quantifiable measurable barriers such as academic preparation, advanced placement coursework, and high standardized assessment scores (National Center for Education Statistics [NCES], 2001). These additional resources students need to succeed in postsecondary institutions are often referred to as social capital; the social inequality and an individual's negotiating space are the harder to define aspects in the literature.

In *The Forms of Capital* (1986) Pierre Bourdieu distinguishes between three forms of capital or available resources: economic capital, cultural capital, and social capital. Literature on college access indicates that social capital is an unquantifiable and non-cognitive, but critical, aspect of success for low-income, underrepresented, and underserved students seeking access to higher education (Bourdieu, 1986). Bourdieu (1986) defines social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 249). In essence, Bourdieu (1986) means "a network of connections" (p. 250). Social capital thus becomes a very important piece of information in the discussion of getting low-income, working class, and traditionally underrepresented students into college. Bourdieu's work is grounded in examining social class position and the associated outcomes (Lareau, 2003).

While policies at both the federal and state levels assess college readiness through academic preparation, there is an often overlooked and less measureable area that can lead to student failure for low-income working class students, even if those students perform well academically (McDonough, 1997; Sommerfeld, 2011). That area is the high cost and lack of knowledge regarding how to navigate the financial aid application process (National Center for Education Statistics [NCES], 1998). When viewing access to college through a sociological lens, McDonough (1997) illustrates that low-income students do not have similar access to the information and support needed to effectively navigate even the college and financial aid application process. Even when students have access to such information, the ability to understand, interpret, and employ that information is many times obscured by the cultural and sociological deficits of the family. Thus, before physically stepping on a

college campus, these students have already been marginalized. McDonough (1997) also notes the lack of a supportive adult figure in the lives of first-generation college students. The combined lack of understanding the college application processes and having no parental support at home, even if a student is academically prepared, can lead to missing the necessary steps that should be taken to apply to college. These factors can be a deterrent for students who have the potential to obtain a postsecondary education.

Terenzini, Cabrera, and Bernal (2001) discuss the differences between income and wealth when looking at socioeconomic status of students and their attainment of higher education. This difference explained through a social capital lens might account for a family with a provider that works at a factory and makes a good living, money equivalent to that of an educator. While the income is the same, the position of the educator provides access and networks, which is the foundation of social capital. Social capital can provide students with the knowledge to research college deadlines, obtain information on colleges that match their financial resources and academic skills, engage in school, and ultimately enroll in college—services that college access programs such as GEAR UP can provide. Prevailing sociological research shows that low-income first-generation students have real difficulty turning their aspirations into college enrollment, even if they are in good academic standing (DiMaggio, 1982; Lareau, 1987; McDonough, 1997). Many times it is not the lack of money to attend college, but the lack of navigating the Free Application for Federal Student Aid (FAFSA) and having an understanding of the breadth of financial aid resources, that is the problem. With the rising cost of college tuition, understanding the barriers to college becomes more important for low-income students as they navigate the financial aid process, including the difference between the cost of 2- and 4-year and public and private institutions. With the

potential of no support person in the home, the reality of having no social capital, no network, and no conceptualization, secondary schools have become the impetus for assisting these working class underrepresented students with the assistance, guidance, and support they need to learn these college access navigation tools.

In addition to the non-cognitive factors that affect students' matriculation into postsecondary settings, the Obama administration is stressing the need for more quantifiable measures to compliment the areas of social capital—this involves moving students from having just college awareness to also possessing college readiness. This combination of knowledge and college-ready skills is seen by stakeholders as the complete package for best assisting students on the path to college.

Since the inception of GEAR UP in 1998, there have been two major evaluations of the program at the national level, both with results that have not spanned the full spectrum of the six- or seven-year GEAR UP program. In 1999, the year after GEAR UP was created, the United States Department of Education contracted with Westat, Inc. to conduct a national evaluation of GEAR UP (U.S. Department of Education, 2003). The two-year evaluation examined services and activities that were provided for students, parents, and teachers in twenty partnership and seven state GEAR UP programs during 2000-01 and 2001-02. However, this evaluation only focused on two-years of the program while students were in middle school. While the outcomes illustrated a descriptive overview of how GEAR UP programs are implemented across the nation, there were no replicable outcomes for future studies. The researchers administered surveys across intervention and comparison schools and found that attending a GEAR UP school was positively associated with both student and

parent knowledge. The study, though, fell short on illustrating the linkages between GEAR UP participation and student educational outcomes.

An additional study by Terenzini, Cabrera, Deil-Amen, and Lambert (2005), funded through the Institute for Education Sciences, also failed to provide a comprehensive analysis of the GEAR UP program. Terenzini, et al. (2005) looked at both students and parents in relation to outcome measures of the group's awareness of and readiness for college. The study looked at GEAR UP Annual Performance Report data, the federally mandated data submitted from all GEAR UP grantees. While positive outcomes were uncovered, particularly in mathematics, this study did not analyze postsecondary enrollment. Postsecondary enrollment is the logical and intended outcome for GEAR UP students; it needs to be studied to examine the effectiveness of the GEAR UP program.

This program evaluation sought to address some of the major gaps in the GEAR UP literature by analyzing a dataset of six-year GEAR UP secondary data to assess the programmatic impacts of postsecondary enrollment. Thus, even from one state GEAR UP grant, GEAR UP policy makers can be informed of how strategic college access programming can impact postsecondary outcomes. A majority of college access research has been conducted by the Chicago Consortium on School Research (CCSR). While the CCSR studies provide a place for this research to build upon, it should be noted that the CCSR studies are all on college access in Chicago, a large, urban school district. Outside of the massive amount of college access research in Chicago, there has yet to be research focusing on the same topics in other regions. This study, however, complimented past findings in Chicago and added to the body of college access literature by examining outcomes in rural LEAs of GEAR UP programs that provide similar services. Additionally, while the CCSR

provides data on various aspects of college access, their data and the literature as a whole lacks GEAR UP quantitative data that is linked across services, academic outcomes, and postsecondary data as verified by a third-party source. This study will attempt to build a conceptual framework for others to use as they conduct future GEAR UP evaluations.

Chapter Three

Methodology

This program evaluation examined relationships between the number of hours of direct student and parent services during the six-year GEAR UP North Carolina grant and students' subsequent enrollment in postsecondary education as verified by third-party data from the National Student Clearinghouse. The National Student Clearinghouse is a non-profit organization serving as a centralized education agent in fulfilling enrollment and achievement reporting needs to governmental, financial, student service, and educational organizations. The National Student Clearinghouse searches a database of records on over 110 million students and maintains these records on behalf of the more than 3,300 colleges and universities, or over 96% of the total enrollment in higher education in the United States. For this study, student names and birthdays were submitted to the National Student Clearinghouse for matching; this type of matching yields a slightly lower matching rate than if using the social security number. The GEAR UP student and family services examined by this program evaluation are mandated by the Higher Education Opportunity Act (HEOA) and reported by grantees annually to the United States Department of Education. These required and permissible services for the GEAR UP program are outlined in Section 404D of the HEOA. Of those required and permissible services, eleven student services and four parent services were examined for this study. Student services included: tutoring/homework assistance/academic enrichment; computer assisted lab; comprehensive mentoring; counseling/advising/academic planning/career counseling; college visits/college student

shadowing; job site visit/job shadowing; summer programs; educational field trips; workshops; family events; and cultural events. Parent services included: workshops on college preparation/financial aid; counseling/advising; college visits; and family events.

The secondary data used in this study were obtained from the North Carolina college preparatory database, which I was instrumental in developing during my tenure working with the GEAR UP North Carolina program from 2005 through 2012. Data are available at the student-level on GEAR UP North Carolina participants, including student and parent services, demographic information, academic data, survey data, and National Student Clearinghouse data. Student and parent service data were coded into the database by GEAR UP coordinators in the schools. Coordinators received extensive training on data entry and data-driven decisions through local, regional, and statewide trainings, as well as continuous technical assistance from the GEAR UP North Carolina research team. Demographic and academic data were obtained directly from the North Carolina Department of Public Instruction through a legal memorandum of agreement; data were then uploaded into the database. This database used a unique student identifier and housed data for longitudinal analyses by linking K-12 data with postsecondary data from the National Student Clearinghouse. Through a legal agreement with the University of North Carolina General Administration, raw data were exported from the database for this study. Data were transformed into one case per student with a dataset that included demographic, academic, student and parent service dosage, college visit data, college application data, and college enrollment data. This study will be the first study of a statewide GEAR UP program to analyze longitudinal GEAR UP service data in relation to postsecondary enrollment data to examine services that impact college enrollment.

Data from the National Student Clearinghouse were coded in two ways for those students indicated as having enrolled in postsecondary education. Of the 2,006 students that were returned with a “Yes” that they had enrolled in postsecondary education, 151 were changed to “Some College” because they were enrolled in college only during high school with no degree attained or they dropped out prior to the end of their first semester. For the purposes of this study, postsecondary enrollment is defined as enrollment in college immediately after high school graduation and continued enrollment through the first semester of college. Students that were enrolled in postsecondary education during high school were also included if they continued enrollment after high school graduation and through the first semester. While literature indicates that postsecondary enrollment is often defined as one year of postsecondary enrollment beyond high school, this study is limited due to the postsecondary enrollment data from the National Student Clearinghouse only being available to the researcher after the first semester of postsecondary enrollment. Thus, data for the study were obtained from students who graduated from high school in 2011 and enrolled in postsecondary education (N=1,855) and those that did not enroll in postsecondary education (N=1,264).

Descriptive statistics provide context of the GEAR UP North Carolina data, including the demographic makeup of the 2010-11 high school graduates. A review and description of postsecondary enrollment data are also provided. Initial bivariate correlations were run on dosage of each student and parent service in relation to gender and race to ascertain if services were administered equally to demographic groups. Correlations between services and gender and ethnicity revealed that services were not offered to students based on gender or ethnicity; thus exploratory analyses were conducted to better understand the dosage of

student and parent service data in relation to postsecondary enrollment data. The exploratory analyses display trimmed means, standard deviations, and confidence intervals around the trimmed means.

The exploratory data analyses showed that several of the service variables were highly skewed in a positive direction. Additionally, there were considerable differences in the intervals of the parent and student service data which were captured in time increments. Therefore, the data were log-transformed to improve normality. Educational studies do not often generate data that are within the statistical requirements of normalcy. This is particularly problematic when there are extreme outliers. In these cases, a log-transformation is often useful (Osborne, 2002). For this study, a \log_{10} transformation was used; a value of 1.0 was added to each value to anchor the distribution, as logs of values less than zero are difficult to interpret (Osborne, 2002). The tables of transformed data shown later, display trimmed means, standard deviations, confidence intervals around the trimmed means, and effect sizes.

