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Pepperdine University
Graduate School of Education and Psychology

GEAR UP: WHAT DIFFERENCE DOES IT MAKE?

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

by

Jeremy Valentino Villar

May, 2014

Diana Hiatt-Michael, Ed.D. – Dissertation Chairperson

This dissertation, written by

Jeremy Valentino Villar

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

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DEDICATION

I dedicate the culmination of my doctoral journey to:

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- All my teachers at Santuario de San Jose, La Salle Green Hills, De La Salle University, Los Angeles City College, Los Angeles Valley College, California State University, Northridge, and Pepperdine University for making me fall in love with learning. I know it hasn't always been easy, but the completion of this terminal degree serves as a testament that your patience and persistence had indeed paid off.

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And finally to God almighty – for all the blessings you had bestowed upon me, especially the gift of strength and courage that carries me through my life journey.

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ABSTRACT

The public investment in GEAR UP, a federal program that seeks to promote college access and readiness among underserved youths, and limited research on program outcomes substantiated a need to evaluate GEAR UP's impact on youths attending a major urban community college. This study analyzed the archival dataset of Latino community college students ($N = 91$) to determine the impact of GEAR UP on college access and readiness. The treatment group ($N = 47$) consisted of a student cohort who attended a GEAR UP participating secondary schools from 2005 through 2011, and the non-treatment group ($N = 44$) of a similar student demographic cohort who attended the same secondary institutions but not GEAR UP.

The research variables included the English and math placement levels, financial aid application status, and cumulative grade point average of both cohorts. The result of a Pearson Chi Square test ($p = .045$ at 95% confidence level) demonstrated a statistically significant impact of GEAR UP on the financial aid application filing status among Latino youths but not the other variables. Personal interviews ($N = 24$) were conducted from the Treatment Group sample to determine the effectiveness of various interventions activities of GEAR UP. The textual coding analysis of the interview transcripts highlighted the presence of tutors and mentors, field trips, and financial aid workshops as effective interventions in promoting school belongingness and helping Latino youths to consider the benefits of higher education.

The research study conclusions yielded several recommendations to further enhance the quality of GEAR UP. First, policymakers should consider expanding the scope of GEAR UP from financial aid awareness into financial literacy. Second, GEAR

UP school coordinators, teachers, and tutors and mentors should intensify a focus on college readiness, including the development of non-cognitive skills. Other notable recommendations to enhance GEAR UP would be to provide more funding for tutors and mentors, college field trips, and financial aid workshops, improve collaboration and communication between high school and college partners, and the creation of a national database system to track student and program outcomes.

Chapter 1: Problem and Purpose

The amount of evidence to support the finding GEAR UP (“About GEAR UP,” n.d.) (Gaining Early Awareness and Readiness for Undergraduate Programs) has achieved its intended program outcomes has been limited (Haskins & Rouse, 2013). Authorized for funding by the United States Congress in 1998, GEAR UP functioned as an early intervention and college awareness program designed to support students from low socioeconomic status families, including individuals with disabilities, obtain a high school diploma and be prepared to enter and succeed in college academically (20 USC § 1070a–21, 2012). GEAR UP aimed to reduce status dropouts and eliminate the need for remedial education at the postsecondary level.

After 16 years in existence and more than 3.5 billion dollars in public investment, critics have questioned GEAR UP’s effectiveness in being able to deliver its intended program outcomes. Specifically, Haskins and Rouse (2013) asserted the lack of credible research on the effectiveness of GEAR UP to support underserved youths in their pursuit of higher education, including programs available at community colleges. In addition, very little has been known about the impact of the various GEAR UP interventions on student outcomes at the postsecondary level.

Authorized within Title IV of the 1998 Amendments to the Higher Education Act of 1965, GEAR UP seeks to prepare underserved secondary level students for college. The federal government offered GEAR UP funding in the form of competitive grants to states and school district partnerships for the purpose of providing college preparation interventions for underserved youths. The GEAR UP awards were made available to states or partnerships consisting of one or more secondary educational institutions,

community-based organizations, and one or more degree granting institutions of higher education. The typical services offered in GEAR UP programs include tutoring, mentoring, career exploration, college visits, academic counseling, summer bridge courses, and college and financial aid awareness for students and parents.

The U.S. Congress appropriated over \$300 million in annual funding to fund GEAR UP programs, with \$302 million funded in fiscal year 2012 (Bausmith & France, 2012). As with all federally funded programs, each GEAR UP state and partnership projects was required to submit an Annual Performance Report (APR) to document program outcomes. Federal statutes required each entity receiving grant funding to evaluate the activities performed, including the tracking of eligible student progress. For the purpose of evaluating and improving the impact of GEAR UP, the federal government may set aside up to .75% of the appropriated funds for program evaluation and dissemination of results. In their review of federal college-preparation programs, Haskins and Rouse (2013) found only one evaluation that met the Institutional Education Sciences (IES) standard for top-tier evidence without reservations. However, the study found no major effects on college enrollment or completion by the Talent Search program (Constantine, Seftor, Martin, Silva, & Myers, 2006).

Although GEAR UP has been evaluated many times in the past, none of the previous evaluations offered data on college enrollment and completion outcomes (Haskins & Rouse, 2013). A notable study by Bausmith and France (2012) showed encouraging program outcomes by GEAR UP on college readiness. However, Haskins and Rouse (2013) noted that the study results did not show consistency across measures and cohorts, nor did it show evidence to support improvement among a

specific underserved youth population. A recent dissertation study found no significant correlation between participation in pre-college programs and financial aid awareness, academic success, and persistence (Coleman, 2011). Other recent research on GEAR UP either found limited program impact on the intended population or focused mainly on program and intervention outcomes at the secondary level (Beer, Le Blanc, & Miller, 2008; Lozano, Watt, & Huerta, 2009; Morgan, 2012; Smithwick-Rodriguez, 2011; Thornton & Sanchez, 2010; Van Kannel-Ray, Lacefield, & Zeller, 2008). The need to examine the impact of GEAR UP on college access and readiness, particularly among a targeted underserved Hispanic and Latino youth population enrolled at the postsecondary level, seemed well supported by current research literature.

Statement of Problem

The Latino population has experienced a much higher status dropout (Aud et al., 2012) and unemployment rates (U.S. Department of Labor, Bureau of Labor Statistics, 2013) when compared to other demographic groups. Status dropout rate pertains to the percentage of individuals who fall between the ages of 16-24 year olds who are no longer enrolled in school nor have graduated from high school. Although the national status dropout rate declined between 1990 and 2010, Aud et al. (2012) reported that the status dropout rate among Latinos (15%) still lagged behind Blacks (8%), Whites (5%), and Asian/Pacific Islanders (4%). The higher status dropout rate among the Latino population appeared to have a profound effect on their unemployment rate. The correlation between educational attainment and employment seemed more evident when looking at the employment situation in the United States (Boggs, 2011; Brown, 2012).

The U.S. Department of Labor, Bureau of Labor Statistics (2013) reported a much higher unemployment rate among Latinos (9.6%) than Whites (6.9%) and Asians (6.6%). The seasonally adjusted unemployment rate among individuals who had obtained less than a high school diploma (11.7%) showed to be much higher than the rate of individuals who completed a bachelor's degree and higher (3.9%). Even the unemployment rate of individuals who completed a high school diploma (8%) and those who had some college or attained an associate degree (6.9%) were much lower than the rate of non-high school graduates.

In an effort to address the problem of limited college access and economic inequality among underserved youths from low socioeconomic status families, lawmakers had created several federal programs, namely, the TRIO programs (Upward Bound, Talent Search, Upward Bound Math-Science, Student Support Services), AVID, and GEAR UP. Given the higher status dropout and unemployment rates among Latinos and the lack of evidence based study evaluations on the impact of GEAR UP, the need to evaluate the impact of GEAR UP and its interventions on the college readiness, financial aid awareness, and college academic success of Latino youths seemed ripe for further research investigation.

Statement of Purpose

The purpose of this concurrent embedded mixed methods study was to investigate the impact of a GEAR UP partnership project on the college access, readiness, and success of Latino students. A concurrent embedded approach allowed for a single data collection phase, with the quantitative data used to address the problem hypotheses and the qualitative data used to explore the experiences of

individuals in the treatment group with GEAR UP (Creswell, 2009). Using quantitative data, the study applied inferential statistics to compare the impact of GEAR UP on college readiness, access, and academic success on Latino youth population.

Concurrently, the research project explored the effectiveness of the various GEAR UP interventions through qualitative data analysis.

The research project analyzed the impact of GEAR UP on college readiness, access, and academic success (see Figure 1). To investigate the impact of GEAR UP, the investigator identified two groups to compare outcomes based on comparative change model. A comparative change model allowed for the comparison of an entire student cohort within a GEAR UP participating school, controlling for alternative explanations for research findings, such as maturational and or selection effects (CoBro Consulting & RTI International, 2010).

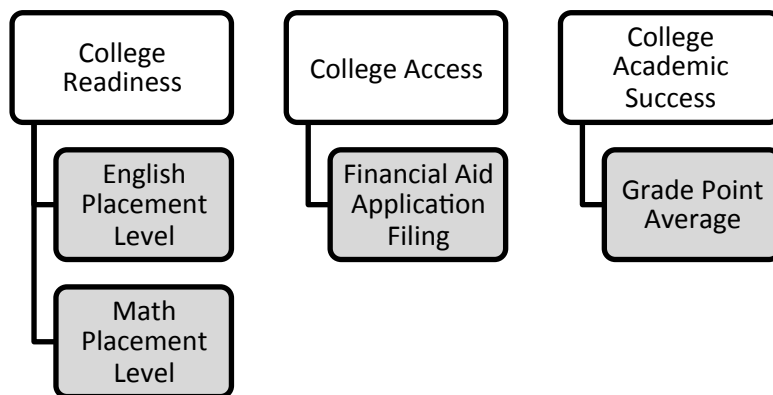


Figure 1. College readiness, access, and success dimensions and corresponding variables.

The treatment group included Latino students who belonged to a GEAR UP cohort at the secondary level prior to enrollment at a community college. The non-treatment or control group included Latino students who graduated from the same high school a year later, but whose cohort was not exposed to GEAR UP. Both treatment

and non-treatment groups enrolled at the same community college upon graduation from high school.

In addition, the research project explored the effectiveness of GEAR UP interventions on Latino youths in terms of how it affected their college aspirations. Given that GEAR UP aimed to reduce both the risk of high school dropouts and the need for remedial education at the postsecondary level, the investigator analyzed the impact of the program on underserved Latino population using college readiness, college access, and college academic success as outcome measures.

Additionally, the research project explored the experiences of the Latino student population with GEAR UP interventions. To investigate the impact of GEAR UP on the identified outcome measures and explore the effectiveness of GEAR UP interventions, the investigator developed four hypotheses and two research questions that guided the direction of the study.

Hypotheses

The following hypotheses determined the impact of GEAR UP on college readiness, college access, and college academic success:

Hypothesis 1. There is no significant difference between treatment and non-treatment on the college English Placement Level among Latino students enrolled at a community college.

Hypothesis 2. There is no significant difference between treatment and non-treatment on the college Math Placement Level among Latino students enrolled at a community college.

Hypothesis 3. There is no significant difference between treatment and non-treatment on the filing of financial aid application among Latino students enrolled at a community college.

Hypothesis 4. There is no significant difference between treatment and non-treatment on college grade point average among Latino students enrolled at a community college.

Research Questions

The following research questions explored the effectiveness of GEAR UP interventions:

1. Which of the following GEAR UP interventions, if any, made an impact to prepare Latino students for college?
 - Tutoring and Mentoring
 - College Field Trips
 - Shadow College Students
 - Jaime Escalante Summer Math Program
 - Career and Technical Education Boot Camps
 - Financial Aid Workshops
 - College Fairs
 - Summer Bridge to College Course
2. How did the participation in GEAR UP Summer Bridge course make an impact, if any, in preparing Latino students for college?

Theoretical Basis

The Conceptual Model of Student College Enrollment (Perna, 2006; see Figure 2) highlights the significant role of context in seeking to understand the individual decision-making process to pursue a college education. Perna (2010) proposed a multi-layered conceptual model of college enrollment based on the review and synthesis of prior literature on financial aid and other forces that influence college access. The model emphasizes that individuals make college decisions based on situated context, meaning individuals may take various paths toward college enrollment based on personal circumstance. For example, taking into account the economic theory of human capital, the model proposes that students make college decisions by considering the lifetime benefits of higher future earnings and cost of a college education.

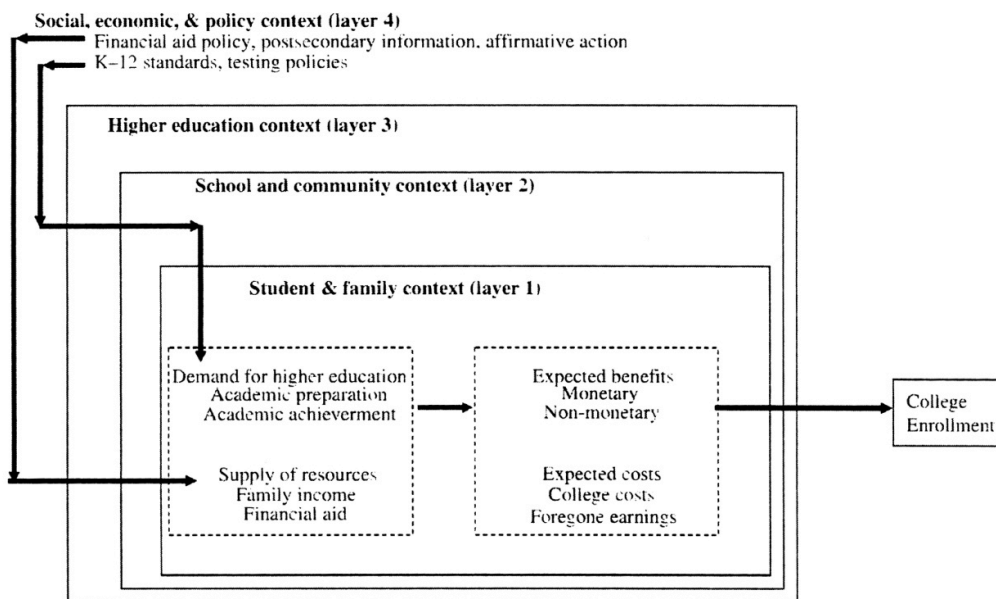


Figure 2. Schematic diagram of Perna's conceptual model. Reprinted from *Studying College Access and Choice: A Proposed Conceptual Model* (pp. 99-157) by L. W. Perna, 2006. Copyright 2006 by Springer. Reprinted with permission.

Within the multiple layers of student and family, school and community, higher education, and social, economic, and policy contexts, the individual will make a decision to pursue a college education. The decision hinges on academic preparation, available resources to fund college, expected long term benefits of a college education, and cost of college, including forgone earnings (Perna, 2010).

Significance of Study

Theoretical significance. A closer examination of the Conceptual Framework for GEAR UP (see Appendix A) and Perna's (2010) Conceptual Model of Student College Enrollment revealed a very similar approach to promoting postsecondary enrollment. Both conceptual models highlight the importance of academic preparation and achievement in creating an environment for students to consider and thrive in college. Both approaches articulate the importance of financial aid awareness among students and parents to increase higher education participation, especially among underserved youths. The findings from this research project validated the components of Perna's Conceptual Model of Student College Enrollment to be a solid theoretical framework for college access programs such as GEAR UP. Furthermore, the outcomes from the research project supported the basic principles of Perna's conceptual model.

Within the context of community college bound Latino students, this research project highlighted factors based in the model that could improve the effectiveness of GEAR UP. The evidence gathered from this study pointed to specific nuances from the conceptual model and framework that educational institutions and organizations should take into consideration in serving the needs of a targeted underserved population. Organizational entities that seek to develop or participate in a college preparation

program, such as GEAR UP, should note these other factors to further enhance the impact of the conceptual model.

Methodological significance. The research project advanced a methodology that program evaluators could apply to determine the impact of GEAR UP. A review of the literature revealed a gap in GEAR UP evaluation, specifically, the lack of evaluation of participant performance at the post-secondary level. Previous GEAR UP evaluations mainly focused on the secondary level, assessing the program's impact on college attitudes, improvements in secondary course level enrollment, or performance in college entrance examinations. As a result, very little was known on how GEAR UP made a difference at the postsecondary level, especially in terms of college readiness, access, and academic success. This research project confirmed the validity of a methodology through the testing of identified variables and factors within a conceptual model.

The mixed methods approach to address the research problem was appropriate because it allowed the investigator to collect two sets of complementary data to address the research problem. Through quantitative analysis of archival data, the research project determined the impact of GEAR UP on underserved students at the postsecondary level. The opportunity to conduct personal interviews on a population sample made it possible to gain valuable insights on the research problem being addressed within the context of the Hispanic and Latino culture.

Practical significance. With more than 3.5 billion taxpayer dollars invested on GEAR UP since program inception, the public should be made aware of whether the program has made a difference in the lives of its target population. This research project added to the growing literature on the effectiveness or ineffectiveness of GEAR

UP. With new insights on the effectiveness of GEAR UP, policymakers and program administrators could make subtle changes to improve the quality of the program. For GEAR UP to receive continued public support for funding, it needs to provide policymakers with hard evidence that the program does prepare and increase college participation among underserved youths.

The completed research project filled a gap in the literature by addressing a wide range of practical problems. By determining the impact of GEAR UP at the community college level, the research project addressed a deficiency in available evidence to support program effectiveness to help underserved youths for college. Based on the results from this study, policymakers and educators gained additional information they can use to enhance the overall effectiveness of GEAR UP.

Definition of Terms

College academic success. Performance based on the attainment of cumulative grade point average while enrolled in college.

College readiness. A complex benchmark that can be measured through academic transcript analysis, standardized test scores, and remedial coursework enrollment (Sparks & Malkus, 2013).

Community college. A regionally accredited institution of higher learning that does not confer bachelor's or higher degrees, but does provide 2-year programs that result in a certificate or an associate's degree or 2-year program that fulfill part of the requirements for a bachelor's degree at 4-year institution (Aud et al., 2012).

Cumulative grade point average. The overall average of the assigned grades on all completed degree applicable credit courses taken towards the attainment of an educational goal.

Financial aid. Grants, loans, work-study, scholarships, and other monies provided to students to help them meet expenses (Aud et al., 2012).

Financial aid awareness. The moment when high school students acquire knowledge about the various financial resources available at postsecondary institutions.

GEAR UP. Acronym for Gaining Early Awareness and Readiness for Undergraduate Program, a federal program authorized by Congress in 1998 to provide college-preparation services in high poverty schools (Haskins & Rouse, 2013).

Latino. An umbrella group of several nationality groups, including Mexicans, Puerto Ricans, Cubans, and Central and South Americans (San Miguel, 2003).

Remedial courses. Courses to prepare students academically and socially during their early stages of college (Levin & Calcagno, 2008).

Socioeconomic status. A rating of the status of an individual's position in a stratified society based on a variety of social and economic indices (Reber & Reber, 2001).

Status dropouts. Individuals aged 16-24 years old who are not enrolled in school and have not earned a high school credential, including a diploma and General Educational Development (GED) certificate (Aud et al., 2012).

Assumptions

The research investigator noted the following assumptions that may have influenced the research study outcomes:

1. The non-treatment group did not benefit from the presence of GEAR UP at the secondary school.
2. The treatment group participated in one or more GEAR UP activities, given that GEAR UP participation was strictly voluntary.
3. The Latino students who participated in the study belonged to an underserved demographic population.
4. The investigator assumed all participants were either citizens or permanent residents of the United States.

Delimitations

The research investigator noted the following delimitations that may have affected the research study outcomes:

1. The quality of GEAR UP interventions varies among the partner secondary and postsecondary institutions.
2. The quality of the archival data may be compromised due to human error.
3. Community college students typically have other personal challenges that could have affected their college performance.
4. Since GEAR UP students may enter a 4-year traditional college/university immediately after high school graduation, the research project could have benefitted from a larger population size.

5. The limited time frame did not allow for the use of unit and degree completion to determine college academic success.
6. The missing data elements in the college admissions database made it impossible to disaggregate the Latino population into various ethnic sub-groups.

Chapter 2: Review of Related Literature and Research

A review of related literature and research justified the need to conduct this research project. The evidence gathered during the literature review process supported the need to conduct the research. By reviewing the related literature and research on GEAR UP and other closely related topics, the investigator narrowed the scope of the research inquiry. To fully appreciate the scope of the literature review process, it would be essential to explain how the investigator gathered the literature for the purpose of developing the foundation for the research project.

The information contained in this chapter originated from various academic sources, giving high priority to peer-reviewed articles and recently published literature. The bulk of the historical information on higher education came from contemporary published books by academic scholars. The investigator searched on Google Scholar and the Education Resource Information Center (ERIC) to find empirical research on GEAR UP and related subject matter. The ProQuest database allowed the investigator to review the most recent dissertation research on GEAR UP. The National Center for Education Statistics (NCES) provided important historical and contemporary factual information on the American educational system. The investigator consulted the 2010 Census, the Pew Research Reports, and local school district for information on demographic population data. Whenever appropriate, the investigator obtained information from various websites, excluding Wikipedia.