Point-biserial correlations were computed on each student and parent service type to examine the relationship of individual services and postsecondary enrollment. Studying the independent effects of the GEAR UP program services in relation to postsecondary outcomes included an examination of service dosage to indicate relationships of those GEAR UP student and parent services and subsequent college enrollment. Additional analyses examined services that are assumed to be predictors of college enrollment.

Analyses were conducted to investigate the service interventions that possibly led to college enrollment and success for GEAR UP North Carolina students. Statistical procedures included the use of logistic regression to evaluate the GEAR UP services that differentiated

between the students who enrolled and those who did not enroll in college. This analysis is appropriate because the dependent variable is a categorical dichotomous variable, i.e., whether students enrolled in college. Logistic regression was chosen because the procedure allows for more variance between groups, unlike discriminant analysis which requires that the population variances and covariances for all independent variables are equal across the dependent variable groups, known as homogeneity of variance-covariance matrices (Spicer, 2004). Logistic regression also uses the criterion of maximum likelihood to determine outcomes, thus allowing for a minimum difference between a case's predicted probability of being in a category and its actual category (Spicer, 2004). The analysis produces log odds that as a result produce the predicted probabilities thus most accurately placing cases in their actual category. Press and Wilson (1987) indicate that logistic regression is a robust analysis for categorical dependent variables, and note that linear discriminate analysis, by contrast, is only applicable when underlying variables are normally distributed and have equal covariance matrices. Logistic regression, on the other hand, does not assume equal variances. Noting that these two statistical procedures employ different assumptions with respect to the distributions of data within groups, logistic regression was determined to be the most appropriate procedure for the analysis.

Additionally, a fidelity index was created for each of the twenty-one participating high schools. While fidelity is usually associated with program implementation, this study linked fidelity of the high schools to meeting objectives that were set forth in the grant proposal. The high schools were assigned a scale score based on how their feeder-middle school and the high school met the grant's measurable objectives. Because the GEAR UP interventions were implemented under the guidance of the stated objectives, this study

examined the fidelity meeting those objectives by the benchmark and time set forth. GEAR UP North Carolina was guided by nine measureable objectives outlined in the grant application and subsumed under the Government Performance and Results Act (GPRA) to annually assess the participating district's growth. Data were reported to each LEA, as well as the United States Department of Education annually on the objectives outlined in Table 3. These data were reported in a qualitative format each year to the United States Department of Education noting that each objective was either "met" or "not met" for the reporting year. As a means to explore the data with more detail, the fidelity index was created to examine the relationship between actually meeting stated objectives and postsecondary enrollment, the stated mission of the federal GEAR UP program. This type of data examination can be explained by understanding data granularity, which is a way to gather depth on the data to be analyzed. Each high school was coded "1" if they met the objective by the benchmark year and "0" if they did not meet the objective by the benchmark year. It was hypothesized that the more objectives a school met, as they were charged to meet them as part of the grant requirements, the greater their fidelity to the program. Therefore, the number codes of "1" and "0" were summed across each high school creating a summative fidelity measure that could range from 1-9.

Two of the objectives were not included in the fidelity index. Objective 3B was removed because the way it was originally written accounted for a review of students who completed a college preparation course of study four years later, i.e., from 9th to 12th grade. Because of the inaccuracy of the data for this variable, and because all students were not taken into consideration, I thought it best to not include it. Also, objective 8A was removed because it measured how many students were invited to the annual FAFSA day event. Since

all GEAR UP North Carolina students were invited to the event each year, this objective was removed. It should be noted that objective 8B was included; it measured the number of students who submitted the FAFSA that were low-income as defined by student's eligibility to receive a Pell grant.

Table 3

GEAR UP North Carolina Objectives (2005-2011)

| | |
|---------------------------|--|
| Objective 1 | 65% of 7 th graders in GEAR UP schools will be at grade level for math by June 2009. |
| Objective 2 | 70% of students in GEAR UP schools will be at grade level for Algebra I by June 2011. |
| Objective 3A | 85% of 9 th graders in GEAR UP schools will register for a college preparation course of study in Spring 2007. |
| Objective 3B ^a | 79% of that 9 th grade cohort will complete either the College Technical Preparation or the College Preparation course of study |
| Objective 4 | GEAR UP middle grades students will maintain at least 85% average daily attendance by June 2011. |
| Objective 5 | Graduation rates will increase 5% (from 56.6 to 61.5%) among students scheduled to complete high school in 2011. |
| Objective 6A | 85% of 12 th graders in GEAR UP schools will apply to a postsecondary education institution by 2011. |
| Objective 6B | No less than 65% will enroll within 12 months of graduation. |
| Objective 7 | By 2009, 75% of parents/guardians of GEAR UP middle school students will report that they have sufficient knowledge to assist their children in preparing for college. |

Table 3 (continued)

GEAR UP North Carolina Objectives (2005-2011)

| | |
|---------------------------|---|
| Objective 8A ^b | 100% of students in GEAR UP high schools will be invited to the annual FAFSA Day |
| Objective 8B | 65% of low-income ^c 12 th graders will complete the FAFSA by August 2011. |

Note. ^{ab}These objectives were not included in the fidelity index. ^cLow-income is defined as being eligible to receive the Pell grant.

Through a continuous assessment of what federal policy-makers value for program evaluations, this project adhered to the guidelines given by Shipman (2012). Shipman's (2012) guidelines for large-scale evaluations ensure alignment with federal policy so funding can be leveraged based on outcome data. Other research that serves as a foundation for the methodology was taken from a United States Department of Education study by the Office of Educational Research and Improvement. Horn, Chen, and Adelman (1998) measured the characteristics of at-risk students and their subsequent enrollment in college. Also using secondary data, researchers conducted a logistic regression to assess students' odds of achieving a postsecondary education. While my study enjoyed the benefit of a larger dataset, the methods used for this study's analysis are consistent with the variables that were studied.

This study is the first statewide examination of a GEAR UP program that looks at longitudinal service data in relation to postsecondary enrollment to examine variables that lead to college enrollment. Secondly, this evaluation drilled down to inspect those student or parent services that are predictors of postsecondary enrollment.

Research Questions

Three research questions guided this study:

Research Question 1: Do GEAR UP student or parent services have an overall impact on students' postsecondary enrollment?

Research Question 2: Do specific GEAR UP student or parent services have an impact on students' postsecondary enrollment?

Research Question 3: Are GEAR UP North Carolina objectives a measure of fidelity for a local education agency's postsecondary enrollment rate?

Chapter Four

Results

The purpose of this study was to analyze the summative program and intervention impacts on the 2010-11 graduating seniors who participated in the statewide GEAR UP North Carolina program from 2005 to 2011, which was funded by the United States Department of Education in September 2005. The research questions address postsecondary enrollment of the 2011 high school graduates. Analyses were conducted on the characteristics of those students who enrolled in postsecondary education as well as the impacts that GEAR UP interventions had on postsecondary enrollment. The findings of this study are reported in seven sections: demographic profile of students, postsecondary enrollment results, exploratory data analyses, effects of service dosages on subsequent college enrollment, point-biserial correlation, logistic regression, and a fidelity index for GEAR UP North Carolina objectives.

Demographic Profile of Students

GEAR UP North Carolina was funded through the University of North Carolina General Administration from 2005-2012, with 2012 being a no-cost extension year. The program was guided by student and parent services that are required and permissible under the Higher Education Opportunity Act (HEOA), as well as eight goals and objectives that were specific to the grant under the Government Performance and Results Act (GPRA). The first cohort of students that began receiving GEAR UP services in the 7th grade graduated from high school in spring 2011. Additionally, there were students who joined the original cohort throughout the course of the program; this occurred as the students transferred to

GEAR UP schools, or as they started the 9th grade from a non-feeder middle school. The first cohort of high school graduates were from nineteen LEAs including twenty-one high schools. Two LEAs served two high schools each with the remaining LEA serving only one high school. This study examined data on the 3,270 high school graduates from the class of 2010-11 by studying those students that either continued or had initial enrollment in a postsecondary institution in the fall following high school graduation. The gender and ethnicity data for the 2010-11 graduating seniors are outlined in Tables 4 and 5.

Table 4

Gender of Study Participants

| Variable | N | Percent | Mean | SD |
|----------|------|---------|------|-----|
| Female | 1712 | 52.4% | | |
| Male | 1558 | 47.6% | | |
| Total | 3270 | 100.0% | 1.48 | .50 |

Table 5

Ethnicity of Study Participants

| Variable | N | Percent | Mean | SD |
|------------------|------|---------|------|-----|
| African-American | 44 | 1.3% | | |
| American Indian | 83 | 2.5% | | |
| Asian | 17 | 0.5% | | |
| Caucasian | 1491 | 45.6% | | |
| Hispanic | 308 | 9.4% | | |
| Multi-racial | 1327 | 40.6% | | |
| Total | 3270 | 100.00% | 4.37 | .79 |

Of those 3,270 students, 151 (4.62%) enrolled in some college; 1,855 (56.73%) enrolled in college and were retained through the first semester; and 1,264 (38.65%) did not enroll in college. The 151 students that only received some college were excluded because they were not a meaningful part of population studied. Some college was defined as only enrolling in college during high school with no degree attained or not being retained through the first semester of college.

Data indicated that there were 4.8% more females in the study, but those females had a 12.0% higher enrollment rate than males at postsecondary institutions, 56.0% and 44.0%, respectively. Additionally, ethnicity data indicated that Caucasian students enrolled at the highest rate among the six ethnic categories with an enrollment rate of 49.9%. It should be noted that Caucasians made up the majority of all ethnic backgrounds at 45.6%, followed by

multi-racial students at 40.6%. Gender and ethnicity data in relation to postsecondary enrollment are outlined in Tables 6-7.

Table 6

Gender in Relation to Postsecondary Enrollment

| Variable | Some College (N) | Some College (Percent) | Enrolled (N) | Enrolled (Percent) | Not Enrolled (N) | Not Enrolled (Percent) |
|----------|------------------|------------------------|--------------|--------------------|------------------|------------------------|
| Female | 74 | 49.0% | 1038 | 56.0% | 600 | 47.5% |
| Male | 77 | 51.0% | 817 | 44.0% | 664 | 52.5% |

Table 7

Ethnicity in Relation to Postsecondary Enrollment

| Variable | Some College (N) | Some College (Percent) | Enrolled (N) | Enrolled (Percent) | Not Enrolled (N) | Not Enrolled (Percent) |
|------------------|------------------|------------------------|--------------|--------------------|------------------|------------------------|
| African American | 1 | 0.7% | 27 | 1.5% | 16 | 1.3% |
| American Indian | 4 | 2.6% | 49 | 2.6% | 30 | 2.4% |
| Asian | 3 | 2.0% | 9 | 0.5% | 5 | 0.4% |
| Caucasian | 72 | 47.7% | 926 | 49.9% | 493 | 39.0% |
| Hispanic | 19 | 12.6%% | 106 | 5.7% | 183 | 14.5% |
| Multi-racial | 52 | 34.4% | 738 | 39.8% | 537 | 42.5% |

Postsecondary Enrollment Results

GEAR UP North Carolina outpaced the state in graduation rates at partner high schools during the six-year GEAR UP North Carolina grant. In 2005-06, 65.8% of GEAR UP North Carolina students graduated from high school compared to 76.1% of GEAR UP North Carolina students in the 2010-11 school year (North Carolina Department of Public

Instruction Report Cards, 2005-06 and 2011). These data indicate a 10.3% point increase over six years, compared to the 9.2% increase experienced by the state of North Carolina over the same period.

In addition to successfully increasing the percent of students who graduated from high school, GEAR UP North Carolina schools increased the percent of students who enrolled in college. In the six years in which GEAR UP North Carolina partnered with local education agencies, college enrollment rates increased by almost nine percent, growing from 52.4% in 2006 to 61.3% in 2011. In short, not only has the pool of students eligible to enroll in postsecondary education increased through improved high school graduation rates, but even with that growth, the percent of GEAR UP North Carolina high school students who enrolled in postsecondary education increased. Of those students who enrolled in postsecondary education over 95% (N=1,770) enrolled in a North Carolina institution with 90% (N=1,609) enrolling in a public college or university. As illustrated in Figure 2 below, the majority, 64.4% (N=1,139), of GEAR UP North Carolina students enrolled in the North Carolina Community College System, while 26.6% (N=470) enrolled at one of the University of North Carolina campuses. A smaller percentage of students enrolled in a private postsecondary institution in North Carolina with 8.2% (N=146) enrolling in a private four-year institution and 0.8% (N=15) enrolling in a two-year private institution.

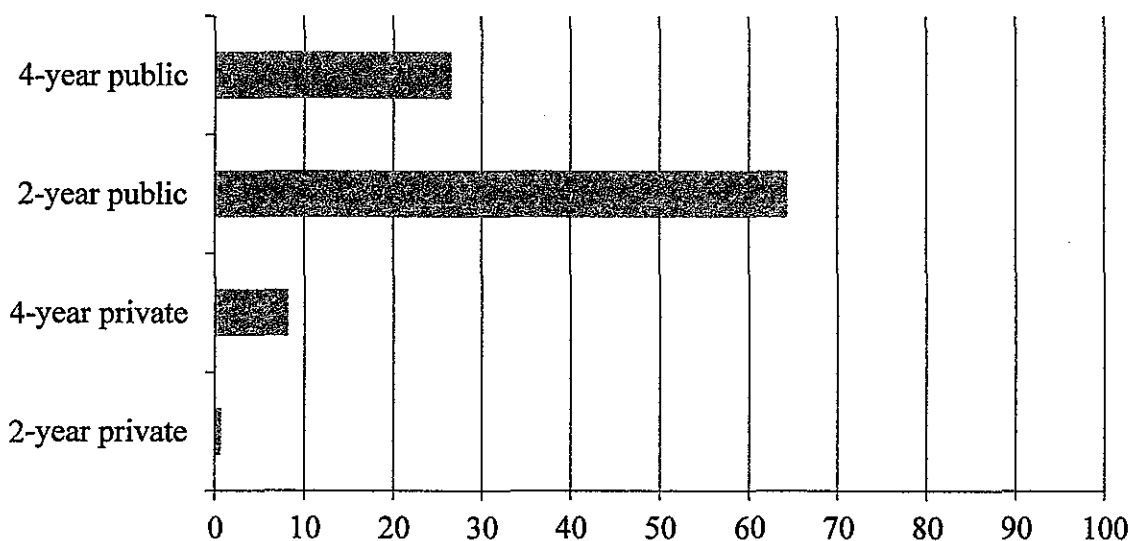


Figure 1. GEAR UP North Carolina Percentage of In-State Types of Postsecondary Enrollment.

Exploratory Data Analyses

Bivariate correlations among gender, race, and service dosage showed no evidence of bias toward gender or race in either student or parent service delivery. Initial, exploratory analyses of the data revealed the measures of service dosage had significant discrepancy from normality; many of these had outliers that contributed to large positive skew. For this reason, two modifications were made to the data. First, to compare service dosages for those students who enrolled in college and those that did not enroll, trimmed (5%) means for each service category, as well as overall student and parent service areas, were computed. This resulted in appreciable reductions in skew as indicated in Tables 10-11. The service dosages were also used in estimating a logistical regression model. Second, since trimmed means could not be used in that analysis, the dosages were transformed using a \log_{10} transformation. This yielded logarithmic dosages that were nearly normal.

Effects of Service Dosages on Subsequent College Enrollment

The effects of service dosage on subsequent college enrollment is shown in Tables 8 through 11, where the trimmed means of student and parent service hours for students who enrolled or did not enroll in college are displayed along with 95% confidence intervals of the trimmed means (Tables 8 and 9) and \log_{10} transformed data (Tables 10 and 11). A perusal of the results displayed in Tables 8 and 9 reveals several dosages where the confidence intervals for the students who enrolled did not overlap the confidence intervals for those students who did not enroll in college. In these instances, the differences between the two groups of students are significantly different. This occurred for the following student services: tutoring/homework assistance; computer assisted lab; comprehensive mentoring; counseling/advising/academic planning/career counseling; college visits/college student shadowing; summer programs; workshops; family events; and cultural events, as well as the following parent services: counseling/advising; and family events.

Notable are the effect sizes that were calculated on the logarithmic transformed data; these effect sizes were low ranging from .05 to .22 for student services and .00 to .12 for parent services. These effect sizes, while low, indicate the largest impact from counseling/advising/academic planning/career counseling for student services and family events for parent services. Tables 8-9 outline the raw data exploratory analyses of each student and parent service. Tables 10-11 outline the logarithmic transformed data exploratory analyses of each student and parent service.

Table 8

Exploratory Analyses of GEAR UP North Carolina Student Services

| Dosage in Hours of Student Services | Students who enrolled in postsecondary education | | | | Students who did not enroll in postsecondary education | | | |
|---|--|--------|----------|----------|--|--------|----------|----------|
| | Trimmed Mean | SD | Lower CI | Upper CI | Trimmed Mean | SD | Lower CI | Upper CI |
| Tutoring/homework assistance | 17.10 | 144.59 | 14.43 | 19.77 | 11.55 | 100.88 | 9.59 | 13.52 |
| Computer assisted lab | 1.47 | 11.49 | 1.31 | 1.63 | 1.12 | 11.49 | 0.99 | 1.23 |
| Comprehensive mentoring | 1.21 | 10.61 | 1.08 | 1.35 | 0.63 | 12.93 | 0.51 | 0.76 |
| Counseling/advising/academic planning/career counseling | 16.17 | 19.52 | 15.46 | 16.88 | 11.96 | 15.00 | 11.23 | 12.69 |
| College visits/college student shadowing | 10.94 | 20.60 | 10.16 | 11.71 | 6.33 | 15.78 | 5.65 | 7.00 |
| Job site visit/job shadowing | 0.02 | 8.94 | -0.01 | 0.04 | 0.01 | 7.54 | 0.01 | 0.01 |
| Summer programs | 9.30 | 57.37 | 7.90 | 10.70 | 4.37 | 53.15 | 3.22 | 5.45 |
| Educational field trips | 1.12 | 13.24 | 0.97 | 1.27 | 0.88 | 12.84 | 0.72 | 1.04 |
| Workshops | 5.77 | 6.89 | 5.49 | 6.05 | 4.64 | 6.97 | 4.31 | 4.96 |
| Family events | 1.57 | 3.93 | 1.42 | 1.73 | 1.16 | 3.00 | 1.02 | 1.31 |
| Cultural events | 1.95 | 19.13 | 1.72 | 2.17 | 1.49 | 11.42 | 1.25 | 1.72 |
| Total Student Services | 83.37 | 169.14 | 77.91 | 88.82 | 58.18 | 123.48 | 53.59 | 62.77 |

Table 9

Exploratory Analyses of GEAR UP North Carolina Parent Services

| Dosage in Hours of Parent Service | Students who enrolled in postsecondary education | | | | Students who did not enroll in postsecondary education | | | |
|-----------------------------------|--|-------|----------|----------|--|------|----------|----------|
| | Trimmed Mean | SD | Lower CI | Upper CI | Trimmed Mean | SD | Lower CI | Upper CI |
| Workshops | 1.12 | 4.18 | 0.97 | 1.27 | 0.84 | 5.60 | 0.65 | 1.04 |
| Counseling/advising | 0.47 | 32.83 | 0.40 | 0.55 | 0.32 | 2.68 | 0.25 | 0.38 |
| College visits | 0.01 | 3.09 | 0.01 | 0.01 | 0.01 | 2.23 | 0.01 | 0.01 |
| Family Events | 1.60 | 2.76 | 1.48 | 1.72 | 1.15 | 2.83 | 1.02 | 1.29 |
| Total Parent Services | 5.91 | 6.77 | 5.57 | 6.24 | 5.54 | 7.03 | 5.14 | 5.94 |

Table 10

Logarithmic Transformation Analyses of GEAR UP North Carolina Student Services

| Student Service | Students who enrolled in postsecondary education | | | | Students who did not enroll in postsecondary education | | | | Effect Size |
|--|---|-----|-------------|-------------|---|-----|-------------|-------------|----------------|
| | Trimmed Mean | SD | Lower CI | Upper CI | Trimmed Mean | SD | Lower CI | Upper CI | |
| Tutoring/homework assistance | .75 | .76 | .72 | .79 | .64 | .72 | .66 | .60 | .68 |
| Computer assisted lab | .27 | .39 | .25 | .29 | .22 | .35 | .20 | .24 | .08 |
| Comprehensive mentoring | .21 | .40 | .19 | .23 | .13 | .35 | .11 | .14 | .14 |
| Counseling/advising/academic planning/career counseling | 1.11 | .43 | 1.09 | 1.13 | .95 | .48 | .92 | .98 | .22 |
| College visits/college student shadowing | .75 | .64 | .71 | .77 | .53 | .60 | .49 | .56 | .21 |
| Job site visit/job shadowing | .01 | .19 | -.01 | .01 | .01 | .14 | .01 | .01 | .00 |
| Summer programs | .36 | .74 | .32 | .39 | .22 | .63 | .18 | .25 | .12 |
| Educational field trips | .17 | .41 | .16 | .19 | .14 | .38 | .12 | .16 | .05 |
| Workshops | .70 | .41 | .68 | .72 | .61 | .42 | .58 | .63 | .14 |
| Family events | .26 | .38 | .25 | .28 | .21 | .35 | .19 | .23 | .08 |