Chapter 2 divides the review of related literature and research into three sections. The first section provides a historical account of the evolution of the American higher education system, leading to the establishment of GEAR UP. A brief

examination of significant events in American higher education framed the research problem within a much broader context, offering readers a wider perspective and richer understanding of the issue. The middle section describes the role of community colleges, the plight of the Hispanic and Latino population in the American education system, college readiness, financial aid, socioeconomic status, the school environment, and academic achievement. In addition, the section describes the conceptual model of student college enrollment, which served as the theoretical framework for this research project. Finally, the chapter concludes with a brief summary of the literature and a justification statement of the need to commence with the research.

Historical Background

Many unique features of the American higher education system have roots in the European tradition. For example, the tradition of academic freedom that served as the foundation of American universities originated in the University of Bologna. Founded in 1088, the University of Bologna in Bologna, Italy, is widely known to have been the first university to usher higher education. In 1158, Federico I established the idea of *Constitutio Habita*, guaranteeing the role of universities to conduct research without influence from outside forces or power. Federico I was a student of Irnerio or *lucerne iuris*, meaning lantern of law, who was one of the first scholars at University of Bologna (Universita di Bologna, n.d.). After the establishment of the University of Bologna, the concept of higher education quickly spread throughout Europe, metamorphosing into a variety of model structures.

A variety of higher education models in the northern part of Europe influenced the first educators in the colonial United States to develop the American higher

education system. For example, the John Hopkins University, which was founded in 1876, adopted the concept of advanced scholarship and doctoral programs from the German university model (Thelin, 2004). The focus on advanced scholarship and post baccalaureate programs paved the way for the reputation of American universities as world-class research institutions. The characteristics of intelligence, drive, motivation, and inspiration created the necessary condition for excellence in higher education globally, including the American universities (Adriaansens, 2006). The first American universities were founded during the American colonial period preceding the Declaration of Independence in 1776.

Founded in 1636 on an acre lot with a planted apple tree, Harvard University was the first higher education institution established in the United States during the colonial period (Douthat, 2005). In a number of ways, the American colonial colleges stood very distinct from their English counterparts, such as Oxford and Cambridge. Thelin (2004) noted that the first American colleges provided both the instruction and certification of degrees, which differed from their foreign counterparts. In addition, the American colleges did not have college branches within the university, which was the structure at Oxford and Cambridge.

During the American colonial period, the prospect of higher education was limited to privileged young men from wealthy families who aspired to higher learning. This fact established the notion that access to higher education has been a challenge ever since the establishment of the first American universities. While the cost of college tuition was affordable in the beginning and some scholarships were available, a downturn in the economy prevented families from sending their young men to college, especially in lieu

of making them work in the family farm or business (Thelin, 2004). Eventually, the efforts to expand college access during the colonial period did occur, but with very limited success.

The American universities during the colonial period made attempts to increase campus diversity. Thelin (2004) documented how the early colonial universities attempted to bring Native American Indian students into the universities with the underlying purpose of converting them to Christianity. The early efforts mostly backfired as the Native American students struggled to assimilate in the university environment. With regard to higher education outreach to African Americans and women, no documentation ever existed of any efforts to bring these groups to participate in higher education, with women being outright excluded from attending college. The emergence of the protestant group American Missionary Association (AMA) allowed Hampton Institute, Fisk University, Howard University, and other Black colleges to recruit African American students to pursue higher education. The earliest colleges for women began to appear in the 1840s, with Mount Holyoke earning a very good reputation for being a thorough and academically advanced institution designed to serve women.

Founded in 1837 by Mary Lyon in Western Massachusetts, Mount Holyoke immediately gained a reputation for carrying out the vision of its founding leader, an integrated pedagogy of curriculum and living arrangements. The rising demand for teachers, as a result of the increasing number of compulsory secondary public schools, appeared to have spurred the growth of women's colleges (Thelin, 2004). A major piece of federal legislation that was passed in the mid-1800s paved the way to the expansion of colleges and universities across the United States.

The 1862 Morrill Land Grant Act created a partnership between the federal government and the states, in which the latter were allowed to sell federal lands. The funds generated from the proceeds of the sale of federal lands allowed the states to build public state colleges and universities. This single piece of federal legislation greatly expanded the number of state colleges and universities nationwide, with most offering a broad and utilitarian curriculum (Thelin, 2004).

Thelin (2004) noted that the broad scope of the Morrill Act gave states the latitude to design their own curriculum, with some colleges offering a bent towards liberal arts curriculum while other universities preferred to offer a more scientific and technical education. The growth of colleges and universities resulted in some colleges relaxing their admissions requirements to stay abreast of the competition. In many cases, the colleges ended up accepting academically underprepared students, offering them preparatory or remedial courses with the intention of making them ready for college-level work.

The early 20th century saw the beginning of the 2-year junior colleges, mostly in the western and mid-western part of the country (Thelin, 2004). More commonly referred to as community colleges, these institutions played an important role in making higher education accessible to anyone who wished to continue their education beyond the secondary level. Widely considered a 20th century educational innovation, the rise of community colleges can be attributed to the need for trained workers to drive the expanding industries, the lengthened period of adolescence, and the drive for social equality (Cohen & Brawer, 2008). The number of public community colleges in the United States increased from 19 in 1915 to 1,045 in 2006 (Provasnik & Planty, 2008).

In addition to the growth in the number of community colleges, the passage of the Servicemen's Readjustment Act of 1944 or the G.I. Bill enabled military war veterans to pay for college tuition by providing them with monetary assistance, expanding higher education access (Orfield, Marín, & Horn, 2005).

During the latter part of 20th century, several notable pieces of legislation made a clear impact on higher education access. The 1964 Civil Rights Act outlawed both racial and ethnic discrimination, which resulted in the expansion of college access to students of color. The following year, the Higher Education Act of 1965 created the College Work Study Program, giving low-income students employment opportunities while enrolled in college (Orfield et al., 2005). MacDonald (2004) notes the importance of the Bilingual Education Act of 1968, which provided federal funds for compensatory and remedial programs to assist underprivileged children whose native language was not English. The primary recipients of these programs were Latino children. The Higher Education Act Amendments of 1972 resulted in the creation of the Pell Grant program, which made permanent the government initiative to expand access to higher education by filling the gap between the college cost and the ability of low-income families to afford college (Orfield et al., 2005).

As the nation marched into the 21st century, several notable court cases, changes to the federal tax code, and a piece of state legislation in California affected the accessibility of higher education. The landmark 1978 supreme court decision in *Regents of the University of California v. Bakke* called into question the validity of affirmative action practices, resulting in banning the use of race in the university admissions process (Douthat, 2005; Orfield et al., 2005). In California, the passage of

Proposition 13 reduced funding for higher education by cutting state taxes, reducing the availability of financial aid, and beginning a shift to loan borrowing as a resource for families to afford the rising cost of college education. During the 1990s, programs such as the HOPE Scholarships and Bright Futures shifted resources from the very low-income students to middle-income families. The HOPE Scholarships allowed middle-income families to receive federal tax incentives by allowing the deduction of tuition cost in their federal tax returns. In another landmark Supreme Court decision, *Grutter v. Bollinger* in 2003, the virtues of affirmative action were upheld by recognizing the social and educational value of a diverse education (Orfield et al., 2005).

After more than 300 years of higher education history in the United States, the challenge to make a college education accessible for all citizens still exists. In addition to college accessibility, recent educational data suggests the need to improve degree completion rates at the postsecondary level, including community colleges (Center for Community College, Student Engagement, 2010; Moore & Shulock, 2010; Mullin, 2010). The challenge to make college accessible and improve college completion rates among underserved youths from low socioeconomic status families resulted in the creation of GEAR UP and other federal college preparation programs.

GEAR UP

The GEAR UP initiative was signed into public law (P.L.105-244) on September 29, 1988 by President Clinton as authorized by Title IV of the 1998 Amendments to the Higher Education Act (HEA) of 1965. Modeled after the I HAVE A DREAM and Project GRAD college access programs, GEAR UP provided a comprehensive, holistic, and research driven initiative to prepare underserved youths for college (“About GEAR UP,”

n.d.). The Carnegie Council on Adolescent Development greatly influenced the program development of GEAR UP (U.S. Department of Education, Office of Planning, Evaluation and Policy and Program Studies Service, 2008).

GEAR UP advocates believed in early intervention to be a necessary influence on student behavior and academic outcomes in high school and beyond. The period of adolescence was believed to be the last opportunity for social institutions to influence youth behavior and attitudes toward important college decisions while in high school. To address the inequity experienced by students from low socioeconomic status families, GEAR UP eliminated the potential barriers to higher education, such as college readiness and accessibility (U.S. Department of Education, Office of Planning, Evaluation and Policy and Program Studies Service, 2008).

The GEAR UP program helps low-income students and student with disabilities obtain a high school diploma and prepares them to enter and succeed in college. By providing middle and high school students with financial assistance, academic support, counseling, mentoring, outreach, and supportive services, GEAR UP aimed to reduce high school dropouts and the need for remedial education in college (20 USC § 1070a–21, 2012). The program provided students and families with information about the advantages of obtaining a college education, including college financial aid options.

GEAR UP is different from the other college preparation programs, such as TRIO Upward Bound or AVID (Advancement Via Individual Determination), in a number of ways. The model provided services to an entire grade cohort, requiring grantees to provide services to a targeted student cohort. The cohort approach recognized the fact that all students faced a greater risk of poor academic performance and low rates of

college attendance in schools situated in neighborhood with high rates of family poverty (U.S. Department of Education, Office of Planning, Evaluation and Policy and Program Studies Service, 2008). Furthermore, GEAR UP highlighted the importance of partnerships between secondary school districts, postsecondary institutions, and community-based organizations.

Originally, the GEAR UP legislation stipulated that projects be awarded in 5-year partnership grants. To facilitate the need to serve the students through 12th grade, legislators passed a provision to fund a sixth year for all GEAR UP projects. GEAR UP projects followed a student cohort from grades seven through 12. GEAR UP funding was made available to states or a partnership consisting of one or more local educational agencies and one or more degree granting institutions of higher education (U.S. Department of Education, Office of Planning, Evaluation and Policy and Program Studies Service, 2008). In addition to the academic institutions, the partnership must also include at least two other community-based organizations or entities, such as businesses and professional organizations.

The conceptual framework that guides GEAR UP (see Appendix A) illustrates how project interventions provided various types of services to a targeted population, within the context of students, families, schools, and communities. This framework closely resembles Perna's (2010) Conceptual Model of Student College Enrollment. Both frameworks highlight the impact of college readiness and financial aid awareness on college access.

Program impact. The modest results from the limited evaluations of GEAR UP and other federally funded programs prompted Haskins and Rouse (2013) to propose

the consolidation of college access programs into one consolidated single grant program that will require funded programs to provide rigorous evidence as stipulation for funding. After conducting a review of the literature, Haskins and Rouse found one notable study on GEAR UP (Bausmith & France, 2012). Bausmith and France's (2012) findings yielded inconsistent results across tests and cohorts. Furthermore, Bausmith and France's research design included all students rather than a focusing on a underserved set of students targeted by GEAR UP. Haskins and Rouse noted that *none* of the previous GEAR UP evaluations analyzed data on college enrollment or completion of its target population.

Bausmith and France (2012) found positive evidence of improving college readiness outcomes for low-income students using a number of college readiness measures. Given the three trillion dollar investment by the federal government to serve eight million underserved students or an average monetary public investment of \$375,000 per child, the need to increase the college participation rates among youths, and the current economic turmoil caused by the great recession, it was important to determine the impact of GEAR UP on student outcomes. The purpose of the study was to evaluate the impact of GEAR UP on college readiness outcomes using a quasi-experimental design. The study evaluated 173 GEAR UP schools to determine if the program made an impact in increasing the college readiness of 12th grade students to enter and succeed in college.

The researchers analyzed 7 years of matched cohort data from 2003-2009 from the National Center for Education Statistics (NCES) and student participation and performance on three College Board assessments, namely, Scholastic Assessment

Test (SAT), Preliminary Scholastic Assessment Test (PSAT)/National Merit Scholarship Qualifying Test (NMSQT), and Advance Placement (AP). Using the free/reduced-price lunch variable, the researchers identified comparable non-GEAR UP schools for comparison purposes. The study findings showed that GEAR UP made significant increases in PSAT/NMSQT and AP participation among students. However, the researchers observed no deviation in performance on these tests. Still, the study findings suggested that GEAR UP made a positive impact on the college readiness of low-income students (Bausmith & France, 2012).

Based on the use of preliminary data, Beer et al. (2008) found that Summer Learning Camps have a positive influence on the academic achievement and engagement of students from low socioeconomic status. The purpose of the study was to describe an innovative summer-based intervention program for low socioeconomic status students attending low-performing schools and report the program's impact on the target population. The weeklong summer camp gave middle-school participants the opportunity to experience college life by living in dormitories, eating in the university cafeteria, attending classes, conducting research with a university faculty member, learning about Admissions and Financial Aid process, and other activities. The study participants included 236 middle-school students (197 seventh graders and 33 sixth graders) who participated a weeklong summer learning camp on a southern college campus. All middle schools belonged to the LA GEAR UP partnership in Louisiana.

The majority of participants ($N = 222$) were eligible to receive free/reduced lunch at the middle school. The ethnic breakdown of the population comprised of African-American, 72% ($N = 165$), White, 27% ($N = 63$), and Hispanic, less than 1% ($N = 2$).

The researchers administered the modified EXPLORE to help participants plan high school courses and satisfaction survey at the beginning and the end of the camp to measure curriculum-related knowledge of students in eight and ninth grade. In addition, the researchers administered the Academic Competence Evaluation Scales (ACES) at the beginning of the camp and in August towards the end of summer to measure academic competence of students enrolled in K-12 (Beer et al., 2008).

The outcome of the study revealed that the weeklong summer camp impacted participants' academic achievement, self-reported academic skills, and self-reported academic motivation, engagement, interpersonal, and study skills. The researchers acknowledged the lack of comparison group as a study limitation. In addition, not all of the participants completed the ACES assessment (Beer et al., 2008).

Thornton and Sanchez (2010) highlighted the impact of the Nevada State GEAR UP grant in promoting resiliency among Native American students. In light of the school dropout rates among Native American students, the need to promote resiliency among the American Indian high school students can best be exemplified by a GEAR UP intervention. The GEAR UP Leadership Summit: Let's Start Now! provided opportunities for Native American students to explore about their college options.

Thornton and Sanchez (2010) provided a literature review on resiliency, with a particular focus on Native American students. Resiliency can be described as the individual ability to cope under stress or respond under pressure. The theoretical underpinnings of resiliency demonstrated that resilient youths adapt successfully to the school environment in spite of poverty, family factors, and or social issues. To foster resiliency, Thornton and Sanchez advocated for increased professional development for

staff by raising the knowledge of youth resiliency among stakeholders, and focusing on improving skills among staff to facilitate the development of resiliency.

As a follow up to their previous research, Lozano et al. (2009) found that students who participate in college preparation intervention programs, such as AVID and GEAR UP, maintained high aspirations and anticipations for college. The research attempted to address the problem of lower high school graduation and college enrollment rates among Hispanics. The purpose of the research was to determine if AVID and GEAR UP made an impact on 12th grade Hispanic students' anticipation of, aspirations for, and preparation for college.

The research sample consisted of 139 Hispanic students selected from two high schools in South Texas. One high school offered AVID while a second high school participated in GEAR UP. The research design identified four comparison groups, namely, students who participated in AVID, GEAR UP, AVID/GEAR UP, and a control group of non-participants. The researchers used a survey item asking how much education a student wished to achieve to measure educational aspiration. To measure educational anticipation, the researchers used the anticipation scale, consisting of six multiple-choice items that inquired about post high school plans, such as college attendance and completion. The researchers developed a 25-item Survey of College Preparation for the purpose of collecting data. In addition, the researchers used academic transcripts data for analysis of college preparedness (Lozano et al., 2009).

The researchers analyzed grade point averages (GPA), advanced course taking patterns, exit level Texas Assessment of Knowledge and Skills (TAKS) performance, dual credit enrollment, high school graduation plans, and various other tests to measure

college preparedness. To analyze the data, the researchers used descriptive statistics, analysis of variance (ANOVA), and Kruskal Wallis tests to determine differences in levels of aspirations and anticipations among the four groups. The researchers conducted a qualitative analysis of the academic transcripts to detect emerging themes or patterns among the four groups. Other than advanced course-taking in mathematics, the study implied that participation in GEAR UP, AVID, or a combination of the two programs did not yield better results for one program over the other (Lozano et al., 2009).

Van Kannel-Ray et al. (2008) found the academic case management intervention model to be an effective GEAR UP intervention for low socioeconomic status (SES) students enrolled in urban middle schools. As part of the Midwest Educational Research Consortium (MERC)/GEAR UP project, program administrators employed a number of strategies and interventions to support underserved students. The researchers evaluated the effectiveness of this model in making a difference on the academic performance of middle school students.

The purpose of the study was to document the effectiveness of the academic case management program. The academic case management program provided a mechanism to facilitate students' learning to cope with student challenges within the public school systems. The study cohort consisted of 2,144 seventh and eight grade students from three urban middle schools. The treatment group consisted of 120 students who were evenly assigned to three case managers (Van Kannel-Ray et al., 2008).

The researchers analyzed grade changes from core courses and school attendance of 120 seventh graders from three urban middle schools served by a case manager. A case manager was assigned to manage 40 students. The study found that the academic case management intervention model worked well with children from low SES and in urban schools. The practice extended beyond mentoring and tutoring by focusing on individualized attention to students (Van Kannel-Ray et al., 2008).

Smithwick-Rodriguez (2011) found that the Early College High School (ECHS) program provided a more conducive environment to student performance towards college preparation than GEAR UP. Since students from low SES families who enter college are more likely to be academically underprepared, the researcher attempted to examine the effectiveness of two college readiness programs. The purpose of the dissertation study was to examine the difference between ECHS and GEAR UP in preparing Texas high school students for college.

The study sample consisted of less than 300 students from two south Texas high schools. The researcher used the TAKS to determine academic performance, commended performance, and college readiness performance of study participants. Using two-way ANOVA, t-test, and Pearson's chi-square test, the researcher compared the impact of ECHS and GEAR UP on college preparation. The study results indicated that students who participated in ECHS schools outperformed those who participated in GEAR UP (Smithwick-Rodriguez, 2011).

Morgan (2012) found that GEAR UP has the potential to raise student achievement, high school graduation, and college enrollment. The purpose of the study was to examine how a GEAR UP program achieved its intended goals. The researcher

analyzed data from 294 high school seniors, including grades from academic transcripts, standardized test scores, program service hours, a student survey questionnaire, a parent survey questionnaire, focus groups, and personal interviews with GEAR UP alumni.

The GEAR UP program examined was from a large urban high school located in New York. Approximately 74% of the student population was eligible to receive free or reduced lunch. The Hispanic and Latino group (58.1%) was the largest demographic group followed by Asian (15.7%), African American (13.9%), and White (11.7%). Using descriptive analysis, one-way ANOVA, and correlation, the researcher examined correlations among the identified variables to determine the effect of GEAR UP on a control and treatment group. Although the intent of GEAR UP was to encourage secondary school students from underserved groups to aspire to attend 4-year universities, the study found that some students will select a community college for a variety of reasons. The reasons include a cost proximity to the family's financial obligations, transportation, uncertainty in program of study, and the community college's open door policy (Morgan, 2012).

Role of Community Colleges

A product of American ingenuity, community colleges attract students for a variety of reasons. Community colleges offer lower division courses, allowing students to complete the required general education before transferring to a 4-year university to complete the higher division requirements. By doing so, students and parents realize significant savings in tuition costs, since the cost of attendance at a community college is much lower than at a traditional 4-year university. Community colleges also offer 2-

year associate degrees and vocational certificate programs designed to train students with the necessary skills to participate in the labor workforce.

In addition to offering transfer and vocational training opportunities, Boggs (2011) stated that community colleges had expanded their mission in significant ways. Community colleges offer non-credit training programs in highly specialized fields to meet the demand of local employers. For those who need additional preparation for college level work, community colleges offer basic skills development courses to enhance English and math skills. To address the demand for personal enrichment, community colleges offer fee-based courses in dance lessons, sports activities, and other leisure type educational opportunities. Because of their expanding role, community colleges provide a comprehensive mission that distinguishes them from the other higher education segments.

History. Founded in 1901, Joliet Junior College in Illinois is widely acknowledged to have been the first public community college in the United States (Boggs, 2011; Joliet Junior College, n.d.). Like most community colleges in the beginning, Joliet Junior College started as an experimental post high school graduate program. With a total enrollment of six students when it opened, approximately 35,000 students were enrolled at Joliet Junior College in 2012 (Joliet Junior College, n.d.). Unlike most community colleges today, Joliet Junior College has retained the term *Junior* in its name.