Table 10 (continued)

Logarithmic Transformation Analyses of GEAR UP North Carolina Student Services

| Student Service | Students who enrolled in postsecondary education | | | | Students who did not enroll in postsecondary education | | | | Effect Size |
|------------------------|---|------|-------------|-------------|---|------|-------------|-------------|----------------|
| | Trimmed Mean | SD | Lower CI | Upper CI | Trimmed Mean | SD | Lower CI | Upper CI | |
| Cultural events | .28 | .48 | .26 | .30 | .23 | .23 | .20 | .25 | .07 |
| Total Student Services | 5.11 | 3.35 | 4.95 | 5.27 | 4.12 | 3.05 | 3.94 | 4.29 | .13 |

Table 11

Logarithmic Transformation Analyses of GEAR UP North Carolina Parent Services

| Parent Service | Students who enrolled in postsecondary education | | | | Students who did not enroll in postsecondary education | | | | Effect Size |
|-----------------------|---|-----|-------------|-------------|---|-----|-------------|-------------|----------------|
| | Trimmed Mean | SD | Lower CI | Upper CI | Trimmed Mean | SD | Lower CI | Upper CI | |
| Workshops | .20 | .35 | .18 | .22 | .14 | .35 | .12 | .16 | .10 |
| Counseling/advising | .10 | .27 | .08 | .11 | .08 | .24 | .06 | .09 | .05 |
| College visits | .01 | .16 | .01 | .01 | .01 | .09 | .01 | .01 | .00 |
| Family events | .29 | .35 | .28 | .31 | .22 | .33 | .20 | .24 | .12 |
| Total Parent Services | .64 | .76 | .60 | .67 | .47 | .69 | .43 | .51 | .14 |

Point-Biserial Correlations between Service Dosage and Postsecondary Enrollment

Point-biserial correlations were computed between \log_{10} transformed hours of student and parent services and postsecondary enrollment as a dichotomous variable (yes or no). These are displayed in Table 10 for student services and Table 11 for parent services. Both correlations, while small, were statistically significant. The correlation between total student service and postsecondary enrollment was found to be statistically significant, $r_{(3118)} = .15, p < .01$. The correlation between total parent service and postsecondary enrollment was also found to be statistically significant, $r_{(3118)} = .11, p < .01$.

Correlations between postsecondary enrollment and individual student services ranged from .05 to .17 for the eleven student services, all of which were statistically significant. Correlations between postsecondary enrollment and individual parent services ranged from .04 to .11 for the four parent services, all of which, were statistically significant.

Table 12

Point-Biserial Correlations between Hours of Student Service and Postsecondary Enrollment^a

| Variable | N | Mean | SD | df | r_{pb} | p |
|---|------|------|-----|------|----------|--------|
| Tutoring/homework assistance | 3119 | .76 | .75 | 3118 | .07 | .001** |
| Computer assisted lab | 3119 | .29 | .38 | 3118 | .07 | .001** |
| Comprehensive mentoring | 3119 | .23 | .38 | 3118 | .10 | .001** |
| Counseling/advising/academic planning/career counseling | 3119 | 1.03 | .46 | 3118 | .17 | .001** |
| College visits/college student shadowing | 3119 | .68 | .64 | 3118 | .16 | .001** |
| Job site visit/job shadowing | 3119 | .04 | .17 | 3118 | .05 | .007** |
| Summer programs | 3119 | .38 | .70 | 3118 | .09 | .001** |
| Educational field trips | 3119 | .21 | .40 | 3118 | .04 | .030* |
| Workshops | 3119 | .67 | .41 | 3118 | .10 | .001** |
| Family events | 3119 | .27 | .37 | 3118 | .07 | .001** |
| Cultural events | 3119 | .31 | .46 | 3118 | .07 | .001** |
| Total Student Services | 3119 | 4.9 | 3.3 | 3118 | .15 | .001** |
| Postsecondary Enrollment | 3119 | .59 | .49 | | | |

Note: ^aThe student service data correlated were the \log_{10} transformed hours of service.

Table 13

Point-Biserial Correlations between Hours of Parent Service and Postsecondary Enrollment^a

| Variable | N | Mean | SD | Df | r_{pb} Value | p Value |
|--------------------------|------|------|-----|------|----------------|-----------|
| Workshops | 3119 | .21 | .35 | 3118 | .08 | .001** |
| Counseling/advising | 3119 | .12 | .26 | 3118 | .04 | .024* |
| College visits | 3119 | .02 | .14 | 3118 | .07 | .001** |
| Family events | 3119 | .29 | .34 | 3118 | .10 | .001** |
| Total Parent Services | 3119 | .66 | .74 | 3118 | .11 | .001** |
| Postsecondary Enrollment | 3119 | .59 | .49 | | | |

Note: ^aThe parent service data correlated were the \log_{10} transformed hours of service.

Logistic Regression

Six logistic regressions were conducted to determine the predictive ability of student services, parent services, demographic variables, and academic variables on postsecondary enrollment outcomes. The six logistic regressions, outlined in Tables 14-19, included the following predictor variables: 1) total student and parent services; 2) individual student services; 3) re-examined individual student services of significant predictors; 4) individual parent services; 5) re-examined individual parent services of significant predictors; and 6) academic and demographic variables. These academic and demographic variables include cumulative weighted GPA, course of study (college preparation course of study or not a college preparation course of study), gender, and race (Caucasian or Non-Caucasian). The last logistic regression removed four cases because four students had missing data for the GPA variable. Course of study and ethnicity variables were recoded into binary variables so that data in each category were equivalent.

Odds ratios are reported as part of the logistic regression results. These odds ratios serve as a measure of achieving a particular outcome—for this study that is enrolling in postsecondary education. Odds ratios are not the same as the ratio of percentage (Horn, Chen, & Aldelman, 1998). For example, odds ratio may show that an outcome is twice as likely to occur for a given predictor variable than without the presence of that variable, but that does not mean that students would be twice as likely to enroll in postsecondary education. The odds need to be converted back to probabilities for meaningful comparisons (Grimes & Schulz, 2008). Since the students that enrolled in “some college” were removed from the advanced analyses in this study, the percent of students that enrolled in college was 59.5%, for odds of 1.47.

In addition to the odds ratios and probabilities, results for each logistic regression indicated the percentage of correctly predicted cases in relation to the overall subject pool. These results are outlined in Table 20-22.

Relationship between Overall Student and Parent Services and Postsecondary

Enrollment

The first logistic regression model was developed to determine the impact of overall student and parent services in relation to students’ postsecondary enrollment. In this model, the predictor variables included total student service dosage and total parent service dosage on the \log_{10} transformed data. The outcome variable was postsecondary enrollment. Results of the logistic regression indicated that overall student services, but not overall parent services, were a predictor of postsecondary enrollment. This model predicted 3% of the variance. Results also indicated that 61.7% of the students who received higher than average dosages of student services enrolled in postsecondary education as compared to the overall rate of 59.5% of the subject pool. The model predicted 61.0% of those students that enrolled in postsecondary

education correctly. Table 14 outlines the logistic regression results between overall student and parent services and postsecondary enrollment.

Table 14

Logistic Regression Analysis by Total Student and Parent Service Dosage^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|--------------------------------|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Total Service Variables | | | | | | | |
| Constant | -.07 | .07 | 1.09 | .933 | .297 | | |
| Total Student Services Dosage | .09 | .02 | 31.76 | 1.096 | .001** | 1.06 | 1.13 |
| Total Parent Service Dosage | .03 | .07 | .14 | 1.028 | .704 | .89 | 1.18 |
| <i>df</i> | 1 | | | | | | |

Note: ^aThe service data analyzed were the log₁₀ transformed hours of service.
Dependent Variable was Postsecondary Enrollment

Relationship between Individual Student Services and Postsecondary Enrollment

The second and third logistic regression models were developed to determine the impact of individual student services in relation to students' postsecondary enrollment. In the original model, the predictor variables included each of the eleven student service dosages on the \log_{10} transformed data. The outcome variable was postsecondary enrollment. Results of the logistic regression indicated that four of the individual services were predictors of postsecondary enrollment, however two student services were negatively related to postsecondary enrollment indicating that those services had a suppressor effect on postsecondary enrollment. A re-examination of the data was conducted on the four significant predictors for further analysis. The re-examined model accounted for 5% of the variance predicted 61.7% of those students that enrolled in postsecondary education correctly. This prediction is outlined in Table 21.

The two services that had a positive impact on postsecondary enrollment were counseling/advising/academic planning/career counseling and college visits/college student shadowing. The odds of students attending college who participated in counseling/advising/academic planning/career counseling were more than two times as high as those students who did not participate in the service. Likewise, the odds of students attending college who participated in college visits were more than one and a half times as high as those students who did not participate in college visits. Results of these odds ratios indicated 75.37% of the students who received higher than average dosages of counseling/advising/academic planning/career counseling enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results also indicated that 69.23% of the students who received higher than average dosages of college visits enrolled in postsecondary education as compared to the overall rate of 59.5% of the subject pool.

The two services that had a suppressor effect on postsecondary enrollment were family events and cultural events, indicating that students who received higher dosages of these services were less likely to enroll in postsecondary education. Results of these odds ratios indicated that 50.25% of the students who received higher than average dosages of family events enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results also indicated that 54.34% of the students who received higher than average dosages of cultural events enrolled in postsecondary education as compared to the overall rate of 59.5% of the subject pool.

Table 15 outlines the logistic regression results between individual student services and postsecondary enrollment. Table 16 outlines the re-examined logistic regression results between the individual student services that were significant predictors of postsecondary enrollment.