As the community college segment evolved in the 1950s and 1960s, the term *junior college* had been used to refer to the undergraduate branch of private colleges. In contrast, publicly supported institutions of higher education that offered the first 2

years of undergraduate studies became widely known as *community colleges* (Cohen & Brawer, 2008). The growth of community colleges across the nation remained unparalleled in the history of the American higher education. The high demand for advanced education and the rapid changing of times in the middle of the 20th century fueled the community college expansion (Hiatt-Michael, 2010).

Cohen and Brawer (2008) attributed the growth of community colleges to the ideals of democracy such as women's suffrage and electoral process reforms. Prominent educators from California, such as Stanford University president David Starr Jordan and University of California professor Alexis Lange, advocated for a two-tiered higher education system, where the universities would be responsible for upper division courses, including graduate and professional studies, and a lower division school offer general and vocational education. The expansion of community colleges to the west seemed inevitable due to very little competition from religiously affiliated institutions and private universities supported by philanthropists, which in the middle of the 20th century had sparsely populated the western region of the United States. Between 1910 and 1960, nearly two community colleges opened every year to meet the demand for higher education across the state of California.

To address the demand for post-secondary education in 1907, the California legislature allowed high schools to offer post-graduate courses, especially in cases where there the nearest institution of higher education is beyond 200 miles from the school district. With support from the University of California, Stanford University, and public education at all levels, California led the nation in the development of community colleges. Subsequent laws in California authorized junior college districts that were

totally independent from secondary high schools. Under the 1917 Smith-Hughes Act, federal funds allowed at least 62 community colleges to offer courses in trade and industrial education with the purpose of preparing students for employment. By 1980, a vast majority of the California community college districts had separated from their high school districts (Cohen & Brawer, 2008). With 2.6 million students attending 112 colleges, the California community college network became the largest system in the United States.

Tuition cost. Up until 1984, students attending California Community Colleges did not pay an enrollment fee. The charging of tuition and fees at California Community Colleges was a controversial issue upon implementation because it conflicted with its core mission to make college accessible by making higher education affordable. The California legislature first authorized an enrollment fee of five dollars per unit in 1984, gradually increasing to the current rate of \$46 per unit in summer 2012. Even though the fees at California community colleges had increased by 820% within a span of 28 years (see Table 1), the California system continued to be the most affordable in the nation (see Appendix B).

The California Community College system remains the least expensive college in the nation due to its low tuition. California charged just a little over half of the next least expensive state in terms of tuition, which is New Mexico. The low tuition cost combined with the increase in California population growth resulted in the system having more than twice the number of full-time equivalent enrollment compared to the next largest state in 2004 (Brown, 2012; Cohen & Brawer, 2008).

Table 1

California Community Colleges Fee History

Fiscal Year	Fee (per unit)
1984-85	\$5
1991-92	\$6
1993-94	\$10
1994-95	\$13
1998-99	\$12
1999-00	\$11
2003-04	\$18
2004-05	\$26
2006-07	\$20
2009-10	\$26
2011-12	\$36
2012-13	\$46

Note. Prior to 1984, community colleges charged no fee

Funding. The California Community Colleges were highly subsidized by taxpayers from state and local income and property tax revenues (Brown, 2012). Students enrolled in California Community Colleges, on average, pay only 3% of the cost of instruction and services provided to them, compared to CSU students who pay 15% and UC students who pay 22%. The subsidy allows community colleges to maintain an open access policy (Murphy, 2004), opening the doors of higher education to many underserved students. The financing challenge for community colleges had been the dwindling public revenues to support a system that had seen a significant growth in enrollment.

While California Community College leaders had advocated for a no or low-tuition fee policy, other educators differed in their sentiment. Lombardi (1976) concluded after studying the history of tuition that charging tuition would be inevitable in the financing of community colleges. A 1941 survey showed that only a small sample majority of educators, editors, and other officials agreed with having a free tuition at

public community colleges. The Carnegie Commission on Higher Education concluded that students must pay a larger share of their post-secondary education to save the private sector of higher education. State legislators advocated for increasing tuition as a way of controlling state appropriations (Cohen & Brawer, 2008).

The arguments for and against charging tuition at community colleges heightened a philosophical discourse on the merit of public higher education. Those who advocated for charging tuition argued that by making students pay for college, they would take their education more seriously because of the personal money invested (Cohen & Brawer, 2008). The counter argument against charging tuition and providing more public investment in higher education was the issue of social justice.

St. John and Asker (2003) argued from the framework of the theory of social justice that the opportunity for higher education is a social primary good that brings both wealth and self-respect. To protect liberty and social justice within the nation's social fabric, it was fundamental for college opportunities to be preserved by providing federal and state subsidies to keep tuition costs down. The gap in college enrollment between African American and Hispanic students and White students can be attributed to the decline in the purchasing power of Pell grants. Although a shift in public policy during the 1990s to provide student subsidies in the form of loans and tax credits may have helped middle class students to attend college, the policy was detrimental due to raising inequality in higher education access. Perhaps the argument for social justice kept the California legislature from making postsecondary college education inaccessible in the California Community Colleges by making the Board of Governors (BOG) Fee Waiver available to California residents.

Fee waiver. To maintain equity after the California legislature instituted a five dollars per unit resident enrollment fee in 1984, the system created the BOG Fee Waiver Program. The purpose of the BOG Fee Waiver program was to ensure that the fee policies of the California Community Colleges did not present a financial barrier to any California residents seeking higher education. Essentially, students must be receiving certain public assistance, meet strict low-income criteria, or demonstrate financial need through the federal financial aid application to qualify for a fee waiver. In addition, dependents of National Guard members killed while in active duty, children of veterans with service connected injuries, Congressional Medal of honor recipients and their children, surviving member of individuals killed in the September 11, 2001 terrorist attack, and dependents of law enforcement or fire suppression personnel killed while in active duty qualify for a fee waiver. The income standards used to determine fee waiver eligibility were equal to 150% of the federal poverty guidelines for the base year and consequently subject to change each year (Board of governors fee waiver program and special programs manual, 2009).

While documentation of income was required under Title 5 of the California Code of Regulations, colleges have the option to accept a self-certified document, sampling method, or 100% verification of income (Board of governors fee waiver program and special programs manual, 2009). Since there was very little financial incentive for colleges to perform 100% verification with the added labor cost, colleges naturally opt for the self-certification or sampling method of verification. While the community college system earned public admiration and support for making college education accessible

and equitable, public financing since 1990 has remained flat except for federal post-recession stimulus spending.

When Proposition 13 in California limited property tax to 1% of a property's assessed value in 1976 with a maximum 2% annual increase in the 1970s, California Community College districts found their major source of funding diminished. Shortly after the passage of Proposition 13, the state's share of funding rose from 42% to nearly 80% (Cohen & Brawer, 2008). California Community College districts received approximately one-third of their revenue from local property taxes, which varied depending on the property valuation of the local districts. Nevertheless, the availability of the BOG Fee Waiver Program in California made it possible for many underserved students, most notably the growing Hispanic and Latino demographics, to participate in higher education.

Hispanic and Latino Demographic

The Hispanic and Latino population in the United States had grown exponentially at the dawn of the 21st century. In a span of 10 years from 2000 to 2010, half of the total population growth in the United States can be attributed to the growth in Hispanic population. By 2010, the Hispanic population of 50.5 million accounted for 16% of the United States total population of 308.7 million (Ennis, Rios-Vargas, & Albert, 2011).

Mostly concentrated in the Western and Southern fringes of the United States, the Mexican and Puerto Rican ethnic group became the two largest and fastest growing demographics among Hispanics. From 2000 to 2010, the Mexican population increased by 11.2 million or 54% from 20.6 million in 2000 to 31.8 million in 2010, the largest numeric increase among the Hispanic sub-groups. Puerto Ricans increased from 3.4

million in 2000 to 4.6 million in 2010, a 1.2 million or 36% growth in population. Among the states bordering Mexico, the Hispanic population had been fairly concentrated in Texas, New Mexico, Arizona, and California (Ennis et al., 2011).

Among the major cities in the United States, Los Angeles currently ranked second only to New York with the largest number of Hispanics in terms of population size. In Los Angeles County, the size of the Hispanic population was approximately 4.8 million as of 2013, by far the largest concentration of Hispanics among counties with at least one million Hispanic residents (Brown & Lopez, 2013; Ennis et al., 2011). Brown and Lopez (2013) noted that the share of Hispanics who live in the largest 100 counties had fallen by 75% in 2000 and 78% in 1990, suggesting a growth expansion of the demographic in other counties. In East Los Angeles with a total population of 126,496, about 97.1% of residents were of Hispanic origin as of 2011 (Ennis et al., 2011). As the nation's largest minority group and fastest growing population (Brown & Lopez, 2013), the educational attainment of Hispanic youths has become a major focus as the United States competes in the global economy.

Fry and Taylor (2013) reported that the percentage of Hispanic high school graduates (69%) in the class of 2012 who entered college has surpassed the college going rate among Whites (67%). The increase in percentage appears to have been accelerated by the recession in 2008, when Hispanics opted to pursue the completion of their high school diplomas rather than enter a job market with limited opportunities. Furthermore, the high school dropout rate among Latinos fell from 28% in 2000 to 14% in 2011.

In the Los Angeles Unified School District, the 20.1% cohort dropout rate of class 2012 was much higher than the national rate of 14% (“Cohort outcome data,” 2013). In addition, the cohort graduation rate of 65.9% among Latinos lagged behind that of Asians (85.2%) and Whites (70.9%). Despite a vast improvement in college attendance and high school graduation rates, Hispanics continued to lag behind other groups in key higher education measures (Fry & Taylor, 2013).

Fry and Taylor (2013) found that Hispanic college students were less likely than the other demographics to enroll at a 4-year university. Furthermore, Hispanics were also less likely than other demographics to attend a selective university, attend college full time, and complete a bachelor’s degree. Despite the challenges, Fry and Taylor noted that Latinos value college education, especially as a means to get ahead in life. To fully understand the plight of the Hispanic and Latino population within the American Educational system, it would be worthwhile to briefly review the history and key issues that affect the educational outcomes of this group.

The history of the Hispanic and Latino participation in the American education system can be traced back to the early 19th century. During the Spanish-Mexican era from 1519 through 1848, education mostly occurred in the United States though informal settings in missions, presidios, and civilian settlements. By early 19th century, education became a system by which the dominant population transmitted their social and cultural values, mostly to the children of civilian settlements in Santa Fe, Los Angeles, and San Antonio. At the time, the majority of elementary schools encouraged cultural conformity by eliminating non-English languages, cultures, and communities from school operation (San Miguel, 2003).

According to San Miguel (2003), the two major Latino groups, ethnic Mexicans and Puerto Ricans, tended to be powerless, economically impoverished, and socially alienated, and often served as a source of cheap labor by the 20th century. Because of the imbalanced and subtractive curriculum, Latino schoolchildren were often classified as either intellectually or culturally deficient, which encouraged schools to provide them with special education (Condon, 1979). The growth of the Latino population had been significant and diverse during the latter part of the 20th century due to political, economic, and social problems in the home country and changes in United States immigration policies. The contemporary public education system became more responsive to the academic, cultural, and linguistic needs of Latinos as a result of the Bilingual Education Act of 1968 (San Miguel, 2003).

Latino students typically enter higher education through 2-year community colleges rather than 4-year universities (Kurlaender & Flores, 2005). While Latinos have made great strides in college enrollment, the population still lags behind other groups in college graduation rates. Because 40% of Latino children live below the poverty level as of 2003, they tend to lack a supportive environment to encourage them to enroll in college (Zambone & Alicea-Saez, 2003). The lack of guidance to access financial aid for first-generation Latino students continues to be a barrier to college enrollment (Heredia, 2009; Zambone & Alicea-Saez, 2003).

Zambone and Alicea-Saez (2003) noted that Latino students in the past were generally placed in basic high school courses within the American educational system. This placement contradicted research findings that those who take rigorous curricula will more likely be successful in college. Because Latino students tended to be

underprepared upon entry to college, they were already at a disadvantage upon entry to college. Thus, Latino students often begin their college career in remedial courses, which requires extra time and money to graduate. Latino students often entered college as non-traditional students. Latino college students tended to be older, self-supported themselves and a family, and attend college part-time, a recipe for failure according to research (Zambone & Alicea-Saez, 2003). Biculturalism and a sense of belonging influenced Latino students to persist in college (Velasquez, as cited in Zambone & Alicea-Saez, 2003).

Contemporary research. A review of the literature within the last 5 years showed a significant number of studies related to the Latino experience in the American educational system. Garza and Garza (2010) examined the impact of White teachers' perceptions, beliefs, and life experiences on the success and failure of low SES Mexican-American students. The researchers were concerned about the lack of empirical research on successful teachers of minority students. Using qualitative research design methodology, the researcher observed the characteristics of teacher participants in their natural setting and collected data through in-depth interviews. The purposely-selected sample in the study only included White, female teachers who taught mostly Mexican-American children. The student demographic of the school in the study were comprised of 98% Hispanic students from low SES families, 21% limited English proficient students, and 41% White teachers. The school achieved Exemplary or Recognized status for several years prior to research study, meaning that 80% of all students had passed the Reading, Math, Writing, and Science sections of the TAKS.

The study identified a sense of commitment, dedication, persistence, hard work, and resourcefulness as attributes common to the White female teachers. From a public perspective, the teachers were successful because their students performed well in the TAKS standardized test. However, the researchers pointed out that from the perspective of culturally relevant teaching (CRT) and subtractive schooling, the success achieved in passing the standardized test during elementary school was not as evident as the students progressed into middle and high school. Since the teachers were more focused on the assimilation of minority students into a western school environment with very little student resistance at the elementary level, the success eventually declined at the higher level due to the teachers' lack of attention to culturally relevant pedagogy (Garza & Garza, 2010).

Taylor Haynes, Phillips, and Goldring (2010) explored the factors that influence Latino parents' participation in magnet school choice. As magnet schools have played a greater role in improving school achievement for all students, Latino enrollment rates in magnet schools fell short of their representation within the general urban communities. The study included an original sample of 718 applicants from White and Black families with a response rate of 56.7%. To accommodate the scope of the study, the researchers narrowed the sample to 95 White, 40 Black, and 15 Hispanic and Latino applicants. The researchers interviewed 30 Latino parents, asking them to respond to open-ended questions to report the race and ethnicity of their child. About half of the parents self-identified their children as Latino and were included in the data analysis using both quantitative and qualitative methods. The data collection included a telephone interview survey asking parents about their experience with school choice. In

anticipation of the Spanish-speaking sample population, the researchers used interviewers who were proficient in both English and Spanish.

The results of the study suggested that educational attainment, family income, generational status, priorities in school choice, and social networks affect Latino families differently than White and Black families. The findings confirmed the researcher's hypothesis that Latino parents who enroll their children in magnet schools tend to be highly educated, belong to the middle-class, and have at least one parent who is a second-generation immigrant. Latino parents gave importance to academic ranking and school safety as important factors in school choice. While they do not benefit from being informed through social networks about school options like their White and Black counterparts, Latino parents tended to be very assertive in finding out about alternative school options for their children. Better outreach by school districts to inform low SES families about school options may empower parents to consider magnet schools as an option for their children (Taylor Haynes et al., 2010).

Portes and Rivas (2011) examined how young immigrants adapt to life in the United States. The authors contended that Asian Americans tend to be the offspring of high-human-capital migrants; Hispanic parents tend to be manual workers. Based on their review of empirical research on the adaption of migrant youths, the family background of the youth played a role in the development of language and cultural learning adaption. The absence of or minimal cultural capital of parents of Hispanic migrant youths compared with their Asian Americans counterparts has been identified as a barrier to advancement in their host country. To level the playing field, the authors proposed two interventions to facilitate a successful adaption of Hispanic immigrants

into the American culture. The first intervention would be to legalize unauthorized youth migrants who have a very limited path towards survival in their home country. The second was to provide volunteer programs and other forms of outside assistance to create opportunities and incentives to acquire education and be a contributing member of the society.

Becerra (2010) examined the varying degrees of perceptions of educational barriers among the Latino population in the United States. Through the context of upward social mobility, the researcher was interested in finding out if the level of linguistic acculturation, generational status, academic achievement, and socioeconomic status were factors that hinder the Latino from pursuing higher education. The research study analyzed data compiled by the Pew Hispanic Research Center in 2003.

The data consisted of an original national sample of 3,421 adults who expressed their attitudes towards education. Approximately 44% ($n = 1,508$) of the sample participants self-identified themselves as a Hispanic and Latino and included in the study. To analyze the relationships between the independent variables (linguistic acculturation, generational status, academic achievement, income) and dependent variables (college enrollment and college completion), the researcher performed multinomial logistic regression. The researcher hypothesized that first generation immigrants with low levels of linguistic acculturation, academic achievement, socioeconomic status, and low academic achievement will perceive increased barriers to college enrollment and completion (Becerra, 2010).

Results indicated that later-generation participants with high levels of linguistic acculturation, high socioeconomic status, and high academic achievement perceived

greater barriers to enrollment in college and the completion of a degree. The researcher noted two study limitations, including a relatively small sample size for a national study and the exclusion of adolescents, whose perceptions may differ from adults' (Becerra, 2010).

An effective mentoring program has been found to be associated with a sense of school belonging among Latinos. Sanchez, Esparza, and Colon (2008) examined the role of natural mentoring relationships in the academic performance of Latino high school students. The researchers hypothesized that mentoring is associated with positive learning outcomes and that the quantity of mentors make a difference in the participant's academic success. The study participants reported the mentors' demographic characteristics and the nature of the mentoring relationships of up to three mentors in their lives. Resiliency theory has often been used to explain how youths from difficult backgrounds can overcome life's challenges, given strong support and adequate resources (Sanchez et al., 2008).

The study participants consisted of 140 Latino high school seniors (52% female; mean age = 17.88; 95% Latino) from an urban mid-western public school. The researchers used the Psychological Sense of Belonging Membership to assess the participants' sense of belonging in their school. The study supported prior research findings that the presence of a mentor was associated with fewer absences, higher educational expectations, greater expectancies for success, and sense of school belonging. The presence of mentors appeared to be of value in teaching the youths how to access additional school support, thus increasing their connection with the school (Sanchez et al., 2008).

Shiu, Kettler, and Johnsen (2009) described the effects on sense of belongingness of placing Spanish-speaking students in an eighth grade Advanced Placement (AP) Spanish Language course. The study participants included 58 Hispanic students (42 females, mean age = 14.33) from four middle schools who enrolled in and advanced AP Spanish Language class. The researchers selected a random sample of 20 Hispanic students (6 females; mean age = 14.33) as comparison group. The participants completed a 20-minute survey questions on parental involvement, peers, sense of belonging at school, and academic aspirations. The result of the data analysis indicated that the AP students appeared to be more optimistic about their future and made friends who were academically inclined to succeed. The sense of belonging formed as a result of enrollment in an AP course during eighth grade appears to motivate students to enroll in advanced courses in the ninth grade.

College Readiness

GEAR UP identified college readiness of high school graduates as an important benchmark in the success of the program. Sparks and Markus (2013) noted that college readiness is a complex benchmark that can be measured through academic transcript analysis, standardized test scores, and enrollment in remedial coursework. The percentage of undergraduate college freshmen in public institutions enrolled in remedial courses in 2007-2008 (23.3%) was much lower compared to the percentage reported in 1999-2000 (28.8%). Among Hispanics, the percentage (29%) enrolled in remedial courses in 2007-2008 was higher when compared to the overall percentage (23.3%).

While the overall drop in the percentage of college freshmen enrolled in remedial coursework suggested improved college readiness, other controlling factors such as admissions policies or the presence of program interventions such as GEAR UP may have influenced these college readiness benchmark outcomes (Sparks & Malkus, 2013). Nevertheless, college readiness remained an important educational issue because offering remedial courses at the college level impacts both the limited resources available in higher education institutions and the college trajectory of students who begin their college in remedial courses.

Deil-Amen, Rosenbaum, and Person (2005) found that many high school students do not understand the importance of performing well in high school to prepare for college. The gap in minority participation in higher education continued to persist due to perpetuation of rarely noticed practices. Deil-Amen et al. made an attempt to describe the relevant social policies that made an impact on the college opportunities of Black, Latino, and other students with low SES background. The researchers performed both quantitative analyses of a national survey data and case studies of 14 2-year colleges, including community colleges and for profit and non-profit occupational colleges. The study encouraged community colleges to prioritize their missions to effectively sustain high priority programs. A notable recommendation of the study was to improve communication between community colleges and feeder high schools to facilitate college readiness.

Levin and Calcagno (2008) presented a number of approaches to remediation, incorporating ingredients from successful interventions based on their literature review. While a majority of higher education institutions use remediation to prepare students for

college level courses, a review of the literature suggested very limited research in analyzing the effectiveness of remediation. The goal of the study was to provide a conceptual framework to evaluate the effectiveness of remedial programs in community colleges. Levin and Calcagno structured the key ingredients in the design of successful interventions into three categories: (a) curriculum restructure, (b) new institutional structures, and (c) employing strategies and technologies to facilitate learning. To evaluate the effectiveness of remediation programs, community colleges needed to conduct experiments that analyze local knowledge to inform policy decisions.

Ramirez (2009) found that academically underprepared students benefit when faculty serves as mentors, even in informal mentoring relationships. The phenomenological mixed-methods study explored the experiences of students with informal mentors. The sample population included community college students who were about to graduate and or transfer to a 4-year university, but at one time were enrolled in pre-college developmental courses.

The researcher collected data by surveying 200 students and interviewing a purposely sample of 51 students, focusing on their experience with informal mentoring relationship on campus. The majority of the participants (51%) identified a faculty member as a mentor. The study findings recommended colleges and universities to offer mentoring opportunities, especially to help facilitate the academic success of academically underprepared community college students (Ramirez, 2009).

James (2008) found no significant difference among the various essay prompts in the use of ACCUPLACER WritePlacer Plus test, which is scored by the IntelliMetric automated scoring system. The literature review suggested very limited research in the

possible effects of prompts in scoring the writing essay of the ACCUPLACER placement test. Prompts refers to a given essay topic that is randomly generated by ACCUPLACER on its WritePlacer Plus test. The purpose of the study was to explore the effect of topic prompts on the electronic scoring of writing essays.

The sample data included 77 students, 39 females and 38 males enrolled at Thompson Rivers University (TRU) in fall 2004 and winter 2006. The sample population took the ACCUPLACER OnLine WritingPlacer Plus test designed to measure the writing skills of college applicants. The test contained 11 prompt essays that were reviewed and field tested by content experts. The essays were rated by three university English instructors and by the automated scoring system. The study results suggested no effect by the given topic on the electronic scoring system (James, 2008).

Sullivan and Nielsen (2009) concluded in their research study that a writing sample component is not necessary in the English course placement of students. The literature review on assessing students for course placement in college was extensive but notoriously ambiguous. The purpose of the research study was to determine if the writing sample component of college assessment is necessary to accurately place students in the appropriate course level.

The researchers examined institutional data to determine the correlation between standardized data and writing sample scores. On 3,735 ACCUPLACER Sentence Skills and 4,501 Reading Comprehension scores versus the local essay scores, the researchers found significant positive correlations. A major key finding of the study demonstrated that writing samples alone come with their own set of problems, and therefore do not necessarily provide accurate placement of students. Many other

factors contributed to individual student success in any given course, such as quality of teaching and motivation, so that finding a correlation between course placement and academic course success seemed problematic (Sullivan & Nielsen, 2009).

Financial Aid

Financial aid policies have made an impact on higher education access, especially among underserved students. Davis, Green-Derry, and Jones (2013) reviewed the incremental changes in federal financial policies, from the HEA of 1965 to contemporary legislative updates. The policy changes adopted through federal reauthorization by the different administrations had a clear impact on the ability of African-Americans and other minority students to access higher education. While the purpose of the HEA was to promote equity in opportunity for underserved students by making financial aid resources available for college, subsequent changes in aid policies appeared to negate the intent of the original legislation.

During the Carter administration from 1976 to 1980, the availability of federal financial aid in the form of grants and loans were expanded to make college accessible for all. Davis et al. (2013) noted that while the increase in the availability of financial aid made college accessible, the introduction of loans as a new form of financial aid presented new challenges for underserved students. The further legislative changes that occurred, such as increased loan interest rates and other prohibitive policies, may have contributed to the decline in higher education participation among African-American students during the 1980s and 1990s. The African-American students who did go to college may have ended up with a huge loan debt that contributed to having less income and wealth coming out of college.

Changes in federal financial aid policies did do the lives of underserved students not only while enrolled in college but also once they enter the workforce after college. It is of vital importance that legislators understand how college costs, the availability of financial aid, and the type of aid available can affect college opportunities for millions of underrepresented minority groups. Davis et al. (2013) concluded that a strict need-based methodology of federal student aid or adopting a wealth or raced based eligibility criteria would increase the college access and retention rates of African-Americans. In contrast, another study proposed that a merit-based methodology might not be the most effective way to promote college access.

In assessing the impact of state funding appropriations on higher education and outmigration, Toutkoushian and Hillman (2012) found no evidence that increasing funding for need-based grants resulted in increases in college attendance or reduced outmigration of residents. In contrast to federal resources, state resources and subsidies are only available to residents as a way of discouraging them from migrating to other states. The purpose of the study was to examine how increases in state financial aid appropriations, need-based grants, and merit-based grants impact college enrollment and student migration to other states.

To conduct the study, the researchers compiled a panel dataset of information for all 50 states from 1988 and all even-numbered years between 1992 and 2008. In addition, the researchers compiled data from the Digest of Education Statistics, the Integrated Postsecondary Education Data System (IPEDS), the U.S. Census Bureau, the Western Interstate Commission on Higher Education (WICHE), Grapevine, and the National Association of State Scholarship and Grant Aid Programs (NASSGAP). Using

descriptive statistics and one-way ANOVA to analyze the dataset, the results showed that as states increased their overall level of state financial aid and merit-based grants, access to higher education and a reduction in migration improved (Toutkoushian & Hillman, 2012). However, the researchers did not find any evidence that merit-based aid would yield the same impact. The study noted that some of the larger states created their program prior to the first year of analysis, which may have influenced the outcome, since gains in college participation at the beginning of the program are now reflected in the dataset.

Long (2008) investigated the impact of financial aid and its implications for public policies. While the literature review on financial suggests a positive impact on college access, questions remain regarding effective methods in the design and implementation of aid programs and policies. The purpose of the paper was to discuss the delivery of financial aid to improve college access and affordability. Largely based on meta-analysis of prior research on financial aid and statistical data, Long (2008) provided insights into the inner-workings of financial aid policies and their impact on college access.

The paper highlighted the vital importance of information to determine the effectiveness of financial aid policies. Another important lesson articulated in the paper was the ineffectiveness of newer programs, such as merit-based grants, tax credits, and savings incentives, in helping underserved students (Long, 2008). In contrast to Toutkoushian and Hillman's (2012) findings on merit-aid, Long (2008) concluded that increasing grants have been shown to be an effective policy to increase college

participation. Finally, Long advocated for a well-publicized aid program and simplifying the process to make it easily accessible to families.

In attempting to address why academically qualified low-income students fail to apply for financial aid for college, Tierney and Venegas (2009) proposed a cultural ecological model that build on the balance access model (St. John & Asker, 2003) and the conceptual model of student college enrollment (Perna, 2010). The research article proposed that financial aid information and college preparation are multi-faceted and longitudinal, and can potentially play a role in increasing access to higher education (Tierney & Venegas, 2009). The purpose of the research article was to explain how the cultural ecological model addresses the issue of college access from a cultural perspective. By reviewing and analyzing previous literature review on financial aid and two major college access models, Tierney and Venegas advocated for using a cultural framework to address the issue.

From a research perspective, qualitative methodologies such as interviews or ethnography may provide researchers with insights into the lives of students and families. The article highlighted the importance for the researcher to learn and understand how students interpret the various messages they receive about college access and the relationship between the decision-making process and actions. Finally, the cultural framework emphasizes the important role of adults in guiding the youths through the college process (Tierney & Venegas, 2009).

Socioeconomic Status

A vast amount of empirical research had supported the influence of the surrounding home and school environment in affecting individual behavior and the

decision to pursue higher education. The SES of a family serves as gauge to social status as constructed by the parental or non-biological adult guardian's level of education and occupation, and family income. The empirical research findings suggest that students from low SES families have fewer educational options, limited educational aspirations, and most likely benefit from program interventions.

Low-income families have fewer educational options. Smith (2008) argued how access to the American higher education system has become a privilege for upper-class youths. He had observed how youths from low SES families tend to be marginalized and unable to compete in the college choice game due to lack of parental involvement. The absence of parental involvement in the college planning of low SES families can be attributed to the lack of information about the potential benefits of college rather than inferior cultural background or misperceptions about higher education. To arrive at his proposed paradigm, Smith reviewed prior literature on parental involvement and college choice, including the exploration of assimilationist and critical frameworks.

Through the lens of assimilationist and critical frameworks, the author suggested four steps to a paradigm shift on how to empower low SES families to encourage their children to seek higher education. First, parental involvement in the process of identifying barriers must occur to anchor a paradigm shift. Second, the design of interventions must be supported by research. Third, the first to steps in the process should facilitate the active participation of low SES parents in the college decision-making process. Finally, higher education must proactively reach out to these families as a final step to benefit the society (Smith, 2008).

Louie and Holdaway (2009) examined how families from various ethnic backgrounds enroll their children in Catholic schools by focusing on the influence of religious affiliation and socioeconomic class. In addition, the researchers analyzed the social merits of attending and graduating from Catholic high schools by measuring educational attainment and records of arrests and incarceration of prior graduates. Understanding why immigrant families send their children to Catholic schools and the children's educational experience in religious affiliated institutions were identified as important goals of the study.

The researchers analyzed data collected for the Immigrant Second Generation in Metropolitan New York Study (ISGMNY). The study included survey data from interviews conducted between 1998 and 2001 from 3,415 young adults aged 18-32. The survey respondents included both native-born and second-generation immigrants. The study also incorporated qualitative data from in-depth interviews. For the purpose of conducting their study, the researchers analyzed data from interviews conducted with 74 respondents (Louie & Holdaway, 2009).

The study findings confirmed that although many low-income families would prefer to send their children to a Catholic school, the tuition cost of attending was identified as a barrier for many families. Except for native-born Whites, the socioeconomic status of a family was identified as an important determining factor in the decision to attend and graduate from Catholic schools. A sudden downward turn in a family's socioeconomic status could result in the withdrawal of their children from the school, creating unnecessary stress within the family (Louie & Holdaway, 2009).

Though the activist scholarship approach, Valencia (2012) described his efforts to prevent Park Oaks Elementary School in the Conejo Valley School District in Southern California from being subjected to closure by the school district board. Park Oaks Elementary had high enrollment of Mexican American and other Latino students from low socioeconomic status families. Due to the language barrier experienced by the minority group, the students of Park Oaks were most vulnerable for academic failure. The proposed outcome of the study was to demonstrate how Latino families can achieve educational equality without having to go through a litigation process. By demonstrating how families and the school developed a positive environment to promote student success, previous school closure cases have been decided in favor of the families who seek to avoid the hardship that results from moving their children to another school. While the initial outcome of the proposed school closure was decided in favor of the Latino families, the school board eventually closed down the school due to low enrollment and budget cuts as a result of the great recession.

Perry, Link, Boelter, and Leukefeld (2012) examined the relationships among gender, race, ethnicity, SES, and educational attitudes. The researchers explored their subject within the context of the underrepresentation of minority students pursuing careers in Science, Technology, Engineering, and Math (STEM). Using data from 182 sixth-grader participants of a project that promoted the use of technology to understand biomedical science, the research study focused on how gender, race/ethnicity, and SES accurately predict the educational aspirations, persistence, views of science, and educational self-efficacy of middle-school students.

The research design used descriptive statistics to identify the gender differences on baseline indicators and independent samples t-tests and a chi-square test to determine if gender differences among the sample were statistically significant. To determine the effect of gender, race/ethnicity, and SES while controlling for each of these variables, the researchers performed the Ordinary Least-Squares (OLS) regression analysis. The study reported an overall positive attitude towards education and science among the sample of middle school students. The African-American and Latino boys expressed a more negative attitude compared to boys from higher SES families, White boys, and girls of any race/ethnicity or level of SES. The differential in school and home environments that influenced educational experiences and social interactions explained the varying exposure to educational opportunities by minority boys (Perry et al., 2012).

Impact on educational aspirations. Almquist, Modin, and Ostberg (2010) examined how SES and peer status affect educational attainment. In addition, the study investigated the relationship between peer status and adult unemployment. To conduct their study, the researchers analyzed data from the Stockholm Birth Cohort Study, a longitudinal study of Swedish citizens born in 1953. The data were created in 2004-2005 using probability matching of the Stockholm Metropolitan Study and the Swedish Work and Mortality database. The original sample size of the study was comprised with 15,117 individuals who lived in Stockholm in 1963. Out of the original sample size, approximately 96% ($N = 14,294$) were positively matched between the two data sources and included in the analysis.

The results suggested that children from families with higher SES families and peer status were more likely than their counterparts to advance their level of education. Both factors hardly overlapped on the outcome. The differences in educational attainment had future consequences for the future labor market opportunities of the individual. The study noted a need to further investigate how SES and peer status impact future educational opportunities, as both appear to operate differently from each other, in relation to how individuals attain a higher educational level (Almquist et al., 2010).

Strayhorn (2010) measured the impact of background traits, academic preparation, and sociocultural capital on college academic achievement. The study attempted to predict undergraduate grades based on background traits, pre-college variables, and measures of sociocultural capital. The study used datasets from the National Education Longitudinal Study (NELS:88/90), which obtained a nationally representative sample of eighth-grade middle school students. After applying sampling weights to correct for the oversampling of some groups, the researcher included 171,936 African American males and 140,222 Latino males in the study sample population. In preparation for data analysis, the researcher recoded the dependent variables to exclude pass/fail grades and independent variables to reverse code participation in precollege outreach programs. For data analysis, the researcher performed descriptive statistics, hierarchical linear regression, and tests for significance of the variables.

The results showed how Black males tend to earn lower grades in college than Latino males. The study established significant relationships between independent and

dependent variables was found among Black males. Among all independent variables, SES had a strong correlation to academic performance. As for Latino males, those with higher levels of achievement in high school were more likely to do well in college (Strayhorn, 2010).

Bell, Rowan-Kenyon, and Perna (2009) examined what freshmen and junior level high school students know about college, how these students acquired college information, and how the level of information varies by high schools and states. While the researchers acknowledged the increase in college enrollment over the last 40 years, the literature review revealed gaps across demographic groups. The research study relied on prior work by analyzing the differences in student knowledge of financial aid, costs, college preparation and education needed, as well as the sources of college information. In addition, the study examined how the college information acquired by students varies based on SES of families served by schools and state policies.

The research used a multi-level case study methodology of college enrollment and data from 15 high schools across five states (California, Florida, Georgia, Maryland, and Pennsylvania). The researchers conducted focus groups and interviews of freshman and junior level students from 15 high schools for the purpose of collecting data. The data collected formed a case study database from which the researchers developed a preliminary list of codes to guide the data analysis (Bell et al., 2009).

The findings from this study pointed to the uneven structure among the high schools to provide college information to students, including the availability of educational opportunities and financial aid to support college access. The absence of structures for the purpose of dissemination of information to high school students was

found to be likely to result in lower college expectations for low-income students whose parents have most likely not attended college. The study noted how students who participated in Upward Bound and AVID were more likely to be knowledgeable about college and financial aid opportunities (Bell et al., 2009).

Bradley and Renzulli (2011) proposed a model for student dropouts with three outcomes: in school, pushed out and pulled out. Pushed out factors pertain to a student dropping out due to a school specific circumstance such as poor attendance while pull out refers to outside factors such as employment opportunity or family circumstance. A new model was necessary to expose the complex reasons why students drop out of high school. The research study used a restricted edition of the Educational Longitudinal Study dataset. The initial survey for the dataset was conducted in 2002 with a follow-up data collection 2 years later. The study had a sample size of 5,130 and only included Black, White, and Latino students. The sample excluded Native Americans due to small sample, Asian American because of low dropout rate, and students who identified themselves as multi-racial.

The findings confirmed the study hypotheses that race/ethnicity and gender effects both push and pull students out of school. Across all racial/ethnic groups, males were more likely to leave school due to suspension resulting from bad behavior. Low academic achievement has been to be a factor across all minority groups as a reason for leaving school. The differences in SES explained a higher likelihood of being either pushed or pulled out among Black students when compared with White students; Latino students remained more likely to be pulled out even after the researchers controlled for SES (Bradley & Renzulli, 2011).

Murdoch, Kamanzi, and Doray (2011) analyzed the role of social factors, academic history, and particularly the Canadian Programme for International Student Assessment (PISA) in influencing access and persistence within higher education. PISA has been designed to measure skills acquired outside the classroom such as reading that may reflect individual curiosity. The study examined data from the Canadian Youth in Transition Survey (YITS) and results from PISA survey conducted in 2000, excluding the mathematics and scientific culture portion of the test. The total sample from the five survey cycles included 14,458 youths.

To analyze the data sample, the researchers conducted multinomial regression to determine the influence of the identified factors on a predicted access and persistence outcome. The study organized the independent variables into three models: Model 1 PISA literacy scores; Model 2 PISA literacy scores and prior schooling characteristics; and Model 3 PISA literacy scores, prior schooling, and social factors. The researchers concluded that PISA literacy scores, school experience, and social factors have greater impact on access than persistence within higher education. The study confirmed the importance of developing literacy skills at the secondary school level for higher education access (Murdoch et al., 2011).

Muijs and Dunne (2010) examined factors other than previous academic achievement influencing setting decisions. Setting can be described as the phenomenon of organizing students into groups based on academic ability by subject. The practice was very common in many educational systems, particularly in England where the study was conducted. Proponents of the practice of setting argue that student ability or achievement should be the sole criterion used in student grouping.

Those who are critical of the practice claim that other factors, such as family socioeconomic status, gender, and ethnicity, influence the teachers in their setting decisions.

The researchers attempted to identify the factors that influence teachers in their setting decisions and the significant predictors of student groupings. To test their hypotheses, the researchers collected data through a survey of schools and performed an analysis of national datasets. The study randomly sampled 100 secondary schools, with 44 completing the survey. The researchers linked the questionnaire data to the National Pupil Database and performed a pupil level analysis using statistical tests and multinomial logistic regression models. The survey results showed that prior attainment and student ability influenced setting decisions. The study found social background and special education needs (SEN) significantly predicted the outcome of student grouping. These findings suggested that students without SEN and those from higher socioeconomic status are more likely to be grouped with the higher achieving students (Muijs & Dunne, 2010).

Leveling the playing field. Brown, Jimerson, Dowdy, Gonzalez, and Stewart (2012) examined the effects of the Second Step program to address the social and emotional competence of preschool to elementary level students of coping with school violence. Second Step is a violence prevention curriculum that promotes positive social skills and reduction in aggressive behavior. The curriculum was cited as a model program by the U.S. Department of Education in 2001 and by the National Panel for Evidence-Based School Counseling. The researchers proposed that Second Step

maybe a good fit for implementation in a high Latino, low SES, and English as a Second Language (ESL) population.

The study analyzed data collected from a elementary school in the central coast region of California. The elementary school was predominantly consisted of Latino (94%), Caucasian (3%), and African-American (1%). The majority of the students (92%) received free or reduced lunch and more than three-quarter of the population (79%) speaks English as a Second Language. During the 2010-2011 academic year, 403 pre-school through fourth grade level students participated in the Second Step curriculum administered in English. Out of 403 students, the study included 165 students in the study sample due to missing pre and post assessment data as a result of student absences, student attrition, and non-completion of appropriate forms by teachers. The final sample included 106 students from the third and fourth grade level students who completed the Behavioral & Emotional Screening System (BESS) and KASS assessments, as well as 59 randomly selected preschool through second grade students who completed the assessment.

The researchers analyzed their data using descriptive statistics and paired-samples t-tests to identify changes in social and emotional knowledge and behavioral and emotional risk. The results showed that there was a significant increase in both social and emotional knowledge and behavioral and emotional risk following the implementation of Second Step. The study noted that the Second Step curriculum was also effective in large-scale implementation targeting minority students from low SES families (Brown et al., 2012).

Mayer (2008) investigated the relationship between the design of an International Baccalaureate (IB) Diploma Program as a college preparatory program and the socioeconomic status of the students who participates in the program. The IB diploma program is an internationally recognized comprehensive program that provides access to highly trained teachers and high level curriculum. The researcher was motivated to embark on this research due to limited empirical evidence to support the success of the program in attracting minority students to participate in honors and gifted programs. In addition, high-achieving minority students do not perform academically as well as their White and Asian counterparts, resulting in gaps in academic achievement and educational opportunities.

Using a mixed methods approach to analyze data, the researcher presented the recruitment and admission practices employed by the program. The researcher conducted 63 interviews with school staff, parents, and IB administrators, and observed after-school activities such as program recruitment and dissemination of information to parents and families. In addition, the researcher analyzed longitudinal transcript data for students who attended Jefferson High School between 2000 and 2004. Jefferson High School can be described as a large urban high school that serves large population of minority Latino, Black, and Asian students.

The research findings showed that an open admission IB program was successful in attracting and retaining African American, Latino, and Native American students from low SES families. The researcher attributed the findings to IB teachers who believed in the ability of the students to successfully meet the high program standards. The academic retreats and club opportunities provided by the IB program

provide an environment for teachers and students to form trusting relationships. The finding confirmed the notion that the implementation of a rigorous academic curriculum served as a first step in the process of raising the academic achievement of Latino and African American students (Mayer, 2008).