Table 15

Logistic Regression Analysis by Individual Student Services^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|---|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Individual Student Service Variables | | | | | | | |
| Constant | -.50 | .11 | 21.20 | .604 | .001** | | |
| Tutoring/homework assistance | -.11 | .06 | 2.98 | .897 | .084 | .80 | 1.02 |
| Computer assisted lab | .06 | .12 | .27 | 1.062 | .603 | .85 | 1.34 |
| Comprehensive mentoring | .20 | .13 | 2.29 | 1.220 | .130 | .94 | 1.58 |
| Counseling/advising/academic planning/career counseling | .73 | .12 | 38.66 | 2.067 | .001** | 1.64 | 2.60 |
| College visits/college student shadowing | .41 | .08 | 25.75 | 1.506 | .001** | 1.29 | 1.76 |
| Job site visit/job shadowing | .01 | .24 | .01 | 1.008 | .973 | .63 | 1.62 |
| Summer programs | .05 | .06 | .52 | 1.047 | .470 | .92 | 1.19 |

Table 15 (continued)

Logistic Regression Analysis by Individual Student Services^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|-------------------------|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Educational field trips | -.01 | .10 | .02 | .987 | .899 | .81 | 1.20 |
| Workshops | .12 | .12 | 1.14 | 1.132 | .285 | .90 | 1.42 |
| Family events | -.41 | .14 | 8.30 | .666 | .004** | .51 | .88 |
| Cultural events | -.30 | .11 | 21.20 | .742 | .008** | .60 | .92 |
| <i>df</i> | 1 | | | | | | |

Note: ^aThe student service data analyzed were the log₁₀ transformed hours of service.
Dependent Variable was Postsecondary Enrollment

Table 16

Re-examined Logistic Regression Analysis by Individual Student Services^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|--|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Individual Parent Service Variables | | | | | | | |
| Constant | -.48 | .10 | 24.37 | .617 | .001** | | |
| Counseling/advising/academic planning/career counseling | .73 | .11 | 42.44 | 2.080 | .001** | 1.67 | 2.52 |
| College visits/college student shadowing | .43 | .07 | 33.39 | 1.534 | .001** | 1.33 | 1.77 |
| Family events | -.37 | .14 | 7.63 | .688 | .006** | .53 | .90 |
| Cultural events | -.48 | .10 | 4.22 | .808 | .040* | .66 | .99 |
| <i>df</i> | 1 | | | | | | |

Note: ^aThe student service data analyzed were the log₁₀ transformed hours of service.
Dependent Variable was Postsecondary Enrollment

Relationship between Individual Parent Services and Postsecondary Enrollment

The fourth and fifth logistic regression models were developed to determine the impact of individual parent services in relation to students' postsecondary enrollment. In the original model, the predictor variables included each of the four parent service dosages on the \log_{10} transformed data. The outcome variable was postsecondary enrollment. Results of the logistic regression indicated that three of the individual services were predictors of postsecondary enrollment. A re-examination of the data was conducted on the three significant predictors for further analysis. The re-examined models accounted for 2% of the variance and predicted 59.5% of those students that enrolled in postsecondary education correctly as outlined in Table 22.

The three parental services that had a positive impact on postsecondary enrollment were workshops, college visits, and family events. The odds of students attending college whose parents participated in college visits were almost three times as high as those students who did not have their parents participate in college visits. The odds of students attending college whose parents participated in workshops were over one and a half times as high as those students who did not have their parents participate in a workshop. While family events were a significant predictor of postsecondary enrollment, the odds ratio was not much higher than one, indicating that service was not as impactful as parental college visits and workshops. Results of these odds ratios indicated that 67.53% of the students whose parents received higher than average dosages of workshops enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results indicated that 80.54% of the students whose parents received higher than average dosages of college visits enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results also indicated that 70.67% of the students

whose parents received higher than average dosages of family events enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool.

Table 17 outlines the logistic regression results between individual parent services and postsecondary enrollment. Table 18 outlines the re-examined logistic regression results between the individual parent services that were significant predictors of postsecondary enrollment.

Table 17

Logistic Regression Analysis by Individual Parent Services^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|--|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Individual Parent Service Variables | | | | | | | |
| Constant | .15 | .05 | 9.40 | 1.167 | .002** | | |
| Workshops | .44 | .13 | 11.46 | 1.557 | .001** | 1.21 | 2.01 |
| Counseling/advising | -.24 | .18 | 1.69 | .789 | .193 | .55 | 1.13 |
| College visits | 1.04 | .34 | 9.62 | 2.822 | .002** | 1.47 | 5.44 |
| Family events | .53 | .11 | 21.61 | 1.167 | .001** | 1.36 | 2.12 |
| <i>df</i> | 1 | | | | | | |

Note: ^aThe parent service data analyzed were the log₁₀ transformed hours of service.
Dependent Variable was Postsecondary Enrollment

Table 18

Re-examined Logistic Regression Analysis by Individual Parent Services^a

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>p</i> | 95% CI for <i>Exp(B)</i> | |
|--|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Individual Parent Service Variables | | | | | | | |
| Constant | .15 | .05 | 9.39 | 1.167 | .002** | | |
| Workshops | .35 | .11 | 10.32 | 1.417 | .001** | 1.15 | 1.75 |
| College visits | 1.04 | .34 | 9.57 | 2.816 | .001** | 1.46 | 5.43 |
| Family events | .15 | .11 | 20.01 | 1.641 | .002** | 1.32 | 2.04 |
| <i>df</i> | 1 | | | | | | |

Note: ^aThe parent service data analyzed were the log₁₀ transformed hours of service.
Dependent Variable was Postsecondary Enrollment

Relationship between Academic and Demographic Variables and Postsecondary

Enrollment

The final logistic regression model was developed to determine the impact of academic and demographic variables in relation to students' postsecondary enrollment. These ancillary data were analyzed to assess further predictors of college enrollment. In this model, the predictor variables included each cumulative weighted GPA, course of study (college preparatory or not college preparatory), gender, and race (Caucasian or non-Caucasian). The outcome variable was postsecondary enrollment. Results of the logistic regression indicated that cumulative weighted GPA, course of study, and gender were predictors of postsecondary enrollment. The model accounted for 17.5% of the variance and predicted 66.6% of those students that enrolled in postsecondary education correctly.

The two academic indicators that had a positive impact on postsecondary enrollment were cumulative weighted GPA and course of study, and the demographic predictor was gender. The odds of students attending college who had a higher cumulative weighted GPA was over two times as high as those students who had a lower than average GPA. While course of study and gender were a significant predictor of postsecondary enrollment, the odds ratios were not much higher than one, indicating that these were not as impactful as GPA. Results of these odds ratios indicated that 77.06 of the students who had a higher than average cumulative weighted GPA enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results indicated that 66.22% of the students who were not enrolled in a college preparatory course of study enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool. Results indicated that 63.50% of males enrolled in postsecondary education as compared to the overall rate of 59.50% of the subject pool.

Table 19 outlines the logistic regression results between academic and demographic variables and postsecondary enrollment.

Table 19

Logistic Regression Analysis by Academic and Demographic Variables

| Predictor | <i>B</i> | <i>SE</i> | <i>Wald</i> | <i>Exp(B)</i> | <i>P</i> | 95% CI for <i>Exp(B)</i> | |
|--|----------|-----------|-------------|---------------|----------|-----------------------------|--------------|
| | | | | | | <i>Lower</i> | <i>Upper</i> |
| Individual Parent Service Variables | | | | | | | |
| Constant | -2.08 | .13 | 242.46 | .125 | .001** | | |
| Cumulative Weighted GPA | .83 | .05 | 287.28 | 2.286 | .001** | 2.08 | 2.52 |
| Course of Study | .29 | .08 | 12.82 | 1.333 | .001** | 1.14 | 1.56 |
| Gender | .17 | .08 | 4.65 | 1.186 | .031* | 1.02 | 1.38 |
| Race | -.07 | .09 | .66 | .933 | .417 | .79 | 1.10 |
| <i>df</i> | 1 | | | | | | |

Note: Dependent Variable was Postsecondary Enrollment

Table 20

Percent of Correctly Predicted Cases in Logistic Regression Analyses

| Logistic Regression | Percent of Correctly Predicted Cases |
|------------------------------------|--------------------------------------|
| Overall Services | 61.0% |
| Individual Student Services | 62.6% |
| Re-examined Student Services | 61.7% |
| Individual Parent Services | 59.5% |
| Re-examined Parent Services | 59.5% |
| Academic and Demographic Variables | 66.6% |

Table 21

Percent of Correctly Predicted Cases in Re-examined Student Services Logistic Regression

| Observed | | Predicted | | |
|--------------------------------|-----|--------------------------------|-------|--------------------|
| | | Did student enroll in college? | | Percentage Correct |
| | | No | Yes | |
| Did student enroll in college? | No | 337 | 927 | 26.7% |
| | Yes | 268 | 1,587 | 85.6% |
| Overall Percentage | | | | 61.7% |

Table 22

Percent of Correctly Predicted Cases in Re-examined Parent Services Logistic Regression

| Observed | | Predicted | | |
|--------------------------------|-----|--------------------------------|-------|--------------------|
| | | Did student enroll in college? | | Percentage Correct |
| | | No | Yes | |
| Did student enroll in college? | No | 0 | 1,264 | 0 |
| | Yes | 0 | 1,855 | 100.0% |
| Overall Percentage | | | | 59.5% |

Fidelity Index for GEAR UP North Carolina Objectives

GEAR UP North Carolina and each participating LEA were guided by eight grant-specific objectives that were aligned with the national GEAR UP objectives under the GPRA; grant-specific objectives are outlined in Table 3. GEAR UP North Carolina objectives were detailed across schools and the statewide program each year in order to show annual progress. These “GEAR UP North Carolina report cards” provided progress to-date on each objective so LEAs could work toward meeting them individually. Specific student and parent service interventions were put in place to meet the objectives within target schools. To create a quantifiable index across the objectives, a fidelity index was created by assigning a 1 or 0 to each objective depending upon whether or not it was met and then summing across participating high schools to create a fidelity score. As illustrated in Table 24, fidelity indices ranged from two to seven with nine being the highest possible rating.

The correlation between the fidelity indices and postsecondary enrollment was found to be statistically significant, $r_{(20)} = .72, p < .01$. Complete results of the Pearson correlation are given in Table 23.

Table 23

Correlation between the Fidelity Indices and Postsecondary Enrollment

| Variable | N | Mean | SD | df | <i>r</i> | <i>p</i> |
|--------------------------|----|-------|------|----|----------|----------|
| Fidelity Index | 21 | 4.81 | 1.60 | 20 | .72 | .001** |
| Postsecondary Enrollment | 21 | 63.03 | 9.94 | | | |

Table 24

Measurement Fidelity Index for GEAR UP North Carolina Objectives

| Local Education Agency | Measurement Fidelity Index Rating | Postsecondary Enrollment Rate |
|------------------------|--------------------------------------|----------------------------------|
| School 1 | 4 | 57.7 |
| School 2 | 6 | 62.1 |
| School 3 | 7 | 76.1 |
| School 4 | 3 | 58.9 |
| School 5 | 5 | 48.2 |
| School 6 | 4 | 51.5 |
| School 7 | 2 | 57.81 |
| School 8 | 2 | 61.2 |
| School 9 | 6 | 74.0 |
| School 10 | 6 | 67.3 |
| School 11 | 7 | 80.4 |
| School 12 | 3 | 58.3 |
| School 13 | 6 | 67.5 |
| School 14 | 4 | 57.7 |
| School 15 | 5 | 58.0 |
| School 16 | 5 | 67.8 |
| School 17 | 6 | 68.6 |
| School 18 | 7 | 78.9 |
| School 19 | 4 | 45.8 |
| School 20 | 3 | 52.1 |
| School 21 | 6 | 73.8 |

Summary of Results

The overall results indicated that the GEAR UP North Carolina cohort of students studied, those that graduated from high school in 2010-11, enrolled in postsecondary education at a rate of 61.3%, and that 59.5% of those students persisted through their first semester of college. This was an enrollment increase of almost 9% across the span of the six-year grant. Of those students who enrolled in postsecondary education over 95% enrolled in a North Carolina institution with 90% enrolling in a public college or university. The majority, 64.4%, of GEAR UP North Carolina students enrolled in the North Carolina Community College System, while 26.6% enrolled at one of the University of North Carolina campuses. A smaller percentage of students enrolled in a private postsecondary institution in North Carolina with 8.2% enrolling in a private four-year institution and 0.8% enrolling in a two-year private institution.

At the end of the six-year grant cycle, results indicated that student services were a predictor of postsecondary enrollment, with two individual student services having a significant impact on postsecondary enrollment. These were counseling/advising/academic planning/career counseling and college visits. While parent services, unlike student services, as a whole were not a predictor of postsecondary enrollment, three parent services were shown to be predictors of postsecondary enrollment. These parental services included workshops, college, visits, and family events. Academic predictors of college enrollment were cumulative weighted GPA, course of study, and gender. Ethnicity, as defined in the logistic regression as Caucasian or Non-Caucasian, was not shown to be a significant predictor of postsecondary enrollment in this study.

The fidelity indices showed a significant correlation between high schools and their feeder middle schools meeting the grant's specified goals and objectives and postsecondary

enrollment rates. Fidelity indices scores ranged from three to seven, with nine being the highest score possible.

Results from this study were detailed in this chapter and an interpretation was provided. The next section, Chapter Five, includes an overview of the entire study, contains conclusions drawn from the data presented, and policy recommendations for GEAR UP programs. An outline of future research is also included.

Chapter Five

Discussion and Policy Recommendations

Synthesis of the Data

College access is on the forefront of news headlines, legislative funding, and foundation initiatives and the interest only continues to increase. With growing economic disparity and the need to increase an educated workforce, low-income students are a group that is being looked at with keen interest. The question, however, continues—what is the best way to prepare this population for postsecondary and subsequent workforce success? As discussed in previous chapters, the United States Department of Education is funneling large amounts of dollars to states through a variety of college access programs, with GEAR UP serving a greater number of students than any other college access program.

Foundations, too, have strong commitments to supporting college access. Lumina Foundation, for example, has a goal for 2025 that 60% of Americans will have a high-quality postsecondary credential. At the current pace, less than 47% of Americans will have at least an Associate's degree by 2025; that is a gap of 23 million Americans (Lumina Foundation, 2012). The National College Access Network (NCAN), an organized group of college access professionals nationally, is working toward Lumina's 2025 goal as well.

The current Presidential administration also has its own goals for college access and attainment through their 2020 goal. The day after the 2013 Presidential Inauguration, the administration released the College Scorecard, an interactive tool, which provides students and families critical information they need to make smart decisions about where to enroll for higher

education with an emphasis on college affordability (U.S. Department of Education, 2103).

Additionally, President Obama spoke of this mission during his 2013 Inauguration Address with the following statement:

We are true to our creed when a little girl born into the bleakest poverty knows that she has the same chance to succeed as anybody else, because she is an American, she is free, and she is equal, not just in the eyes of God but also in our own. (White House Press Release, 2013)

This type of social justice work is what led me to the field of college access. In doing so, I have had the opportunity to work in a GEAR UP program and have seen the faces of these students and the happiness that occurs when their dreams come true. However, I am aware of the data needed to support such college access programs. Without evidence that these programs work, they will not continue to be funded by the United States Department of Education nor by Foundations that provide resources and support. This study implemented quantitative methodological procedures to examine how one program was working for the first cohort of students served by the GEAR UP North Carolina program which was funded in fiscal year 2005. The following research questions guided this study:

Research Question 1: Do GEAR UP student or parent services have an overall impact on students' postsecondary enrollment?

Research Question 2: Do specific GEAR UP student or parent services have an impact on students' postsecondary enrollment?

Research Question 3: Are GEAR UP North Carolina objectives a measure of fidelity for a local education agency's postsecondary enrollment rate?

In adding to the body of literature started by Westat, Inc. (U.S. Department of Education, 2003) and Terenzini, et al. (2005), this study looked at a complete set of GEAR UP intervention data and found that overall student services had an impact on postsecondary enrollment. While this study did not find that overall parent services had an impact, other research has shown parent involvement in GEAR UP to be a predictor of student success (Stack, 2010). Stack (2010) found that 9th grade GPA and the PLAN Composite Score, a 10th grade ACT assessment, were significantly related to parental involvement. These differential results provide the groundwork and set the stage for other scholars to provide evaluations of GEAR UP and other college access programs to validate key findings.

Also adding to the body of knowledge is a first look at specific GEAR UP student and parent services that showed a significant impact on students' postsecondary enrollment in GEAR UP North Carolina. These predictive services, counseling/advising/academic planning/career counseling and college visits/college student shadowing are services that should be examined to provide further analyses of GEAR UP data. Counseling/advising/academic planning/career counseling typically occur one-on-one or in small groups. College visits for these students are often the first, and sometimes only time, these students have the opportunity to visit a college campus. This unique program service should provide stakeholders validation that college visits are worth the resources it takes to provide these opportunities. It should be noted that GEAR UP North Carolina adhered to strict protocols for defining a college visit including a physical visit to a campus with an official tour by the admission's office. Three of the four parent services were found to be predictors of college enrollment in this study. This indicates that family support is important and meaningful on students' path to college. These parental services included workshops, college visits, and family events—all of which required parents to actively be

involved in GEAR UP. Parental counseling/advising was the only parent service that was not found to be a significant predictor of postsecondary enrollment. This could be explained by the fact that counseling advising was a service where GEAR UP site coordinators were trained to reach out to parents that were not engaged in GEAR UP. There were two student services that indicated that the more of the services students received their chance of enrolling in postsecondary enrollment decreased. These services were family visits and cultural events. Future study of these services is needed to understand the suppressed effect of these two student services. Notably, family events were a suppressor for student services, but a positive predictor for parent services.

Given that the majority of GEAR UP North Carolina students, 64.4%, enrolled in a 2-year public institution, primarily a North Carolina Community College, it would be beneficial if the program allowed follow-up support services with these students. Tinto (2008) found that only one in ten students who entered a public two-year postsecondary institution in the United States graduated with a degree within ten years. He emphasized that the investment in these students' success is extremely critical during the first year of college. Given that after fiscal year 2011 GEAR UP grantees have the option to provide services during the first year of postsecondary enrollment, future GEAR UP students could be supported in ways that the ones from this study could not be assisted. Given this research, and other evidence of the importance of postsecondary services, GEAR UP grantees need to examine better ways to provide support once students enroll in college.

The fidelity index that was created for this study could be a valuable formative tool for GEAR UP grantees nationally. GEAR UP North Carolina has provided “GEAR UP Report Cards” to each LEA annually. These report cards contain quantitative data on schools served, an outline of service data that was provided to meet each objective, and a visual display of the data as compared to the GEAR UP North Carolina aggregate data. This report card, while helpful, could be more beneficial in the future by including in a succinct format the fidelity of meeting objectives each year. The fidelity index could also be an effective reporting tool for the United States Department of Education as GEAR UP grantees report on their Annual Performance Report if they met each of their stated objectives. By creating a scale-score fidelity index, GEAR UP grantees could analyze the relationship between meeting grant objectives and postsecondary enrollment.

Another program evaluation was conducted on the GEAR UP North Carolina program during the mid-point of the six-year grant cycle. That study also created a fidelity index to look at how local education agencies were implementing the key components of GEAR UP. While that fidelity index was not the same as the one constructed during this study, at that time in 2008, there was little evidence to suggest that program fidelity of student outcomes had a relationship with the progress in meeting the GEAR UP goals (McCracken, 2009). This program evaluation adds to the prior study by examining a complete assessment of GEAR UP North Carolina’s objectives.

Policy Recommendations

In 2013, the *New America Foundation* cited GEAR UP as the most promising college access program and advocated for triple federal funding for the program (Burd, Carey, Delisle, Fishman, Holt, Laitinen, and McCann). Burd, et al (2013) also noted that the GEAR UP program had structural flaws and made suggestions for improving the program to increase the success rate of students. In 2013 the *Data Quality Campaign* made several recommendations for using data to connect college and career readiness. Among these were connecting policy and data conversations and linking data across the P-20/workforce spectrum. As they note, “longitudinal data are critical to informing the development, implementation and evaluation of college- and career-ready policies” (Data Quality Campaign, p. 1).

Given the policy implications of large-scale college access data, I have included five policy recommendations drawn from this study that would increase GEAR UP data integrity and reporting nationally. Implementing these recommendations across GEAR UP programs nationally would increase efficiency and effectiveness, and would also allow the program to leverage additional funding from the increased evaluation and reporting processes. These recommendations would allow us to better understand the national impact of the GEAR UP program.

- 1) **Policy Recommendation 1:** Student and parent services should be uniformly and operationally defined for consistency across programs.
- 2) **Policy Recommendation 2:** GEAR UP grantees should create a national longitudinal student-level data tracking system linking K-12 and postsecondary data.

- 3) **Policy Recommendation 3:** GEAR UP grantees should use the National Student Clearinghouse as a third-party validation of postsecondary enrollment, persistence, and graduation data.
- 4) **Policy Recommendation 4:** GEAR UP grantees should consider using a fidelity index to assess the extent to which schools and local education agencies are meeting grant objectives.
- 5) **Policy Recommendation 5:** The United States Department of Education should establish a tracking system for following students beyond the end of the grant.