Chizhik (2009) examined how the creative process of playwriting helped improve the basic writing skills of students from low SES families in a large urban middle school. The quasi-experimental research study investigated the outcome of a 9-week playwriting program on student writing skills, as well as in their writing confidence. Two teaching artists worked with a credentialed classroom teacher to conduct the playwriting program in weekly 2-hour sessions, which included active participation in exploration of theater skills and playwriting exercises.

The playwriting program was implemented in a large urban middle school in Southern California that serves approximately 1,400 students, with an 84% Latino population, 7% Whites, 5% Asian Americans, and 4% African Americans. About 95% of the student population qualified for the free or reduced lunch program. The experimental group in the study belonged to eight language arts classes ($N = 199$) in the eighth-grade level. A second group ($N = 95$) of eighth graders from the same middle school served as a comparison group to measure writing confidence. A larger third group ($N = 381$) of students who did not participate in the playwriting program served as the comparison group for the writing achievement measure (Chizhik, 2009).

The researcher conducted a 10-item pre-test and post-test measure gains in self-efficacy. In addition, the researcher analyzed the results of a validated District Writing Sample assessment that all students completed, both at the beginning and at the

conclusion of the academic year. The result of an ANOVA showed a significant improvement in the writing self-efficacy of students who participated in the playwriting program. The researcher also collected data through interviews of teachers who participated in the program. The theme of self-confidence and self-efficacy emerged in the qualitative analysis of interview data, supporting the value of the intervention program in engaging low SES students to improve basic writing skills (Chizhik, 2009).

Sackes, Trundle, and Bell (2011) explored the development of computer skills among young children enrolled from kindergarten to third grade. To examine the development of computer skills among the target population of young children, the researchers used the latent growth curve modeling (LGM) to analyze a subset data sample size ($N = 8,642$) from the Early Childhood Longitudinal Study-Kindergarten (ECLS-K) dataset. The data subset consisted of first-time kindergarten students who remained in the same school by the end of third grade. The researchers specifically used LGM to accommodate the analysis of longitudinal data.

The student confirmed that children who have access to a computer at home and belong to high SES families were more likely to possess baseline computer skills upon entering kindergarten. The study results showed that children who have access to computers at the kindergarten level are more likely to develop computer skills between kindergarten and the third grade level. While boys tend to possess a higher level of computer skills than girls upon kindergarten entry, the rate of development in computer skills appeared to be higher for girls than boys as they progress through third grade. By making computers available as early as the kindergarten level, children from low SES

families who do not have computer access at home were able to develop their computer skills (Sackes et al., 2011).

Rosen and Manny-Ikan (2011) explored the effects of a computer constructivist-learning environment on the academic achievement students from low SES families in Mathematics, Hebrew, and English as a Foreign Language. The Time To Know program was a comprehensive technology-rich learning environment implemented in Israel. By addressing the digital divide in schools, the program served to bridge the social gap that exists because of difference in SES among families. The researchers analyzed fifth-grade students ($N = 49$) from two low SES Israeli elementary schools who joined a Time To Know program in Israel and a second group of fifth-grade students ($N = 42$) who learned in a traditional setting. The study findings indicated that participation in the Time To Know program significantly enhanced student learning in Mathematics, Hebrew, and English. In addition, participation by students from low SES families in the program significantly narrowed their skills gap.

Lebens, Graff, and Mayer (2009) examined the impact of children's SES on their attitudes towards computers. The researchers were motivated to undertake the study due the growth in the number of children from low SES families in secondary schools in Germany and the digital divide that exists as children from low SES families have limited exposure to technology in their home environment. The digital divide was often perceived in terms of limited access to hardware devices rather than attitudes and behaviors towards the use of technology. The study participants ($N = 60$) consisted of children aged 11-14, with gender breakdown of 25 males and 35 females. Among all participants, 31 children came from low SES families, based on whether they received

financial support to purchase school equipment. The researchers administered a revised computer attitude scale for the purpose of measuring students' affective response towards technology. The scale consisted of 37 items, with 15 items measuring affect, 10 items for behavior, and 12 items for cognition. Using a one-way ANOVA, the researchers determined any differences in attitudes towards computers between children from average SES families and those from low SES families.

The study results suggested children from low SES families perceive the computer as an important learning tool, but remain very cautious of it despite exposure to high technology environments in schools. Perhaps the children from low SES families feel inferior about technology compared to those from average SES families due to their lack of computer access at home, resulting in a lower level of technology confidence in the school environment. The study findings suggested that access to computers does not sufficiently close the digital divide. The lack of social network support for low SES children and the prevailing stereotypes in their computer proficiency may be factors that need further investigation to improve the attitudes of children from low SES families towards computer usage (Lebens et al., 2009).

Holt, Bry, and Johnson (2008) investigated whether a 5-month theory-based adult mentoring intervention delivered by school personnel could enhance the school engagement among ninth grade urban minority adolescents. Specifically, the researchers examined the quality of mentoring relationships and how it affects student cognition and behavior. The study included 40 ninth grade students (47% Latino, 38% African-American, 5% White, and 10% other) from an urban mid-Atlantic public high school. The researchers divided the sample into two groups: a group comprising of 20

at-risk students who did not receive an intervention, and a second treatment group of 20 at-risk students who received a mentoring intervention. The second treatment group participated in Peer Group Connection, a universal mentoring program that focuses on ninth graders' transition into high school.

The researchers conducted a pretest survey at the beginning of participants' freshman year and a posttest survey near the end of the academic year. The researchers analyzed both descriptive and correlational data using t-tests, chi-squares, and ANOVAs to measure the differences in outcomes between the control and intervention group. The study outcome demonstrated the significant and positive effects of mentoring on teacher support, school belonging, and discipline (Holt et al., 2008).

Henderson (2009) examined the impact of a CO-OP Upward Bound program in leveling the playing field for underserved youth population. The program supported underserved youths by providing pertinent information, conducting activities, and offering guidance to prepare participants for college. Through school advocacy, social awareness, and personal motivation, CO-OP Upward Bound encourages program participants to pursue higher education. The longitudinal case study used a mixed methods approach to collect and analyze data. The research investigator analyzed archival data of performance indicators and interview data from 40 human subjects. The study population included all program participants and staff who were active in the program from 2003 through 2008. Through descriptive statistics, the investigator tracked performance indicators, such as GPA, high school graduation, college enrollment, and college retention of program participants ($N = 191$), including former participants ($N = 11$) who were no longer active in the program.

The study found CO-OP Upward Bound to be effective in making students from low-income and first generation families to enroll and persist in high education. The high level of contact required from program participants and focus on helping parents of Latino youths navigate the pre-college preparation were found to be vital factors that contributed to the success of the program. Furthermore, Henderson (2009) highlighted the importance of alumni tracking and retention to the success of CO-OP Upward Bound. By closely monitoring the progress of participants after they leave the program, CO-OP Upward Bound continued to support former students as they navigate the higher education system.

School Environment

Academic research has supported the notion that school environment may impact student learning. In addition to the physical attributes of an academic institution, school environment also pertains to the human relationships formed within the organization and with the surrounding community. Academic institutions that foster a positive environment would more likely generate a positive influence on student behavior, such as decision-making and goal setting; institutions that project a negative environment would most likely yield the opposite outcome. School environmental factors, such as belongingness, campus climate, communication, and teacher self-efficacy, demonstrate the quality of school environment. In addition, the quality of institutional leadership matters in affecting the campus culture (Hiatt-Michael, 2010).

Sense of school belongingness. Students who feel a sense of pride and affiliation with their school demonstrate a sense of belongingness or fit within the school environment. Students with high degree of sense of belongingness are more likely to

respect the institution by protecting the school's physical environment. In the case of the Latinos, tensions may arise when students from a minority group make an effort to fit or belong to a school that does not cultivate a welcoming campus environment. When Latino students do not have a sense of belongingness with an institution, they do not thrive within the school environment. The relationship and impact of school belongingness on student outcomes has been well supported by empirical research (Kuperminc, Darnell, & Alvarez-Jimenez, 2008; McMahon, Keys, Berardi, & Crouch, 2011; Roche & Kuperminc, 2012; Shiu, Kettler & Johnsen, 2009).

Roche and Kuperminc (2012) examined the construct of acculturative stress and its implications on school belonging and academic achievement. Acculturative stress pertains to feelings of confusion, anxiety, depression, marginality, alienation, psychosomatic symptoms, and identity confusion experienced by immigrants during the assimilation process in their new environment (Berry, 1997; Mena, Padilla, & Maldonado, 1987). By emphasizing a sense of school belongingness to minimize experiences of discrimination, Latino youths were more likely to thrive and reach their academic potential (Roche & Kuperminc, 2012).

The research methodology consisted of a sample of 199 Latino middle school students recruited from a southeast metropolitan area. The sample consisted of 80% immigrants from Mexico (61%), Central America (10%), South America (5%), and Caribbean (4%), while the rest (20%) was born in the United States. To address potential language barriers, the researchers administered the questionnaire by reading each question aloud and using Spanish translations. Using factor analysis, the researchers yielded discrimination and immigration-related stress as two dimensions of

acculturative stress, with immigration-related stress being associated with the length of time a youth had spent in the United States and discrimination stress affecting all immigrants. The findings supported the hypothesis that lack of school belonging may decrease the academic performance among Latino youths trying to fit in a new school environment (Roche & Kuperminc, 2012).

Kuperminc, Darnell, and Alvarez-Jimenez (2008) investigated factors associated with the academic success of a high-risk Latino population, focusing on school belongingness as a mediator between parental involvement and student achievement. Parent involvement refers to the various parental activities, such as attending school meetings, activities, and events, or communicating at home with the youth about their academic experiences and aspirations. The researchers anticipated the factors of school belonging and teacher expectations to facilitate between parental involvement and academic performance of Latino students.

A path model based on social capital theory suggested that a sense of belonging in school by Latino middle and high school students affects parental involvement that may contribute indirectly to how students adjust in the school environment. The study sample included Latino middle school students ($n = 195$, 58% female, average 13.8 years of age) and high school students ($n = 129$, 64% female, average 16.8 years of age). About 77% of participants were immigrants, mostly of Mexican descent. The research procedure included a survey assessing the family and school environment affecting the educational, social, and psychological adjustment of the sample participants. Other measures included teachers' ratings of their expectations for student

academic attainment and grades and the students' cumulative GPA obtained from school records (Kuperminc et al., 2008).

The results supported the researchers' assertion that perceived school belonging and teacher expectations mediated cross-sectional associations of parent involvement with academic adjustment. The study found much stronger links between parent involvement and academic adjustment among high school more than middle school students. Finally, the study did not support the notion of a significant relationship between middle school parent involvement and teacher expectations or its indirect effect on school grades (Kuperminc et al., 2008).

McMahon, Keys, Berardi, and Crouch (2011) proposed an ecological framework to examine school and individual influences on the academic achievement of African American and Latino students. This longitudinal study examined school and individual influences on academic achievement among African American and Latino students who transferred into more inclusive schools. The proposed ecological framework posited that the domain of organizational policies and practices, school environment, student-school connections, and psychological symptoms predict academic achievement.

The researchers tested the proposed ecological model with 111 students (49% female, 85% African-American, 13% Hispanic, and 2% White) from 16 schools over a span of 3 years. The study also collected and analyzed data from 13 teachers who reported on the inclusion practices of the nine public schools who accepted the transfer students. The research findings confirmed the researcher's hypothesis of organizational policies and practices of inclusion and student-school connections of belonging as predictors of higher academic achievement (McMahon et al., 2011).

Effective mentoring has been found to be associated with sense of school belonging among Latinos. Sanchez et al. (2008) examined the role of natural mentoring relationships in the academic performance among Latino high school students. The study participants reported the mentors' demographic characteristics and the nature of the mentoring relationships of up to three mentors in their lives. Practitioners used the resiliency theory to explain how youths who came from a challenging background can overcome life's challenges, given strong support and adequate resources.

The study participants consisted of 140 Latino high school seniors (52% female; mean age = 17.88) from an urban mid-western public school. The researchers used the Psychological Sense of Belonging Membership to assess the participants' sense of belonging in their school. The study supported prior research findings that the presence of a mentor was associated with fewer absences, higher educational expectations, greater expectancies for success, and sense of school belonging. The presence of mentors appeared to be of value in teaching the youths how to access additional school support, thus increasing their connection with the school (Sanchez et al., 2008).

Enrollment in AP courses can enhance a sense of belonging among Latino students. Shiu, Kettler, and Johnsen (2009) described the effects on sense of belongingness of placing Spanish-speaking students in an AP Spanish Language course in the 8th grade. The study participants included 58 Hispanic students (42 females, mean age = 14.33) from four middle schools who enrolled in an advanced AP Spanish Language class. The researchers selected a random sample of 20 Hispanic students (six females; mean age=14.33) as a comparison group.

The participants completed a 20-minute survey questions on parental involvement, peers, sense of belonging at school, and academic aspirations. The result of the data analysis indicated that the AP students appear to be more optimistic about their future and make friends who are academically inclined to succeed. The formation of sense of school belongingness as a result of enrollment in AP course during eighth grade appeared to motivate students to enroll in advanced courses in the ninth grade (Shiu et al., 2009).

Forming a social connection in high school appears to cultivate a sense of belonging in school. Vaquera (2009) explored the relationship between friendship formation, school engagement, and belonging among White and Hispanic students. The study employed the National Longitudinal Study of Adolescent Health, which is a nationally representative sample of adolescents in high school. The sample consisted of adolescents enrolled in grade seven through 12 (6,366 Mexican, 1,132 Cuban, 1,330 Puerto Rican, 4,446 Central/South Hispanic origin youth, and 46,592 non-Hispanic Whites) during the 1994-1995 academic year. The study findings showed that participants who reported having a best friend experienced fewer engagement problems and a much higher school belonging than those who did not have a friend. However, the positive outcomes appeared to only occur when students whose best friends attend the same school.

Chun and Dickson (2011) proposed a model consisting of two proximal process factors (parental involvement and culturally responsive teaching) and one psychological mediating factor (sense of belonging) to explain two outcomes (academic self-efficacy and academic performance). The current study addressed Hispanic adolescents'

academic performance by investigating the relationships among parental involvement, culturally responsive teaching, sense of school belonging, and academic self-efficacy and academic performance. The study included 478 Hispanic seventh graders (51.5% female) from the US-Mexico border region. The study demonstrated how significant indirect effects of parental involvement, culturally responsive teaching, and sense of school belonging on academic performance supported the proposed model.

Furthermore, academic self-efficacy was found to mediate the relationships among parental involvement, culturally responsive teaching, and sense of school belonging and academic performance. The researchers noted the value of collectivism adhered to within the Hispanic culture, which may have partially explained the study outcomes.

Holt, Bry, and Johnson (2008) investigated whether a 5-month, theory-based adult mentoring intervention delivered by school personnel could enhance the school engagement among ninth grade urban minority adolescents. The study included 40 ninth grade students (47% Latino, 38% African-American, 5% White, and 10% other) from an urban mid-Atlantic public high school. The researchers divided the sample into two groups: a group comprising of 20 at-risk students who did not receive an intervention, and a second treatment group of 20 at-risk students who received mentoring intervention. The study outcome demonstrated the significant and positive effects of mentoring on teacher support, school belonging, decision-making, and student discipline.

Communication. Hiatt-Michael (2010) posited that a successful partnership between home and school is largely dependent on the quality of communication. Poor communication by the school could dampen student and parental participation in

activities, which negatively impacts school environment. To successfully engage families in school matters, academic institutions must communicate effectively by reaching out to the families on a regular basis. Hiatt-Michael offered several practical recommendations for educators, such as strengthening district public relations, training for superintendents and board members, strategic use of technology, using parent liaisons or volunteers groups, and effective Parent Teacher Associations (PTAs).

Academic Achievement

A growing amount of research evidence points to the importance of non-cognitive traits, not only in performing well in school, but also later in one's career (Heckman & Kautz, 2012) and life. The term *non-cognitive* pertains to positive behavioral traits that are not commonly associated with knowledge acquisition as measured by verbal, quantitative, and analytical intelligence measures. Some academic scholars have referred to non-cognitive abilities as grit/perseverance (Duckworth, Peterson, Matthews, & Kelly, 2007) and delay of gratification (Mischel, Shoda, & Rodriguez, 1989).

Non-cognitive skills play a role in predicting college and life success, challenging a longstanding tradition in academia of placing more emphasis on cognitive ability as measured by standardized tests (Tough, 2012). To advance his perspective on education, Tough (2012) cited a research study involving students who fulfilled their secondary high school requirements by passing the General Education Development (GED) test.

To address the limitation of early research studies on non-cognitive skills that used self-reported measures, researchers have attempted to use a different approach in methodology. Heckman and Rubinstein (2001) used the GED program to demonstrate

the value of non-cognitive skills in predicting individual academic attainment and future earnings. By analyzing a previous research study (Cameron & Heckman, 1993) using data from the National Longitudinal Survey of Youth, the study compared the behavior of high school dropouts, GED recipients, and high school graduates. The sample population consisted of White males who responded to 22 yes/no survey questions with regard to illegal and delinquent behavior in 1980. The results of the data analysis suggested that while the GED population may possess the necessary cognitive skills to pass the test, they tend to be unreliable and lack the necessary discipline or perseverance to achieve life aspirations (Heckman & Rubinstein, 2001).

The High/Scope Perry Preschool Program was designed as an intensive intervention for at-risk children in Michigan during the 1960s. The study ventured to address the problem of high dropout rate and illiteracy among African Americans from poor families. Schweinhart and Weikart (2002) conducted the High/Scope Perry experiment to determine if early childhood education can help at-risk children improve academic achievement and life success. In 1962, 123 children from African American families in Ypsilanti, Michigan participated in a longitudinal preschool program that was designed to provide both short and long term benefits to at-risk children. The researchers assigned children who received a high quality learning preschool program into the program group. For those who did not participate in a high school preschool program, the researchers assigned them into the no preschool program group.

The researchers analyzed the status of participants in each group annually from ages 3 to 11, then at ages 14-15, 19, 27, and 40. At age 27, program participants earned a significantly higher wages and were more likely to own a home and a second

car and have a higher level of schooling. They were less likely to have depended on public assistance during the last 10 years and had fewer arrests than the non-treatment group. By age 40, the children in the treatment group earned significantly higher earnings than the non-treatment group, which resulted in higher tax revenues, lower criminal justice expenditures, and less welfare assistance (Belfield, Nores, Barnett, & Schweinhart, 2006; Muennig, Schweinhart, Montie, & Neidell, 2009). Accounting for the standard of errors from compromised randomization protocol, the researchers found the estimated rate of return of the High/Scope Perry Pre-School program to be statistically significant from zero and above historical return on equity (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010a).

Academic scholars have questioned the reliability of the High/Scope Perry Preschool Program experiment. Hanushek and Lindseth (as cited in Heckman, Moon, Pinto, Savelyev & Yavitz, 2010b) have observed that the sample size of the High/Scope Perry experiment was too small to make an inference about the outcome of the program or whether the study sample represented the general African-American population. Herrnstein and Murray (1994) claimed that the program had small estimated effects, with many not being statistically significant. Furthermore, Anderson (as cited in Heckman et al., 2010b) expressed a concern of selectively reporting statistically significance estimates during research analysis of the study. More recently, a group of scholars found that the proposed randomization protocol of the High/Scope Perry study was compromised, questioning the validity of the statistical procedures applied to analyze data.

Heckman et al. (2010b) developed a new set of tools designed to analyze data of actual experiments in real time. With the purpose of addressing the reliability and randomization protocol of the study, the researchers used the newly developed tools to reanalyze the data from the High/Scope Perry Preschool experiment. Heckman et al. (2010b) observed that the randomization protocol in the original study was compromised, a common phenomenon in many social experiments. Furthermore, the previous analysis on the High/Scope Perry Preschool study made the assumption that the experiment followed the intended randomization protocol. By combining methods, conditioning of background variables, and using small-sample permutation methods, Heckman et al. were able to address the reliability and randomization issues associated with the High/Scope Perry Preschool experiment. The result of the study found the effects of preschool program to be economically beneficial for both males and females, despite the compromised randomization, multiple-hypothesis testing, and small sample sizes. The data from High/Scope Perry research have been instrumental in the recognition of non-cognitive abilities on the labor market and social behavior.

Heckman, Stixrud, and Urzua (2006) analyzed the influence of cognitive and non-cognitive skills on income, education, employment, career, and negative behaviors. By considering both the cognitive and non-cognitive forces, it became possible to demonstrate how a model containing both elements could explain a wide array of individual behaviors. The analysis considered the effects of the school environment and family influence, which differed from methodologies used in previous research. The study used data from the National Longitudinal Survey of Youth, 1979 (NLSY79), containing income, education, and employment information from a cohort of youths

aged 14-22. To measure cognitive abilities, the study analyzed scores from the Armed Services Vocational Aptitude Battery (ASVAB) tests administered to sample participants in 1980. For non-cognitive measures, the study used the Rotter Locus of Control scale, which measures the level of control an individual feels he/she has in life. In addition, the study also used the Rosenberg Self-Esteem Scale to analyze non-cognitive skills. The researchers analyzed both sets of data using a standard least-squares analysis to determine the effects of cognitive and non-cognitive skills on wages, controlling for level of education.

The data analysis suggested that non-cognitive skills do strongly influence school decisions, which impacts labor wages. The analysis revealed that changes in non-cognitive skills have as much of an effect on behavior as changes in cognitive skills” a departure from the g theory which gave more weight to cognitive skills as a greater force in affecting socioeconomic outcomes of human behavior (Herrnstein & Murray, 1994; Jensen, 1998). A particular non-cognitive trait referred to as *grit* had been found to predictor of success in both academic and life goals.

Duckworth et al. (2007) investigated the significance of a particular non-cognitive trait called grit. Given the emphasis on cognitive intelligence or general mental ability, the study explored why some individuals accomplish more than others given equal measure of intelligence. The scholars defined grit as individual perseverance and passion to accomplish long-term goals. The study analyzed the data from two samples of adults ($N = 1,545$ and $N = 690$), Ivy League undergraduate GPA ($N = 138$), class retention in two courses from the United States Military Academy and West Point cadets ($N = 1,218$ and $N = 1,308$) and National Spelling Bee ranking ($N = 175$). Across six

studies, grit demonstrated an incremental predictive validity of success over and beyond cognitive traits and conscientiousness.

Mischel et al. (1989) reviewed several research studies that attempted to explain why some individuals are able to self-regulate effortlessly while others find it very difficult if not impossible. Most of the studies focused on delay of gratification, which is a central focus of self-regulation. In one method used to study delay of gratification, the researchers' framework emphasized personal decision to choose among many outcomes with differing values versus the length of time in which the outcome becomes available. The studies confirmed how delay time and outcome value predicted the choices made by individuals related to delay of gratification.

A second method devised at Stanford University examined how young children increased their ability to sustain their delay of gratification while waiting for preferred outcomes. By observing the 4-year-old children who participated in the experiment after they were given the contingency as to how they would attain a desirable outcome of delaying gratification, the researchers were able to investigate the psychological process and personal characteristics affecting the children's delay behavior and both social and intellectual competencies. In a follow-up study 10 years later when the children had become into young adults, the parents of the children who were capable of delaying gratification described their children as able to develop academic and social competencies, cope much better with frustration, and resist temptation (Mischel et al., 1989).

Casey et al. (2011) examined the behavioral and neural correlates of delayed gratification using functional magnetic resonance imaging (fMRI). The purpose of the

study was to investigate the long-term ability of adults to refrain from attending to alluring cues. The study sample ($N = 59$) included individuals whose ability to delay gratification was tested 4 decades ago at age 4 and who are now in their 40s. To conduct the study, the researchers conducted two experiments; in the first, the participants who were less able to delay gratification 4 decades ago showed less impulse control in their response to varying degrees of cues. The researchers used social cues, such as happy and fearful faces, to trigger individual impulses. In the second experiment, the researchers used fMRI to examine how the human brain affects delay of gratification behavior. Using ANOVAs and t-tests, the researchers analyzed data to test the study's predictions.

The outcome of both experiments suggested that individual resistance to temptation was a stable individual characteristic. Positive compelling cues seemed to influence the delay in gratification in individual behavior more than cognitive control. The ability to resist temptation may be strongly predicated by human brain circuitry. These findings confirmed the significance and predictive validity of delay ability in preschoolers for behaviors in later life (Casey et al., 2011).

Conclusion

The lack of research on GEAR UP's impact on Latino youths attending a large urban community college provided a compelling need to undertake the research project. The research project investigated how GEAR UP made a difference on the college readiness, financial aid awareness, and college academic success of a targeted population. In addition, the investigator determined the effectiveness of the various GEAR UP interventions on the program's intended purpose.

A comprehensive review of related literature and research supported the need to undertake the study. The evidence gathered during the literature review process substantiated the purpose of the study. Given the clarity of its purpose and the solid evidence uncovered in past literature, this research provided valuable insights on GEAR UP's impact on college access, readiness, and success, as well as the effectiveness of program interventions. The study findings should fill a gap in the current discourse, as program critics and supporters have posed the question, GEAR UP: What difference does it make?

Chapter 3: Methodology

The purpose of this research was to investigate the impact of a GEAR UP partnership project on college access, readiness, and success of Latino students. To determine the impact of the GEAR UP partnership project, the investigator posed four hypotheses to determine the program's impact on college placement levels, financial aid awareness, and academic achievement:

Hypothesis 1. There is no significant difference between *treatment* and *non-treatment* on the college English Placement Level among Latino students enrolled at a community college.

Hypothesis 2. There is no significant difference between *treatment* and *non-treatment* on the college Math Placement Level among Latino students enrolled at a community college.

Hypothesis 3. There is no significant difference between *treatment* and *non-treatment* on the filing of financial aid application among Latino students enrolled at a community college.

Hypothesis 4. There is no significant difference between *treatment* and *non-treatment* on college grade point average among Latino students enrolled at a community college.

Furthermore, the investigator explored the effectiveness of the various GEAR UP interventions on a targeted population of Latino students by asking the following research questions:

Research question 1. Which of the following GEAR UP interventions, if any, made an impact to prepare Latino students for college?

- Tutoring and Mentoring
- College Field Trips
- Shadow College Students
- Summer Math Program
- Career and Technical Education Boot Camps
- Financial Aid Workshops
- College Fairs
- Summer Bridge to College Course

Research question 2. How did the participation in GEAR UP Summer Bridge course make an impact, if any, in preparing Latino students for college?

GEAR UP Partnership

West Coast Unified School District and SoCal Community College (both fictitious names) entered into a 6-year GEAR UP partnership project that commenced in fall 2005 and ended in summer 2011. The GEAR UP partnership project targeted a student cohort beginning in middle school all the way through high school graduation. To fund the project, the West Coast Unified School District received a partnership grant from the U.S. Department of Education to oversee and serve as fiscal agent for the project. SoCal Community College and several other surrounding postsecondary institutions partnered with West Coast Unified School District to provide most of the interventions for the project.

Chapter 3 begins with a brief overview of the study design, explaining the chosen research design methodology and overarching description of the study. Following the overview of the study design, the investigator provides a description of the

characteristics of the target population, including the selection of variables used in the research project. In the Design section, the investigator describes the steps taken to accept or reject the research hypotheses and answer the research questions. To meet Institutional Review Board (IRB) standards, the investigator described the process taken to protect and disclose information to the human subjects. At the conclusion of Chapter 3, the investigator provides a summary of the methodology used to conduct the research.

Overview of Study Design

Creswell (2009) defines *worldview* as “a general orientation of the world and the nature of research in which the researcher holds” (p. 6). Researchers holding a pragmatic worldview tend to respond to actions, situations, and consequences. A pragmatic researcher does not commit to one particular approach, but rather, uses both quantitative and qualitative methods in his/her research. By holding a pragmatic worldview, the researcher enjoyed a certain amount of freedom to choose the methods, techniques, and procedures of research that are most appropriate for the study. From a pragmatic philosophical worldview, a concurrent mixed methods research design seemed most appropriate to undertake this research.

Creswell (2009) describes concurrent mixed methods procedures as those in which a research project analyzes both quantitative and qualitative data to formulate a comprehensive analysis of the research problem. For this research project, the analysis of quantitative data supported the acceptance or rejection of the hypotheses, which informed the impact of GEAR UP on college access and success. To explore the effectiveness of the various GEAR UP interventions on the target population, the

investigator collected and analyzed qualitative data. The use of qualitative data allowed the investigator to gain a richer perspective on and understanding of the targeted population. The qualitative process revealed insights that otherwise may have not been captured if the investigator had focused solely on quantitative methodology.

A case study research approach allowed the investigator to explore a specific issue through one or more cases within a bounded system (Creswell, 2007; Miller & Salkind, 2002). Creswell (2009) describes a case study approach as a strategy of inquiry that allows a researcher to explore a program, event, activity, process, or even individual persons. By acknowledging the personal experiences of the target population, the investigator identified themes and possible meanings that addressed the research questions.

From a cultural perspective, Tierney and Venegas (2009) advocate the use of qualitative methodology as a way to understand students and families within the context of their personal lives. The narrative and stories acquired through personal interviews offered the researcher a full-bodied way to understand the context of the information being derived from the data. The mixed methods approach in data analysis seemed appropriate to capture the intended purpose of this research.

Through concurrent embedded mixed methods strategy, the investigator collected both quantitative and qualitative data in a single phase (Creswell, 2009). For this research project, the quantitative data analysis of an archival data embodied the first half while the qualitative data analysis characterized the second half of the mixed methodology. By applying both quantitative and qualitative data methodologies, the research process completed a holistic assessment of GEAR UP. The final outcome of

the research project described the impact of GEAR UP on Latino students attending a large urban community college and the effectiveness of various program interventions on a targeted population of underserved youths.

Description of Population

The total population consisted of two cohorts ($N = 148$) who enrolled at SoCal Community College immediately after graduation from West Coast Unified School District high schools (see Table 2). The treatment cohort ($N = 74$) enrolled at SoCal Community College in fall 2011 after graduation from a GEAR UP participating high schools in June 2011. The non treatment cohort ($n = 74$), which served as the comparison group, enrolled at SoCal Community College in fall 2012 after graduation from the same West Coast Unified School District high schools a year later in June 2012. Since the GEAR UP partnership project between West Coast Unified School District and SoCal Community College officially ended in August 2011, the non treatment group did not have access to GEAR UP support services at the high school. SoCal Community College granted the investigator access to its archival data and allowed the collection of data through personal interviews a population sample (see Appendix C).

Table 2

Frequency Table Summary of Total Population by Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Treatment	74	50.0	50.0	50.0
Non Treatment	74	50.0	50.0	100.0
Total	148	100.0	100.0	

The researcher purposely established the retrospective comparison groups to control for and minimize any possible effect on outcomes as a result of historical and

maturational effects. Historical and maturational effects may come in form of varying levels of school policies, resources and budget, leadership, and campus culture that could possibly influence the research outcomes (CoBro Consulting & RTI International, 2010).

Hispanic and Latino Sub-Group

From the total population, the investigator identified a sub-group of students who self-identified on their college admissions application as being from the Latino demographic ($N = 91$). Due to their higher status dropout rate compared to the other demographics, the Latino population has been identified as an underserved group in higher education. The investigator analyzed the disaggregated archival dataset of variables collected from the Hispanic sub-group through quantitative methods. To determine the impact of GEAR UP, the investigator compared the outcome measures between the Latino treatment sub-group ($N = 47$) and Non Latino treatment sub-group ($N = 44$, see Table 3) from a selected set of variables.

Table 3

Frequency Table Summary of Hispanic and Latino Sub-Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Treatment	47	50.0	50.0	50.0
Non Treatment	44	50.0	50.0	100.0
Total	91	100.0	100.0	

The investigator invited a purposive sample of students from the Latino treatment sub-group to participate in personal interviews. The investigator sent an invitation letter (see Appendix D) to all 47 students identified in the Latino treatment sub-group by regular mail and email to inform them about the opportunity to participate in the

research project. The investigator interviewed 51% or the first 24 students who responded and agreed to do a personal interview for the research project.

Quantitative Methodology

To compare the outcome measures of the treatment and non-treatment sub-groups, the investigator opted for a quasi-experimental rather than a random assignment method. A quasi-experimental design emphasizes a traditional research format, offering a description of the participants, materials, procedures, and measures. For the purpose of conducting this research project, the investigator used student-level data as the unit of analysis, allowing a measurement in the amount of linkage between participation in GEAR UP services and college access, readiness, and success outcomes.

Participants

The participants consisted of 91 Latino undergraduates enrolled in lower division courses at SoCal Community College. All participants had previously attended a West Coast Unified School District high school that offered GEAR UP services to a specifically identified student cohort. The treatment cohort had access to GEAR UP services throughout their enrollment at the secondary school. By comparison, the non treatment cohort did not have access to GEAR UP services and graduated from the same high schools one year later.

Instrument

The investigator retrieved an archival dataset from SoCal Community College in lieu of using a survey instrument. The archival dataset consisted of four distinct variables to form the basis for quantitative analysis (see Figure 3). The first two

variables originated from the students' English and math college assessment placement. The third variable originated from the students' financial aid application record. A snapshot of the student's cumulative grade point average in fall 2013 served as the fourth variable to be analyzed in the study.

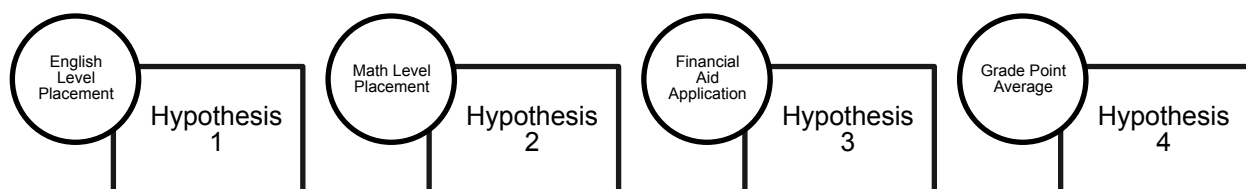


Figure 3. Quantitative variables and related hypotheses.

Prior to enrollment at SoCal Community College, the human subjects took the ACCUPLACER placement test for English and math to determine their appropriate college level placement level. SoCal Community College administered the ACCUPLACER placement test to assess the appropriate English and math college placement level of each participant. Researchers had previously established the predictive validity of ACCUPLACER scores for course placement through meta-analysis (Mattern & Packman, 2009). Using meta-analysis, Mattern and Packman (2009) examined a total of 47 studies from 17 unique institutions between 2001 and 2006. The results of the study indicated that between 58-84% of students were placed in the correct course level. The finding from the meta-analysis suggested a moderate to strong relationship between ACCUPLACER scores and course success.

English placement assessment. The ACCUPLACER English Placement Assessment consisted of three sections: a 40-minute Written Essay exam, a Reading Comprehension test, and Sentence Skills test. The SoCal Community College Assessment Center administered both the Reading Comprehension and Sentence

Skills tests though computerized on-line format only. The English Placement test took about 2 hours to complete or approximately 2 hours and 40 minutes if taken concurrently with the Math Placement Assessment. A group of faculty members from the English department read and evaluated the written essays.

The written essay counted for 60%, the Reading Comprehension 20%, and the Sentence Skills 20% of the final score that determines the college English level placement. The final test score determined if the student was placed in college level English course (English 101) or required remediation (English 28 or below). The college provided sample questions from the English assessment (see Appendix E) for students to use in preparation for the assessment. In addition, students had the option to purchase a Study App from iTunes to help them prepare for the ACCUPLACER assessments. Table 4 lists all the possible English placement course names and their corresponding numerical placement levels.

Table 4

English Placement Level and Course Name

Placement Level	Course Name
1	English 101
2	English 28 or 31
3	English 21 or 97
4	English 20
5	Learning Skills 1/2/7
6	ENL Referral
7	ESL 6A
8	ESL 5A
9	ESL 4A
10	ESL 3A
11	ESL 2A
12	ESL 1A
13	ESL Referral
14	No Placement
15	Ability to Benefit Only
16	Not Assessed

Note. The data in this table were taken from the SoCal Community College APMS database.

Students assessed at placement level 1 may enroll in English 101, a college level English course. All courses below placement level 1 were considered below college level and therefore considered remedial courses.

Math placement assessment. Table 5 lists all possible Math placement course names and their corresponding numerical placement levels. The final Math assessment score determined the student's placement in a college level Math course (Math 125 or above) or required remediation (Math 115 or below). The college provided sample questions (see Appendix F) for students to prepare for the Math assessment. Participants assessed at placement level 5 or above qualified to enroll in Math 125 to Math 261, which were all deemed college level Math courses.

Table 5

Math Placement Level and Course Name

Placement Level	Course Name
1	Math 261
2	Math 260
3	Math 230-240
4	Math 215-245
5	Math 125
6	Math 121-124A
7	Math 115
8	Math 113
9	Math 112
10	Math 105
11	Elementary Algebra Test
12	College level Math Test
13	Arithmetic Test
14	Elementary Algebra Test
15	NO College Level Math Placement
16	No Elementary Algebra Placement
17	No Arithmetic Test
18	Ability to Benefit Only
19	Not Assessed

Note. The data in this table were taken from the SoCal Community College APMS database.

The ACCUPLACER Math Placement Assessment consists of three sections: an Arithmetic test, an Elementary Algebra test, and a College Level Math test. The Math Placement test normally takes 1 hour and 30 minutes to complete or approximately 2 hours and 40 minutes if taken concurrently with the English assessment. In the computerized Math assessment, the test taker may skip certain questions and sections based on his/her performance on the first section of the assessment.

Financial aid application. The population sample identified in this study filed the Free Application for Federal Student Aid (FAFSA) to apply for federal financial assistance. The federal government makes the application available on-line on January 1 for students who plan to attend college in the following fall term. Postsecondary institutions use the information reported by students and parents on the FAFSA to determine student financial aid eligibility. Some states use the same dataset to determine student eligibility for state financial aid programs.

Cumulative grade point average. At SoCal Community College, the symbols depicted in Table 6 were used to grade courses.

Table 6

Evaluative Grade Symbols

Grade Symbol	Definition	Points
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Passing; less than satisfactory	1
F	Failing	0
P	Pass (at least equivalent to a "C" grade or better	
NP	Equal to "D" or "F" grade; units awarded are not counted in GPA	

Note. The data in this table are from the 2013-2014 SoCal Community College Catalog. Copyright 2013 by SoCal Community College.

The cumulative GPA refers to the average of the assigned grades on all completed degree applicable credit courses taken toward attaining an educational goal. To calculate the cumulative GPA, the total number of points was divided by the cumulative number credit courses attempted. A grade symbol (see Table 6) is assigned by the faculty at the end of each course term to reflect the student's academic performance based on a grading rubric. For the purpose of this study, the investigator took a snapshot of the students' cumulative GPA in fall 2013 for use in data analysis. Table 7 shows a summary of the archival dataset variables used in the quantitative analysis to determine the impact of GEAR UP on college placement levels, financial aid awareness, and academic performance.

Table 7

Independent Variables

Variables	Measure/Type	Values
GEAR UP	Nominal/Dichotomous	12011=Treatment; 12012 = Non Treatment
English Placement Level	Scale/Interval	Range: 1 - 16
Math Placement Level	Scale/Interval	Range: 1-19
Financial Aid Applicant	Nominal/Dichotomous	1 = FAFSA; 2 = NON FAFSA
Cumulative Grade Point Average	Scale/Interval	Range: 0.00 – 4.00

Data Collection

The Office of Institutional Effectiveness at SoCal Community College granted the investigator permission to access the institution's archival dataset for the purpose of conducting the research project. In addition, the Office of Institutional Effectiveness provided support for the planning, research, analysis, design, development, and project management services within the institution.

In support of research activities, the office made available high quality, easily consumable, reliable, and relevant college data to inform program, department, unit/division, and college-related decision making. To facilitate continuous quality

improvement within the institution, the Office of Institutional Effectiveness supported the investigator's intent to conduct a research project on the impact of GEAR UP on the Hispanic and Latino population. The archival dataset used to conduct the research project was made available from the district-wide student database warehouse.

The SoCal Community College District Office maintains all student level data stored in the Student Information System (SIS) database. The district computer programmers developed the SIS database for use by all colleges within the SoCal Community College system. Campus level staff may access the information from the database through a user interface developed by Digital Equipment Corporation (DEC). The data information from DEC legacy system may also be extracted for various purposes, including the building of reports and for research purposes.

The student level data variables analyzed in the study originated from various sources, including the college admissions application, the financial aid application, and academic records stored within the SIS database. College applicants disclosed their ethnicity as part of the college admissions application process, which the investigator used to identify Hispanic and Latino students. The investigator designated a treatment and non-treatment group using the high school graduation date and high school code as entered by the individual student on the college admissions application. The campus Assessment Center manually entered the individual assessment scores on the SIS database to record the English and math placement level of each student. Students who filed a FAFSA had an existing financial aid record in the SIS database, identifying the student as a financial aid applicant. Since the SIS database did not include a field for cumulative GPA, the investigator calculated the cumulative GPA by dividing the total

number of points by the cumulative number of credit courses attempted after the data had been imported into Microsoft Access database.

To access the student data variables needed to conduct the study, the investigator queried the variables from the SIS database using the Microsoft Access. With support from the Office of Institutional Effectiveness and database manual documentation from the district Information Technology department, the investigator identified the appropriate tables for each variable. By performing a query, the investigator extracted the specific variables needed for the research project. In addition to the identified variables needed for analysis, the investigator also extracted the demographic and student contact information to create the complete dataset (see Appendix G). The investigator exported the complete list of student level variables to a Microsoft Excel spreadsheet format in preparation for importing into the IBM SPSS predictive analytics software to perform the quantitative data analysis.