Future Research and Evaluation

While no study is exhaustive, this one is no exception. The rich dataset that was used to conduct this study and the findings lend themselves to further inquiry. First, further study could provide a deeper examination of the student and parent services that were significant predictors of postsecondary enrollment. This examination could include an analysis of the college visits where students spent time while in GEAR UP. College visits were the most significant predictor for parent services and the second most significant predictor for student services, indicating that college visits play a critical role in GEAR UP students' subsequent postsecondary enrollment. Given that placing students on college campuses during the program is a large part of GEAR UP nationally, an assessment of how well these visits relate to subsequent enrollment will assist the program with strategic decisions about students and how to recruit them for college visits on college campuses. Additionally, the types of postsecondary institutions where students applied should be examined in relation to where those that enrolled ended up studying. When looking at college visits and college applications in relation to postsecondary enrollment, postsecondary

institutions could be categorized into a rubric using selectivity criteria from *Barron's Profiles of American Colleges*.

Second, further examination of those services that were not predictors of postsecondary enrollment is important. In particular, further examination of summer programs that students attended could be beneficial. Because this service is targeted to students' aspirations and abilities, and because this service is an intense learning time for them, further inquiry would be beneficial. GEAR UP North Carolina offers two types of summer programs—a required LEA summer program and a series of college enrichment opportunities located on the campuses of North Carolina colleges each summer. These programs range from a few days to week-long programs and are led by experts on the campuses. These data are not captured in such a way to decipher the two types easily. For future studies, GEAR UP North Carolina could analyze the summer program data more effectively if they entered data to denote the type of summer program.

Third, an investigation of the two student services that were shown to have a suppressed effect on postsecondary enrollment should be studied. Tutoring/homework assistance is also an area that merits further inquiry. GEAR UP spends resources on tutoring/homework assistance, but the service was not found to be a significant predictor of postsecondary enrollment. This could be explained because GEAR UP is providing tutoring to students who are in the most need, thus increasing students' chances of high school graduation, but not for postsecondary enrollment. Additionally, GEAR UP program administrators and site coordinators may benefit from training on how to make better formative data-driven decisions. By reaching out to the students in need with customized tutoring plans by certified tutors in a more systematic manner, students may benefit and be prepared for postsecondary enrollment in increased numbers.

Fourth, because positive results were obtained from the first analysis, a deeper investigation of the GEAR UP North Carolina data could be examined through a multi-level model analysis. A two-level model would allow for student level data to be nested in schools. In addition, a multivariate analysis could be conducted assessing the differences by gender and ethnicity among high school graduates enrolling in college. At the school level variables could include the percentage of free and reduced-price lunch, percentage of advanced college preparatory courses, cohort graduation rate, and average daily attendance. An additional school level variable that would provide a return on investment composite could include a cost-benefit analysis on the amount of GEAR UP dollars spent on students as they participate in the required and permissible services.

Limitations of the Study

As in all studies, this one had limitations which should be addressed. First, due to the large amount of data in the service areas and the variability of how the program was implemented, the data were skewed and had to be transformed in order to prepare for analyses. This resulted in the advanced analyses being conducted on the transformed data. Second, because of the latitude in program implementation for GEAR UP LEAs, this creates difficulty in cross-comparison evaluation. In essence, each LEA was allowed to carryout the program in order to meet the needs of their community. While, this is good to ensure localized and customized service delivery, it makes for a more complex program evaluation.

Conclusions

As I reflect upon this study and my greater knowledge of GEAR UP, I am aware that programs such as GEAR UP benefit by having flexibility in the services they offer to best meet the needs of their communities and LEAs. However, from an evaluation standpoint, there must

be more standardization of GEAR UP definitions, data collection, and reporting to evaluate the program in a meaningful way. I would encourage GEAR UP leaders to think about ways to prepare their programs for national evaluation while still holding onto some, but not all, of the flexibility of the GEAR UP program. Continuous investigation of GEAR UP programs by research and evaluation scholars will not only add to the body of literature, but will also provide leverage for the continued funding of the program. Studies, such as this one, which provide a framework for replication, will be beneficial to the GEAR UP community as they work to increase evidence-based outcomes of the program.

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APPENDIX A

GEAR UP North Carolina Student and Parent Service Definitions

Student Service Definitions

| | |
|--|---|
| Tutoring/homework assistance/academic enrichment | Tutoring: Tutoring in academic subjects (one-on-one, small group). Homework assistance: Completing homework, make-up work due to absences. Academic enrichment: Topical presentations made to students during the academic year, science presentation by university faculty member, Saturday program on poetry writing, special in-class presentations that are sponsored by GEAR UP (could be school-based or afterschool). |
| Computer assisted lab | Computer assisted lab: CFNC workshops, computer-based remediation, Bridges career program, computer skills, online SAT or ACT prep., afterschool computer programs. |
| Comprehensive mentoring | Mentoring: One-on-one, long-term, structured mentoring program like the Governor's One-on-One Program that pairs a student with an older student or adult. |
| Counseling/advising/academic planning/career counseling | Counseling: Meeting with students one-on-one or in a small group to discuss financial aid, FAFSA completion, or financial planning. Also, personal growth issues such as decision making, goal setting, behavior concerns, family issues, home visits. Advising: Providing individual assistance to students on college choices or college planning. Academic planning: Providing individual or small group assistance to students or parents on coursework selection, course of study choices, college major selection, SAT, PSAT, or ACT advising or interpretation of scores, assistance with placement tests. Career counseling: Providing individual or small group assistance to students or parents about career choices, career planning, internships, or career interests. |

Student Service Definitions (continued)

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|---|--|
| College visits/college student shadowing | College visits: A physical visit to a college campus. The primary objective of the event would be to conduct a college visit. Should include an official tour, presentation(s) by admissions, academic departments, athletics, student affairs, residence life, multicultural affairs, and/or other college departments. College student shadowing: A one-on-one experience in which a middle or high school student spends a day on a college campus with an undergraduate student seeing college life for a typical undergraduate. |
| Job site visit/job shadowing | Job site visit: An individual or small group experience in which students visit a place of employment to learn about a specific job or career and the skills/education required. Job shadowing: A one-on-one experience in which a middle or high school student spends time at a work site with an employee, observing and learning about an individual's work. |
| Summer programs | Summer programs: Any GEAR UP enrichment program held during the summer break. Summer programs may include college visits, instruction, tutoring, job shadowing, residential programs, experiential education and/or college planning workshops. Please include all hours in a summer program in this category and provide brief detail about the activities in the event title field. |
| Educational field trips | Educational field trips: Activities that have academic enrichment as a fundamental purpose. Examples would include a science demonstration on a college campus (the purpose of the event was the science demonstration not a college visit); a class trip to attend a science or history museum linked to curriculum; and academic competitions. These events are linked closely to classroom activities. |
| Workshops | Workshops: Examples include classes about financial aid, college choice, paying for college, Kick-off events, assemblies, and awareness programs about the benefits of college. |

Student Service Definitions (continued)

| | |
|------------------------|---|
| Family events | Family events: Could be a Parent College Night, a church-related college planning event, or a GEAR UP sponsored event that includes GEAR UP students and parents/guardians. |
| Cultural events | Cultural events: Events that, as their fundamental purpose, expose students to history, literature, and/or diversity. All cultural events should be pre-approved by Regional Directors and be conducted with non-profit or state/locally run agencies, museums, and organizations. Examples include a non-profit theater production, a concert, a museum visit, or a diversity celebration. All cultural events need to be tied back to curriculum and have an associated lesson plan. Documentation of the curriculum tie and the associated lesson plan should be kept with the coordinator's documentation records. |

Parent Service Definitions

| | |
|---|--|
| Workshops on college preparation/financial aid | Workshops: Examples include classes about financial aid, college choice, GED programs for parents, paying for college, Kick-off events, and awareness programs about the benefits of college. |
| Counseling/advising | Counseling: Meeting with parents one-on-one, long-term, or in small group to discuss personal growth issues such as decision making, goal setting, behavior concerns, family issues, home visits. Advising: Providing individual assistance to parents on college choices, college planning, financial aid planning. |
| College visits | College visits: A physical visit to a college campus. The primary objective of the event would be to conduct a college visit. Should include an official tour, presentation(s) by admissions, academic departments, athletics, student affairs, residence life, multicultural affairs, and/or other college departments. |
| Family events | Family events: Could be a Parent College Night, a church-related college planning event, or a GEAR UP sponsored event that includes GEAR UP students and parents/guardians. |

APPENDIX B**List of Abbreviations**

1. ACT: American College Testing
2. AVID: Advancement Via Individual Determination
3. CCSR: Chicago Consortium on School Research
4. CFNC: College Foundation of North Carolina
5. FAFSA: Free Application for Federal Student Aid
6. GEAR UP: Gaining Early Awareness and Readiness for Undergraduate Programs
7. GPA: Grade Point Average
8. GPRA: Government Performance and Results Act
9. HEA: Higher Education Act
10. HEOA: Higher Education Opportunity Act
11. HEP: Higher Education Programs
12. LEA: Local Education Agency
13. NCAN: National College Access Network
14. NCES: National Center for Education Statistics
15. OECD: Organization for Economic Cooperation and Development
16. OMB: Office of Management and Budget
17. OPE: Office of Postsecondary Education
18. RtT: Race to the Top
19. SSS: Student Support Services
20. STEM: Science, Technology, Engineering, and Mathematics
21. UNC: University of North Carolina
22. UNCGA: University of North Carolina General Administration

APPENDIX C

Memorandum of Agreement

**By and Between the University of North Carolina General Administration,
GEAR UP North Carolina, Appalachian State University, and Christina Y. Tillery**

Memorandum of Agreement

By and Between the University of North Carolina General Administration,
 GEAR UP North Carolina, Appalachian State University,
 and Ms. Christina Y. Tillery

This Agreement is entered into by the University of North Carolina General Administration (UNC GA), GEAR UP North Carolina, Appalachian State University, and Christina Y. Tillery effective on the last date of signing. The University of North Carolina General Administration houses GEAR UP North Carolina, the North Carolina state GEAR UP grant. GEAR UP North Carolina is a comprehensive, statewide partnership, for which UNC GA serves as the administrative and fiscal agent, whose purpose is to significantly increase the number of students who are prepared to enter and succeed in post-secondary education. GEAR UP North Carolina school districts are listed in Appendix A.