Qualitative Methodology

The qualitative phase of the research project determined the effectiveness of GEAR UP interventions in mediating between the participant's socioeconomic status, sense of school belongingness, and personal character development and their ability to access and succeed in college. The GEAR UP partnership between West Coast Unified School District and SoCal Community College specifically targeted underserved students who may not have had the resources to prepare for college. A review of the literature review suggested the increasing role of school belongingness and personal character development in determining college and life success.

To implement the qualitative phase of the research project, the investigator conducted personal interviews with randomly selected participants from the treatment cohort. Miller and Salkind (2002) describe the interview process as a personal contact between the interviewer and interviewee. The interview session can range from a highly structured session with pre-prepared questions or an informal talk with minimal structure. Ideally, Miller and Salkind recommend a maximum of 45-minute interview sessions to avoid weariness and decrease in interest by the interviewee.

The qualitative section of the research project fell under the case study approach. The research project inquired about the effectiveness of various GEAR UP activities, which were bounded by a system, time and place, and activities within an identified program. In this particular study, the investigator studied a single program or what is often referred to as a *within-site study*.

The case study approach focused less on the behavioral patterns of the group and more on the in-depth description of a process, program, event, or activity (Creswell, 2007; Miller & Salkind, 2002). Creswell (2007) suggests a case study structure with a problem identified, the context or setting of the problem bounded, the presence of issues, and finally, the emergence of *lessons learned* to advance the practical and useful study implications.

Participants

The college admissions application served as the primary source via which the investigator identified the participants for this study. The investigator queried college applicants who graduated in fall 2011 and fall 2012 from a specific set of high schools that participated in the GEAR UP partnership project. From this pool, the investigator

identified applicants who self-reported as belonging to the Hispanic and Latino category on the demographic section of the application.

The investigator interviewed 51% of the original treatment cohort ($N = 47$), regardless of their college enrollment status at the time of data collection (see Appendix H). The gender make-up of the original treatment cohort consisted of 43% female ($N = 20$) and 57% male ($N = 27$). At the time of data collection in fall 2013, 2 years had passed since the individuals in the treatment cohort had graduated from high school in spring 2011. Forty-nine percent of human subjects in the treatment cohort ($N = 23$) were still actively enrolled at SoCal Community College District in fall 2013.

The interview participants consisted of individuals ($N = 24$) from the treatment cohort who agreed to be interviewed for the research project. The gender make-up of the interviewee cohort consisted of 46% female ($N = 11$) and 54% male ($N = 13$). Fifty-eight percent of students in the interviewee cohort ($N = 14$) were still actively enrolled at SoCal Community College District in fall 2013. The majority of the participants were interviewed in person ($N = 13$), with some opting to be interviewed by phone ($N = 11$) to accommodate the human subjects' request.

Instrument

For the purpose of addressing the research questions, with input from the dissertation committee the investigator developed eight interview questions. Miller and Salkind (2002) offer several points to consider in the design and construction of interview questions. In the development of the open-ended interview questions, the investigator used several criteria to determine the appropriateness of each question.

The investigator clarified the relationship between the interview questions and research questions to ensure that the data captured addressed each research question. To increase clarity, the formulated open-ended questions used simple language that was appropriate for the interviewee. The investigator organized the interview questions in a logical sequence to achieve an efficient interview process. Prior to conducting the actual personal interviews, the investigator pre-tested the questions on students Latino students who were not part of the population, making final adjustments to improve the flow of the interview.

To gain insights on the development of effective survey instrument, the investigator attended the GEAR UP conference in San Francisco on July 2013. At the conference, the investigator attended several sessions to learn about the various instruments used by professional researchers to capture data for the purpose of conducting GEAR UP research. CoBro Consulting, a consulting research and consulting firm that provided data management and evaluation services for GEAR UP institutions, offered a post-conference training workshop on quantitative and qualitative research methodologies. The investigator's participation in the post-conference training workshop provided useful information that helped in the development of questions for the personal interviews. For example, a presenter from CoBro Consulting suggested asking the human subjects about recommendations to improve GEAR UP as a final question, which the investigator adopted as the final interview question.

Data Collection

To initiate the data collection process for the qualitative portion of this research project, the investigator invited prospective human subjects ($N = 47$) to participate. Upon the approval of the application for exempt review by the Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB; see Appendix I), the investigator sent an invitation message to prospective human subjects' personal and college email addresses as listed on the college record. In addition to sending of the message via email, a hard copy of the invitation message was mailed to the human subjects' regular mailing address.

Out of the 47 invitations mailed, only one letter was returned as undeliverable by the postal service. Two students replied to the email expressing an interest to be interviewed for the study. The investigator also contacted the prospective human subjects by telephone as a follow-up to the formal invitations.

To facilitate the in-person and telephone interviews, the investigator used several equipment and methods to capture the qualitative data. The investigator used a Zoom H2n Handy Recorder, which captured the recorded audio at Wav44.1kHz/16 bit. To communicate with the human subjects by telephone, the investigator used either a regular office telephone with speakerphone capabilities or through Skype communication application installed on an Apple iPad tablet. During the personal interview process, the investigator took field notes (see Appendix J) to capture any relevant information that may have been relevant to the research, such as non-verbal cues or other notable related background information.

The investigator conducted two pilot interviews to test the flow of both in-person and telephone interviews. The investigator conducted the initial pilot in-person interview with a Hispanic male student. To test the effectiveness of the telephone interview process, the investigator conducted a pilot telephone interview with a Hispanic female student. For the most part, both pilot interviews were successful so that the investigator only made a minor adjustment to the telephone interview protocol. For the telephone interview protocol, the investigator mailed a hard copy of the Participant Consent Form with a self-addressed stamped envelope to make it easier for the human subjects to return the signed document. The change in protocol benefited human subjects who had no access to a scanner or fax machine to return the signed Participant Consent Form electronically.

Interview setting. The semi-structured interviews were conducted in a centrally located quiet private room with at SoCal Community College. For the convenience of the human subjects, the investigator provided several location options to conduct the interview. The available options included the campus Student Union building, the campus library, the Student Services Village, or the Administration building. The investigator provided the necessary accommodations to ensure that the human subjects felt comfortable during the interview process.

To control for bias that may have resulted from environmental factors, the interviews were conducted in a private office with similar room dimensions for all interviewees. Once the investigator and interviewee had agreed on an interview date, the investigator sent a map of the location, the date and time of the interview, a copy of the Participation Consent Form (see Appendix K), and a copy of the Interview

Questions (see Appendix L) to the interviewee. By providing the interviewee with a copy of the Participation Consent Form in advance, the interviewee had an opportunity to review the terms prior to the actual interview. Due to a low response rate from prospective interviewees, the investigator followed up with telephone calls after 1 week of sending out the invitations. On the day prior to the interview date, the investigator called the interviewees to remind them of their scheduled interviews.

Since only Latino students were interviewed in this project, the investigator made an effort to address any language barriers between the interviewer and the interviewee. The accommodation included conducting the interview in the interviewee's native language of Spanish (see Appendix M). If requested during the initial response to the invitation, the investigator could have arranged to hire a bilingual graduate research assistant to conduct the interviews and translate the recorded interview in English. The investigator informed the prospective interviewees of this option in the invitation letter. None of the human subjects requested the interview to be conducted in Spanish.

The investigator scheduled each personal interview for 30 minutes, allowing the interviewee approximately 4 minutes to answer each question. To avoid interview fatigue, no more than three interviews were scheduled on a given day. Upon arrival at the interview site, the researcher reviewed the consent form with the interviewee and requested that the interviewee sign the document. The investigator made it clear that the interviewee had a final opportunity to decline participation in the study. Prior to commencing the interview, the investigator reminded the interviewee that the session would be recorded and the permission was secured as part of the consent form. In addition to the audio-recorded personal interviews, the investigator made handwritten

notates to capture personal perspectives for further probing or to document clarification that may not have been captured in the recorded audio.

During the actual interview sessions, the researcher adhered to the following interview protocol for asking questions and recording answers:

1. Heading – state the date, location, name of interviewer and numeric code to identify the interviewee
2. Instructions – a set of standard procedures to be followed for all interviews
3. Questions – open with an ice-breaker question followed by the pre-determined interview questions and a concluding statement
4. Probes – to follow up and ask individuals to explain their ideas in detail or elaborate on their answers
5. Space – a break between questions to record responses
6. Final Statement – a final gesture to thank the participant for his/her time spent during the interview and distribution of gift card

Telephone interviews. As a back-up interview format, the investigator allowed the personal interviews to be conducted by telephone. The added flexibility of a telephone interview ensured that no potential interviewees were declined because of inconvenience as a result of distance. In conducting telephone interviews, the investigator followed exactly the same interview protocol as with in-person interviews. Out of the 24 human subjects interviewed, 11 elected to be interviewed by telephone.

After receiving an active confirmation from a human subject to be interviewed by telephone, the investigator arranged to send a copy of the Participant Consent Form and Interview Questions by email. The investigator scheduled a date and time for a

telephone interview to be conducted that was convenient for the participant. At the beginning of the telephone interview, the investigator provided an opportunity for the participant to ask questions about the research and interview protocol. After the telephone interview, the investigator sent a \$15 gift card to the subject's mailing address (as confirmed by the human subject), a copy of the Participant Consent Form, and a self-addressed stamped envelope for the interviewee to return the signed document.

Protection of Human Subjects

The investigator anticipated ethical issues that could have arisen during the entire research process. To eliminate any potential risks that could harm the human subjects and the research site, the investigator followed the specific research procedure as approved by the IRB at Pepperdine University. Prior to conducting the personal interviews, the investigator conveyed the purpose of the research project to each interviewee as part of the participant consent form. The investigator protected the confidentiality of human subjects and the research site by articulating the long-term protection of the collected data in the research procedures.

During the writing and dissemination stage of the final manuscript, the investigator avoided biased language against the human subjects, including the suppression, falsification, and invention of findings. In the spirit of transparency, the investigator disseminated the release of the study design so the readers could judge the credibility and merit of the research project.

Disclosure. During the recruitment of prospective interviewees for personal interviews, the investigator disclosed the purpose of the research project to avoid any deception that might have occurred if an interviewee understood a purpose that differed

from what the investigator intended to seek. As part of the initial invitation to participate in personal interviews, the investigator explicitly disclosed the purpose of the study to potential interviewees. In addition to the disclosure of the purpose, the investigator provided an opportunity for the interviewee to ask questions or seek clarification about the research project.

Upon the interviewee's acceptance of the interview offer, the investigator provided a copy of the participant consent form, which clearly stated the purpose of the research project, including an acknowledgement of the protection of the interviewee's rights during the interview process. On the day of the interview, the investigator allowed the interviewee to ask any questions about the purpose and nature of the research project. The Participant Consent Form also disclosed the interviewee's right to opt out of the research project.

Institutional review board. The investigator respected the rights of each participant and location in this research project. The human subjects who participated in the study were at least 18 years of age at the time of the study. The investigator explicitly informed all human subjects that the participation in the study was strictly voluntary. Since the investigator had no intent to disclose the identity of the human subjects, the potential risk of harm to the participants was minimal to none. Prior to conducting the research project, the IRB at Pepperdine University approved the research proposal. The documents submitted to IRB included a Certification of Completion from the National Institutes of Health (NIH; see Appendix N), which demonstrated the primary investigator's successful completion of the NIH web-based training course *Protecting Human Research Participants*.

None of the participants stated a preference to disclose their identity, making it unnecessary for the investigator to permit the participant from retaining ownership of his/her voice. None of the participants disclosed harmful or highly sensitive information, such as child abuse.

Data permission and safeguards. The investigator followed SoCal Community College protocol in seeking permission to obtain and use participants' archival data. SoCal Community College granted the investigator access to the archival data and permission to interview the selected human subjects. The document informed the research site of the time frame of the study, potential impact, and outcomes of the research. The investigator attached a copy of the invitation letter and interview questions with the Research Application Form. To further respect the research site, the investigator remained cognizant of the possible disruption the research project may bring to SoCal Community College by scheduling the interviews when they least intruded on the research site and participants.

To protect the human subjects, the researcher assigned a numeric code in lieu of personal identifiers in the audio-recorded interviews. During the transcription process of the recorded data, the transcriber identified the human subjects only by the assigned numeric code.

During the data analysis and interpretation stage of the research project, the investigator protected participants' confidentiality, safeguarded the data, and ensured the accurate accounting of the data. To fully protect the confidentiality of the human subjects, the investigator removed any personal identifiable information, such as social security number, name, and date of birth from the archival dataset. Once the

investigator had extracted the archival dataset the database, the investigator added password protection to the file for added security. The data file was kept in a computer hard drive that required an additional user ID and password to gain entry.

After the transfer the archival data file from one hard drive to another using a Universal Serial Bus (USB) drive, the investigator reformatted the USB drive to fully erase the file from the USB drive. In addition to using a USB drive, the investigator used a secure file transfer protocol (ftp) format to move the location of the archival data. To ensure the accurate accounting of the data, the investigator described any procedure that required recoding in preparation for data analysis. To ensure the accurate capturing of interview data, the researcher prepared a transcription of each interview in preparation for data analysis.

After the completion of the research project, the investigator removed all data from the computer hard drive and archived the records on a compact disc. The compact disc will be stored in a locked safe, which is located in the researcher's residence in Sherman Oaks, CA. The investigator has labeled a destruction date of June 2019 on the compact disc.

Bias. In the preparation of the final manuscript, the investigator had carefully guarded against language that could potentially be perceived with biased against the human subjects. The investigator edited the final manuscript, with guidance from the chair and committee members to address issues of potential biases. To guard against any falsification, suppression, and invention of findings, the investigator made the data analysis and interpretation processes transparent to the chair and committee members.

The investigator articulated the study design of the research project on the study abstract to inform readers about the nature of the study.

The investigator administered the GEAR UP program as part of his professional duties at SoCal Community College. Because of his active role in the administration of GEAR UP, the investigator remained cognizant of his personal and professional bias throughout the implementation of the research project to avoid influencing the outcome of the study. The investigator made a commitment to being aware of his role and made every effort to maintain an impartial objectivity at the highest possible standard throughout the research process.

Chapter 4: Findings

The purpose of this study was to investigate the impact of GEAR UP on college access, readiness, and success of Latino students enrolled at a community college. Through mixed-method research design, this research project implemented both quantitative and qualitative methods to arrive at the study findings. Through quantitative analysis of an archival database and text analysis of qualitative data from personal interviews, the study determined the impact of GEAR UP and its interventions on a targeted underserved population.

The investigator analyzed an archival dataset to determine the impact of GEAR UP on college placement levels, financial aid awareness, and college academic success. The archival dataset variables included English placement level, math placement level, financial aid application status, and cumulative GPA. To analyze the quantitative archival dataset, the investigator performed a Pearson Chi-Square test and t-test inferential statistical analyses to compare the performance outcomes of the treatment and non-treatment groups.

Furthermore, to determine the impact of GEAR UP on an underserved student demographic, the study explored the effectiveness of the various GEAR UP interventions. Using qualitative methodology, the investigator analyzed data collected from personal interviews with Latino GEAR UP participants. The investigator interviewed 24 human subjects who were each asked eight questions about their personal experience with the GEAR UP interventions. Through case study data analysis and interpretation process, the investigator developed themes to determine the effectiveness of GEAR UP program interventions. To inform readers about the study

findings, the investigator presented the data analysis results from both quantitative and qualitative methodologies.

To present the study findings in Chapter 4, the investigator described the process used to conduct the quantitative data analysis. The investigator restated the four research hypotheses followed by their corresponding data analysis and interpretation. For each hypothesis, the investigator presented the corresponding Pearson Chi Square or t-test table produced from the IBM SPSS Version 21 predictive analytics software. After the presentation of quantitative data analysis results, the investigator described the qualitative data analysis process, restated the research questions, and presented the results from textual data analysis and interpretation. Chapter 4 concludes with a summary of salient findings at the end of the chapter.

Quantitative Data Analysis Process

The investigator performed several steps to retrieve and prepare the archival raw data for analysis. Using Microsoft Access, the investigator extracted the raw data of the identified variables for each human subject participant. The Office of Institutional Effectiveness provided support in the identification of tables within the database from which the variables could be retrieved. Once all the raw data variables had been extracted from the database, the investigator exported the raw data to Microsoft Excel for preparation and to check for data integrity, such as data duplication. The duplication of data may exist if a human subject participant took an assessment test more than once.

The investigator imported the unduplicated raw data stored in a Microsoft Excel spreadsheet into the IBM SPSS Version 21. To perform a quantitative data analysis on

the raw archival data, the investigator used the IBM SPSS software. Within the IBM SPSS software, the investigator reviewed the data by performing a visual inspection of the raw data to identify anomalies.

During inspection of raw data, the investigator observed the existence of multiple records on a few students. This phenomenon occurred when a student took the assessment test multiple times. To maintain data integrity, the investigator combined any multiple records into a single record, deferring on the higher English or math placement level to represent the student's performance. Other than the presence of multiple records in the archival dataset, the investigator found no other data anomalies that may have compromised the validity of the data variables to be analyzed. Within the IBM SPSS software, the investigator updated the label and values identifier of certain variables to clarify its meaning.

To measure the impact of GEAR UP on college placement levels, financial aid awareness, and college academic performance, the investigator compared the outcome measures of the identified variables from the treatment and non-treatment cohorts. The IBM SPSS software provided the investigator with a mechanism to calculate the independent samples t-test for the purpose of comparing the outcome measures on English and math placement levels and cumulative grade point average between the treatment and non-treatment sub-groups. The independent samples t-test was the appropriate test because the placement levels and cumulative GPA used a scale/interval data structure rather than a dichotomous structure.

To determine GEAR UP's impact on financial aid awareness, the investigator performed a Chi-square test to compare the outcome measures of the treatment and

non-treatment sub-groups. The investigator performed a Chi-square test because the financial aid application variable is dichotomous: meaning the student either applied for or did not apply for financial aid. For all inferential statistical tests, the investigator set the confidence level at 95% as the threshold to determine significance of outcome measures.

To determine the impact of GEAR UP on the intended target population of Hispanic and Latino demographic, the researcher applied inferential statistics for the purpose of analyzing the collected archival data from SoCal Community College. Miller and Salkind (2002) described the goal of inferential statistics as to arrive at a conclusion with a probability of an outcome being attributed to chance rather than to some hypothesized cause. A central theme of inferential statistics would be the concept of statistical significance testing, which requires subjective judgment in setting a predetermined acceptable probability of making an inferential error as a result of sampling error. In this research project, the investigator hypothesized that the difference in the English and math college placement level placement, financial aid application status, and cumulative GPA between the treatment and non-treatment groups would be insignificant. To determine the significance between the outcome measures of the two retrospective groups, the investigator applied the t-test and Pearson Chi-Square test.

The Pearson Chi-Square tested the hypothesis of two nominal variables. Both retrospective groups of treatment and non-treatment and financial aid dichotomous variables fell under the nominal level. A Pearson Chi-Square test yielded a significance level or p -value, which allowed the investigator to determine the significance of the

relationship between sub-groups. The researcher tested the significance of relationships at a 95% confidence level to determine the statistical significance of relationships. A confidence level of 95% is a standard confidence level in most social science research.

Quantitative Results

Hypothesis 1. There is no significant difference between treatment and non-treatment on the college English Placement Level among Latino community college students.

Tables 8 and 9 below show the results of t-test data analysis for English Placement Level.

Table 8

Results of t-test Data Analysis for English Placement Level: Group Statistics

	Gear Up	N	Mean	Std. Deviation	Std. Error Mean
English Placement Level	Treatment	47	3.94	4.706	.686
	Non Treatment	44	5.89	6.574	.991

Table 9

Results of t-test Data Analysis for English Placement Level: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
English Placement Level	Equal variances assumed	9.708	.002	-1.635	89	.106	-1.950	1.193	-4.320	.420
	Equal variances not assumed			-1.618	77.484	.110	-1.950	1.206	-4.351	.450

Data interpretation. On average, Latino students placed higher in English placement level when exposed to GEAR UP ($M = 3.94$, $SE = .686$) than those who were

not part of a GEAR UP cohort ($M = 5.89$, $SE = .991$). This difference was not significant at $(77.484) = -1.618$, $p > .05$. The results represent a weak sized effect, $r = .18$.

Because the Sig. value of .002 on the Levene's Test for Equality of Value is less than .05, the assumption of homogeneity of variance has been broken, so it would be more appropriate to look at the second row on Table 9 for the t-test value. Since the results of the t-test indicate no statistically significant difference in the English placement levels of the treatment and non-treatment, the study *accepted* null Hypothesis 1.

Hypothesis 2. There is no significant difference between treatment and non-treatment on the college Math Placement Level among Latino community college students.

Tables 10 and 11 below show the results of t-test data analysis for Math Placement Level.