This agreement serves to release unidentifiable GEAR UP student level academic and service data to Ms. Christina Tillery for the purpose of doctoral coursework and dissertation research. Any data used for associated doctoral level coursework or dissertation research will require proof of IRB review and approval from the Appalachian State University IRB prior to use by the Director of GEAR UP NC. The collaboration anticipated by this Agreement will result in increasing the body of knowledge for pre-college programming such as GEAR UP. The parties understand activities conducted under this agreement, with respect to sharing student data and records, will be consistent with applicable federal statutes, including the Family Education Records Privacy Act of 1974 collectively ("FERPA") and with applicable state statutes, including N.C. General Statutes 115C-401.1 and 402. FERPA has limited exceptions under which Local Educational Agencies (LEAs) are authorized to release confidential data regarding individual students, teachers, and schools without prior parental consent and to the extent such data may be released, the parties will cooperate. No data will be shared with unauthorized third parties and all data collected will be destroyed when no longer needed.

I. PARTIES. The UNC GA serves as the appointed administrative and fiscal agent for GEAR UP North Carolina. GEAR UP North Carolina has collected student level academic and service data, under individual agreements with each participating Local Education Agency (LEA), for the purpose of program evaluation. Each LEA is subject to FERPA, as authorized by 34 CFR Section 99.31. Ms. Tillery desires to conduct research as a student through her enrollment at Appalachian State University and hopes that one result will be that of improving instruction in North Carolina public schools. The parties wish to share data collected by the LEAs, as appropriate, regarding education in North Carolina.

II. COMPLIANCE WITH State and Federal Records Privacy Laws. To effect the transfer of data subject to FERPA, Ms. Christina Tillery agrees to:

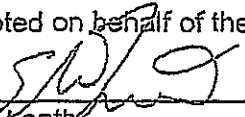
1. In all respects comply with the provisions of FERPA. For purposes of this agreement, "FERPA" includes any amendments or other relevant provisions of federal law and all requirements of Chapter 99 of Title 34 of the Code of Federal Regulations as well as N.C. General Statute 115C-401.1 and 402. Nothing in this agreement may be construed to allow either party to maintain, use, disclose or share student information in a manner not allowed by federal and state law or regulation.


2. Use the data shared under this agreement for no purpose other than doctoral coursework and dissertation research authorized under Section 99.31(a)(6) of Title 34 of the Code of Federal Regulations. Ms. Tillery further agrees not to share data received under this MOA with any other person or entity. Ms. Tillery agrees to allow the Office of the State Auditor, subject to FERPA restrictions, access to data shared under this agreement and any relevant records for purposes of completing authorized audits of the parties.
3. Comply with all applicable provisions of FERPA and other state laws with respect to the data shared under this agreement. Ms. Tillery agrees to require and maintain an appropriate confidentiality agreement pursuant to this agreement. Nothing in this paragraph authorizes sharing data provided under this Agreement with any other entity for any purpose other than completing dissertation research under this Agreement.
4. Maintain all data obtained pursuant to this agreement in a secure computer environment with an appropriate technology control plan, and not copy, reproduce or transmit data obtained pursuant to this agreement except as necessary to fulfill the purpose of the original request. All copies of data of any type, including any modifications or additions to data from any source that contains information regarding individual students, are subject to the provisions of this agreement in the same manner as the original data. The ability to access or maintain data under this agreement shall not under any circumstances transfer to any other institution or entity.
5. Not to disclose any data obtained under this agreement in a manner that could identify an individual student, except as authorized by FERPA, to any other entity. Ms. Tillery may publish results of studies authorized by this agreement, but specifically agrees to abide by the NCDPI "small numbers" policy of deleting all data items that include any group of students less than five (5), and to require all employees, contractors and agents of any kind to also abide by that policy.
6. Not to disclose any data obtained under this agreement in a manner that could identify an individual district, except as authorized by FERPA, to any other entity. Ms. Tillery agrees to discuss districts as numbers and not geographically or by name in any oral or written form.
7. Not to provide any data obtained under this agreement to any party ineligible to receive data protected by FERPA or prohibited from receiving data from any entity by virtue of a finding under Section 99.31(6)(iii) of Title 34, Code of Federal Regulations.
8. Provide to the UNC GA a copy of any articles published, for which the confidential data are being used, and to notify the UNC GA in advance of any new research question(s) regarding such data that researcher proposes to address. This data exchange will be a one-time data exchange. Additional data exchanges will require an amendment to this MOA.
9. Destroy all data obtained under this agreement when it is no longer needed for the purpose for which it was obtained. Nothing in this agreement authorizes either party to maintain data beyond the time period reasonably needed to complete the purpose of the request. All data no longer needed shall be destroyed or returned to the UNC GA in compliance with 34 CFR Section 99.35(b)(2).


- III. DATA REQUESTS. The UNC GA and GEAR UP North Carolina may decline to comply with a request if it determines after consultation with counsel or public hearings (whichever is required) that providing the data requested would be in violation of federal or state law or would not be in the best interest of current or former students in North Carolina public schools. All requests shall include a statement of the purpose for which it is requested and an estimation of the time needed to complete the project for which the data is requested. Data requests may be submitted by post, electronic mail, or facsimile to Melissa Caperton, Director, GEAR UP North Carolina.
- IV. AUTHORIZED REPRESENTATIVE. The UNC GA and GEAR UP North Carolina shall designate a single authorized representative able to provide data under this agreement. Melissa Caperton, Director of GEAR UP North Carolina, is the authorized representative and will be responsible for transmitting all data requests and maintaining a log or other record of all data requested and received pursuant to this agreement, including confirmation of the completion of any projects and the return or destruction data as required by this agreement. The UNC GA or its agents may upon request review the records required to be kept under this section.
- V. RELATED PARTIES. Ms. Christina Tillery represents that she is authorized to bind to the terms of this contract, including confidentiality and destruction or return of student data, all related or associated institutions, individuals, employees or contractors who may have access to the data or may own, lease or control equipment or facilities of any kind where the data is stored, maintained or used in any way. She also represents that she has a dissertation advisor at Appalachian State University who is advising her about access to and use of confidential data. This Agreement takes effect only upon acceptance by authorized representatives of UNC GA and GEAR UP North Carolina. Ms. Tillery agrees to abide by the terms and return or destroy all student data upon completion of the research for which it was intended.
- VI. TERM. This agreement takes effect upon signature by the authorized representative of each party and will remain in effect until December 31, 2014. The parties further understand that the UNC GA and GEAR UP North Carolina may cancel this agreement at any time, upon thirty (30) days written notice. The UNC GA and GEAR UP North Carolina specifically reserves the right to cancel this agreement should they determine that confidential student information has been released in a manner inconsistent with this agreement, or has not been maintained in a secure manner.

Entered into this 9th day of March, 2011.

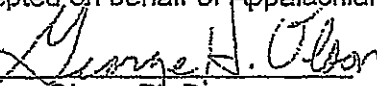
Accepted on behalf of the University of North Carolina General Administration

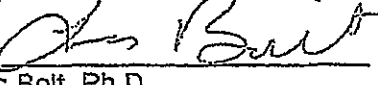
By  Date 4/4/11
 Steve Leath
 Vice President for Research
 UNC General Administration

By  Date 4-4-11
 Karrie Dixon
 Principal Investigator
 GEAR UP North Carolina
 UNC General Administration

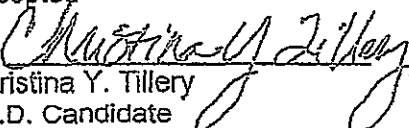
By  Date 3-10-11
 Melissa Caperton
 Director
 GEAR UP North Carolina
 UNC General Administration

Accepted on behalf of Appalachian State University

By  Date 3/29/11
 George Olson, Ph.D.
 Chair, Dissertation Committee for Christina Y. Tillery
 Appalachian State University

By  Date 3/15/11
 Les Bolt, Ph.D.
 Member, Dissertation Committee for Christina Y. Tillery
 Statistic Professor
 Appalachian State University

Accepted

By  Date 03/15/11
 Christina Y. Tillery
 Ed.D. Candidate
 Educational Leadership, Appalachian State University

REVIEWED AS TO FORM:


 UNC Legal Affairs

APPENDIX D

Appalachian State University Institutional Review Board Documentation



INSTITUTIONAL REVIEW BOARD
Office of Research Protections
ASU Box 32068
Boone, NC 28608
828.262.2130
Web site: <http://www.orsp.appstate.edu/protections/irb>
Email: irb@appstate.edu
Federalwide Assurance (FWA) #00001076
IRB Reg. #0001458

To: Christina Tillery

CAMPUS MAIL

From: Jessica Yandow, Office of Research and Sponsored Programs
Date: 11/04/2011
RE: Notice of IRB Exemption
Study #: 12-0097

Study Title: A Summative Evaluation of a Statewide College Access Program
Exemption Category: (1) Normal Educational Practices and Settings

This submission has been reviewed by the IRB Office and was determined to be exempt from further review according to the regulatory category cited above under 45 CFR 46.101(b). Should you change any aspect of the proposal, you must contact the IRB before implementing the changes to make sure the exempt status continues to apply. Otherwise, you do not need to request an annual renewal of IRB approval. Please notify the IRB Office when you have completed the study.

Best wishes with your research!

CC:
George Olson, Leadership And Edu Studies
Leslie Bolt, Leadership And Edu Studies
William Gummerson, Leadership And Edu Studies

Vita

Christina Young Tillery was born in Mooresville, North Carolina on November 18, 1973. She attended elementary school there, and attended high school in Carlyle, Illinois and Troutman, North Carolina, graduating from South Iredell High School in 1992. The following autumn, she entered the University of North Carolina at Wilmington to study psychology. There, she began her research career while working on cognitive brain development research. In December 1996 she was awarded the Bachelor of Arts degree. In June 1999 she began working on educational research at Appalachian State University. Subsequently, she enrolled and completed a Master of Arts degree in Higher Education Administration in May 2004. In June 2010, she enrolled in the doctoral program at Appalachian State University and in May 2013 she earned her Ed.D. degree in Educational Leadership.

Mrs. Tillery spent over ten years conducting research and evaluation on United States Department of Education grants through the University of North Carolina system. While there, she led the research and evaluation of GEAR UP North Carolina and worked on projects with the North Carolina Department of Public Instruction, Lumina Foundation, College Board, Pearson Education, and RTI, International. She currently works at the National Council for Community and Education Partnerships in Washington, D.C. as the Director of Evaluation on a national project, the College and Career Readiness Evaluation Consortium, which is focused on common indicators and evidence-based outcomes of college access programming. Through her work, Ms. Tillery works with the United States Department of Education to ensure college access programs are being evaluated effectively. Ms. Tillery is married to Jason Dent Tillery and has two children, Nathaniel and Grace, ages 8 and 6, respectively.