Table 10

Results of t-test Data Analysis for Math Placement Level: Group Statistics

	Gear Up	N	Mean	Std. Deviation	Std. Error Mean
Math Placement Level	Treatment	47	9.28	3.977	.580
	Non Treatment	44	10.36	4.765	.718

Table 11

Results of t-test Data Analysis for Math Placement Level: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
MATH PLACEMENT LEVEL	Equal variances assumed	2.135	.147	-1.184	89	.239	-1.087	.918	-2.911	.737
	Equal variances not assumed			-1.177	83.982	.242	-1.087	.923	-2.923	.749

Data Interpretation. On average, Latino students placed higher in Math placement level when exposed to GEAR UP ($M = 9.28$, $SE = .580$) than those who were not part of a GEAR UP cohort ($M = 10.36$, $SE = .718$). This difference was not significant at $t(89) = -1.184$, $p > .05$. The results represent a weak sized effect, $r = .12$. Because the Sig. value of .147 on the Levene's Test for Equality of Value was greater than .05, the assumption of homogeneity of variance was not broken, so it would be more appropriate to look at the first row on Table 11 for the t-test value. Since the results of t-test indicate no statistically significant difference in the math placement levels of the treatment and non-treatment, the study *accepted* null Hypothesis 2.

Hypothesis 3. There is no significant difference between treatment and non-treatment on the filing of financial aid application among Latino community college students.

Tables 12, 13, 14, 15 and 16 below show the results of Pearson Chi-Square data analysis for financial aid. Table 12 provides information on the sample size and any missing cases. The summary shows no missing cases observed during the processing of the financial aid data. Table 13 shows the distribution breakdown of FAFSA application among Treatment and Non Treatment with corresponding percentage within FAFSA and GEAR UP applicants.

Table 12

Results of Pearson Chi-Square Data Analysis for Financial Aid: Case Processing

Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
FAFSA APPLICANT * GEAR UP	91	100.0%	0	0.0%	91	100.0%

Table 13

*Results of Pearson Chi-Square Data Analysis for Financial Aid: FAFSA APPLICANT ***GEAR UP Crosstabulation*

			GEAR UP		Total	
			Treatment	Non Treatment		
FAFSA APPLICANT	FAFSA	Count	36	25	61	
		Expected Count	31.5	29.5	61.0	
		% within FAFSA APPLICANT	59.0%	41.0%	100.0%	
		% within GEAR UP	76.6%	56.8%	67.0%	
		% of Total	39.6%	27.5%	67.0%	
	No FAFSA	Count	11	19	30	
		Expected Count	15.5	14.5	30.0	
		% within FAFSA APPLICANT	36.7%	63.3%	100.0%	
		% within GEAR UP	23.4%	43.2%	33.0%	
		% of Total	12.1%	20.9%	33.0%	
Total	Count	47	44	91		
	Expected Count	47.0	44.0	91.0		
	% within FAFSA APPLICANT	51.6%	48.4%	100.0%		
	% within GEAR UP	100.0%	100.0%	100.0%		
			% of Total	51.6%	48.4%	100.0%

Table 14

Results of Pearson Chi-Square Data Analysis for Financial Aid: Chi-Square Tests

	Value	df	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.022 ^a	1	.045		
Continuity Correction ^b	3.177	1	.075		
Likelihood Ratio	4.055	1	.044		
Fisher's Exact Test				.073	.037
N of Valid Cases	91				

Note. a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.51.

b. Computed only for a 2x2 table

Table 15

Results of Pearson Chi-Square Data Analysis for Financial Aid: Directional Measures

			Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.108	.068	1.478	.139
		FAFSA APPLICANT Dependent	.000	.000	.	.
		GEAR UP Dependent	.182	.113	1.478	.139
	Goodman and Kruskal tau	FAFSA APPLICANT Dependent	.044	.043		.046 ^d
		GEAR UP Dependent	.044	.043		.046 ^d

Note. a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Cannot be computed because the asymptotic standard error equals zero.

d. Based on chi-square approximation.

Table 16

Results of Pearson Chi-Square Data Analysis for Financial Aid: Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.210	.045
	Cramer's V	.210	.045
	Contingency Coefficient	.206	.045
N of Valid Cases		91	

Data interpretation. There was a significant association between Latino students' participation in GEAR UP and whether or not they would apply for financial aid $\chi^2(1) = 4.022, p < .05$. This seems to represent the fact that, based on the odds ratio, GEAR UP participants were 4.17 times more likely to file a financial aid application than those who were not exposed to GEAR UP. Since the results of Pearson Chi Square test indicate a statistically significant difference in the financial aid application status of the treatment and non-treatment, the study *rejected* null Hypothesis 3.

Hypothesis 4. There is no significant difference between treatment and non-treatment on college grade point average among Latino community college students.

Tables 17 and 18 below show the results of t-test data analysis for cumulative grade point average. Table 17 displays the breakdown of the sample size, Mean, Standard Deviation, and Standard Error Mean for both the Treatment and Non Treatment groups. Table 18 provides the actual results of the t-test for cumulative grade point average.

Table 17

Results of t-test Data Analysis for Cumulative Grade Point Average: Group Statistics

	GEAR UP	N	Mean	Std. Deviation	Std. Error Mean
Cumulative GPA	Treatment	47	2.217002	.8060040	.1175678
	Non Treatment	42	2.060249	.9032291	.1393713

Table 18

*Results of t-test Data Analysis for Cumulative Grade Point Average: Independent**Samples Test*

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Cumulative GPA	Equal variances assumed	.696	.406	.865	87	.389	.1567527	.1811650	.2033325	.5168378
	Equal variances not assumed			.860	82.760	.392	.1567527	.1823363	.2059225	.5194278

Data interpretation. On average, Latino students earned a higher cumulative GPA when exposed to GEAR UP ($M = 2.22$, $SE = .118$) than those who were not part of a GEAR UP cohort ($M = 2.06$, $SE = .139$). This difference was not significant at $(87) = .865$, $p > .05$. The results represent a weak sized effect $r = .09$. Because the Sig. value of .406 on the Levene's Test for Equality of Value was greater than .05, the assumption of homogeneity of variance was not broken, so it was more appropriate to look at the first row of Table 18 for the t-test value. Since the results of t-test indicate no statistically significant difference in the cumulative grade point average of the treatment and non-treatment, the study *accepted* null Hypothesis 4.

Qualitative Data Analysis Process

The first step in the qualitative data analysis process was to transcribe the audio-recorded interviews into textual format. At the completion of each personal interview, the investigator transferred the audio-recorded files to a secured personal computer for backup. To facilitate a more efficient upload of the audio files to the transcription company, the investigator converted that larger wav files into a compressed mp3 format

without loss in sound quality. The investigator retained the services of Verbal Ink, a third party company that specializes in transcription services, to convert the audio recorded data into transcribed documents that were accessible using Microsoft Word.

Verbal Ink guaranteed the transcripts to have a 98% or better rate of accuracy. The transcribed documents were of high quality due actual people performing the transcription process. The process of transcribing the audio-recorded data into transcripts took approximately 5 days to complete, after which they were returned back to the investigator. In very few instances, the transcriber highlighted incomprehensible words in red to make it easy for the investigator to make a correction. The investigator merged all transcribed files into a single Microsoft Word document to simplify the process of conducting text analysis of data transcripts.

The investigator performed a textual analysis of the collected data to develop themes that addressed the research questions. To conduct the textual analysis, the investigator read the entire data transcripts one time to capture the essence of the data from a global perspective. After the initial reading, the investigator carefully reread each human subject transcript, highlighting text phrases that specifically addressed each interview question. Using a Microsoft Excel spreadsheet, the investigator tallied the responses provided by the human subjects (See Appendix O). The process made it possible to identify patterned regularities in which themes that addressed the research questions emerged naturally. The coding process was conducted with assistance from three doctoral students and a former doctoral student who recently completed the doctoral program.

The investigator divided the human subject transcripts among the four volunteer coders to perform a similar textual analysis process. Each volunteer received approximately six human subject transcripts with a set of instructions, a sample of a completed coding, and a copy of the actual interview questions. The purpose of having several volunteers code the data was to reduce bias from the original textual analysis coding performed by the investigator. By reviewing the data from the perspective of the other volunteer coders, the investigator clarified the meaning of the statements, thereby arriving at a more accurate interpretation of emerging themes.

In the review of the emerging themes, the investigator had the opportunity to ask the volunteer coders about their interpretation of the data. The clarification process allowed for the fine-tuning of the emerging themes, including the removal of potential bias or misinterpretation that may have occurred without the active participation of the volunteer coders. Only when the investigator and volunteers reached an agreement on similar patterns did the investigator actually use the themes to support the research findings. The final step in the process was to contextualize the major themes within Perna's (2010) Conceptual Model of Student College Enrollment and the review of related literature and research.

Inter-rater reliability coding procedure. The investigator, with assistance from volunteer coders, conducted an inter-rater reliability procedure to determine the degree of agreement by the raters on emerging themes. To do so, the investigator provided each volunteer with human subject data transcription in a Microsoft Word file. Using the track changes tool within the word processing software, the coders highlighted textual

phrases that addressed the research questions. The coders added comments to phrases that needed clarification or somewhat addressed the research questions.

After highlighting the key phrases, the investigator and volunteer coders reconciled their notes through discussion that eventually confirmed agreement on emerging themes and sub-themes. The investigator finalized the main data transcription to reflect the feedback given by the volunteer coders.

Qualitative Results

Several important themes emerged from the investigator's textual analysis of coded data collected from personal interviews. The themes addressed both research questions for the purpose of determining the effectiveness of GEAR UP interventions on a targeted demographic population:

Research question 1. Which of the following GEAR UP interventions, if any, made an impact to prepare Latino students for college?

- Tutoring and Mentoring
- College Field Trips
- Shadow College Students
- Jaime Escalante Summer Math Program
- Career and Technical Education Boot Camps
- Financial Aid Workshops
- College Fairs
- Summer Bridge to College Course

Tutoring and mentoring. The human subjects interviewed identified tutoring and mentoring activities as effective interventions that made an impact in preparing

them for college. The tutors and mentors identified by the human subjects could be GEAR UP staff at the secondary institutions providing individual assistance, college level tutors provided by a partner college/university, and high school students assigned as peer mentors. The human subjects interviewed who served as peer mentors seemed very engaged in the program, which made them more connected to their school community. The following comment made by Human Subject 22 demonstrated how serving as a peer mentor increased her sense of school belongingness:

Out of these activities I believe that the mentoring would have – made me feel more like a part of my school, just because, me as a mentor I had my mentees and I got to wear my blue shirt so I think it – the days that we mentored we were recognized more at school so it made me feel more a part of the school.

The tutoring and mentoring opportunities within GEAR UP provided an environment for Latino youths to bond with college students with similar demographic background. Human Subject 17 shared his interactions with the college mentors:

I met a few of the students that were being mentors and the way they talk about their career choice and other struggles because most of them were community college students so they had a few struggles. It made me see that I wasn't in this hole with no exit that I could actually try and make it.

Human Subject 9, who had successfully transferred from a community college to a major university, offered his perspective on the absence of the GEAR UP mentors at his former high school where his younger brother currently attends and the long term effects of the mentor/mentee relationship:

For example he doesn't have necessarily any mentors to go to or any tutoring. The few tutoring that he has for – I think it's through programs like LA Best or something else. It's very limited and there isn't enough of it. I would even throw in there that a lot of the mentors that I had in Gear Up are actually people that I've continued to stay in contact with. Actually a lot of them – some of them came to SoCal Community College and transferred out earlier than I did.

Among all GEAR UP interventions, a majority of the human subjects interviewed cited tutoring and mentoring as having the most impact on their decision to attend college. In terms of school belongingness at the secondary schools, the human subjects identified the opportunity to go on college field trips as having the most impact.

College field trips. The opportunity to participate in college and university field trips made a strong impression and helped prepare Latino youths for college. As early as middle school, the human subjects interviewed participated in organized field trips to colleges and universities. The field trips made it possible for Latino youths to experience college by spending some time interacting with college students. Several of the human subjects interviewed also participated in an overnight bus tour of several colleges across the state of California. Human Subject 14, who now attends a major university in Northern California, shared her life changing experience when she joined a group of classmates on an overnight excursion that included her current university. She stated “Yeah it was a big factor. Yeah that whole trip totally opened my eyes to like oh this is a actual place and really getting around the campus was a big factor in me deciding to come here.”

Several Latino youths expressed the benefit of being exposed to the different types of postsecondary institutions, noting that it raised their awareness, especially of the variety of options available to find the right college fit. Human Subject 15 stated “There’s the college choice, the idea of having college choices is also beneficial in that you know that you can – that there’s different colleges that suit your need differently.” Human Subject 9 also expressed the importance of finding the right fit as a result of visiting a number of college and universities as he stated “It did help me plan out better

coming to community college and then transferring out. I think it had a lot to do with it. Otherwise I would have been quite lost I think.”

The life-changing experience of the overnight field trips made Human Subject 9 reflect on the absence of GEAR UP and the potential negative impact on his younger brother who now attends his former high school:

That was an amazing experience that I wish I – my younger brother goes to my former high school now and they don't have the Gear Up program anymore and I – it's one of the greatest flaws I would say, or greatest weaknesses, of the high school right now. I think it definitely would have made a difference for him.

The opportunity to participate in field trips and learn about different college options made the greatest impact among the human subjects interviewed in terms of making Latino youths feel a part of their secondary school. In addition to tutoring and mentoring and field trips, the human subjects interviewed cited the availability of financial aid workshops to have made a difference in their secondary school belongingness and decision to attend college.

Financial aid workshops. Consistent with the quantitative data findings, the availability of financial aid workshops made an impact on preparing Latino youths for college. Since GEAR UP aimed to target an underserved population, the lack of financial resources has been identified in the literature as a barrier in the pursuit of higher education. Human Subject 8 cited the importance of knowing about financial aid process when he stated that his “dad wasn't working” at the time he was getting ready to enter college. The family circumstance shared by Human Subject 8 provided a context in helping understand the importance of providing financial aid information to Latino youths:

I would say the financial aid workshops because they would explain very clearly how to apply for financial aid and to add classes and all that. 'Cause I didn't know how to – my sister wasn't there so nobody really knew how to apply for financial aid.

The impact of financial aid workshops on college preparation was evident in the following statement made by Human Subject 5: “Actually the financial aid workshops. I don't have any problems with financial aid so I don't have to ask anybody for help, I don't need anything like that.”

Making financial aid information available to Latino youths has been found to be an effective intervention in increasing a sense of school belongingness and encouraging Latino youths to consider their college options. In addition to the GEAR UP intervention's impact on school belongingness and college decisions, the activities seemed to make a difference in shaping the personal behavioral characteristics of several human subjects interviewed for this research project.

Increased class participation. The presence of GEAR UP program motivated Latino youths to increase their participation in the classroom. By highlighting the importance of academic performance at the high school, the presence of GEAR UP made Latino youths raise their level of in-class participation. Human Subject 3 shared his perspective as to how GEAR UP made him participate more in his classes: “cause they told me it was important for me to do well in my classes in order to reach the school I wanted to transfer into, I mean apply to, after high school.” Human Subject 15 reflected on the positive outcome of his increased participation in classes:

I have increased my participation in class because I've noticed that if I do, If I answer a question in class I can either get a response whether it's correct or it may be correct and I need some improvement on my reflection on material. It also helps in that I can ask questions when I do need questions.

By raising their level of class participation, Latino youths thrive in their learning environment. The increased class participation empowered Latino youths to be active learners and actually enjoy the process of knowledge acquisition. Several of the human subjects interviewed indicated how they learned the importance of timely submission of college and financial aid applications as a result of their participation in GEAR UP.

Timely submission. GEAR UP made an impact on changing the personal behavior of Latino youths by its emphasis on the importance of timely submission, whether for school homework or college application. Most of the human subjects interviewed reported improvement in their ability to meet deadlines, whether for schoolwork, college, or financial aid applications. Human Subject 9 recalled how GEAR UP would monitor and instill the importance of meeting deadlines:

GEAR UP definitely – they would send out reminders, they would make sure to talk to students; if you were in class and you had the time to go talk to them they would actually summon you to go and talk to them and see how they could help you make sure you met those deadlines.

Human Subject 15 reiterated the benefits of learning to submit his college and financial aid application in a timely manner when he explained:

Then timely submission of college and financial aid applications; I do that now because I see that they're really important, especially financial aid, and with college applications it also is a good feeling to know that you've got everything complete and that you don't have anything to worry about once school starts. It makes it a lot easier to start up with school again and get back in to being at school mode because you don't have the stress of having to turn in applications during school time, you have everything done.

Human Subject 06 shared the same sentiment when she stated:

I think submitting the college applications and stuff like that because even though I just came to community college they still helped me and told me; you have to do this, you have to do FAFSA, you have to go through this, you have to register for college and definitely pushed you.

GEAR UP's proactive approach to encourage participants to submit their college and financial aid applications seemed to facilitate a behavioral change by the human subjects interviewed in this study. In many cases, the ability to submit applications in a timely manner carried through when the human subjects entered college. As a result, GEAR UP participants developed personal responsibility, a useful skill for college preparation.

Not give up. Latino youths reported how GEAR UP made an impact on their perseverance to graduate in high school. The subject of math was especially challenging to many of the participants. In one instance, Human Subject 15 described his experience in overcoming math in college through grit and perseverance:

I'm not very good at math, I still haven't improved very much in math, but I've actually failed it once here now but this second time that I'm in it I've just – there's been days where I don't think I'll be able to do the homework, I don't feel like doing it, but I just say you know what I'm gonna get to it and do it. Because if I can at least pick up something then at least that can get me a passing grade or maybe I'll actually be able to get a really good passing grade. So you just get better at it each time so that really does help.

Human Subject 09 expressed how the available resources in GEAR UP made a difference when he experienced difficulty in high school:

Not give up in a class even if the subject is difficult, that one as well. I think a lot of the time they, I wouldn't necessarily say give up, but there were definitely times that were difficult and Gear Up offered that extra resource to go and ask for help.

The available resources within GEAR UP filled the gap as explained by Human Subject 17, since his family was not able to give him the support he needed to meet the academic challenges at the high school:

not give up even if the subject was difficult were behavior characteristics that I acquired. It was mostly because I was able to get the help because I didn't have

the help at home. My parents couldn't help me with an essay or with trig or pre-calc so most of the homework was done at school with the help of these tutors.

The ability to not give up even in difficult situations demonstrates resilience, grit, and perseverance. The fact that more than half of the human subjects interviewed had expressed this trait as a result of their GEAR UP participation speaks volumes on the impact of this particular program outcome. Similar to timely submission of applications, the acquisition of grit not only prepares Latino youths for college but also provides them with an important life skill.

Awareness. For the most part, the majority of the participants who were interviewed were very much aware of GEAR UP. Most participants were able to express how GEAR UP was supposed to prepare them academically for college and inform them about college options and opportunities.

Recommendation. The interviews revealed that most of those who participated in GEAR UP were very satisfied with their experience with the program. Several participants expressed the need to make some of the most popular activities, such as overnight college field trips, available to everyone. The other notable recommendation would be to improve the promotion of program activities through better communication to students and parents.

Research Question 2. How did the participation in GEAR UP Summer Bridge course make an impact, if any, in preparing Latino students for college?

Low participation. Out of the 24 participants who were interviewed for this research project, only one actually participated in the GEAR UP Summer Bridge course. The low participation appeared to be a result of poor communication as many participants stated that they had never heard of the course. Human Subject 12, the only

person who participated in the Summer Bridge course, shared the positive results she got out of the course:

It helped me transition because it showed me the big responsibilities that college was about to give me. It showed me that I needed to be on time to class, be ten minutes before if possible, so I could be ready to set up or I'd already have everything set up beforehand so I could just go ahead and be ready for class.

The low participation rate in the GEAR UP Summer Bridge course by a targeted demographic appeared to indicate very little impact on preparing Latino students for college.

Non-mandatory policy. GEAR UP does not require its participants to engage in program interventions. The majority of the participants interviewed for this research project stated that their level of participation in GEAR UP activities can be described as “sometimes.” One participant described how he and many students perceive the participation requirement in the program:

It wasn't required you were just kind of part of it. You were that – we were that year; so everyone was part of Gear Up. But if you wanted to – it wasn't really interactive it was if you wanted to do that then go and they made us do certain things but it would be in class and they would pull you out of class sometimes to do certain things.

Summary of Salient Findings

GEAR UP made an impact on financial aid awareness among its target population of underserved Latino youths. The results of the Pearson Chi Square test demonstrated that Latino youths who participated in GEAR UP were four times more likely to file a financial aid application than Latino youths not exposed to the program. A p value of .045 supported a statistically significant finding at 95% confidence level that participation in GEAR UP promoted financial aid awareness among Latino youths.

The results of t-test did not support a significant impact of GEAR UP in preparing Latino youths for college. A quantitative comparison of the English and math placement levels and cumulative GPA from the treatment and non-treatment groups did not yield statistically significant outcomes. Through personal interviews of Latino youths who participated in GEAR UP, several program interventions were found to be much more effective than others in preparing Latino youths for college.

Among the various GEAR UP interventions, the availability of tutors and mentors, college field trips, and financial aid workshops were most effective in preparing Latino youths for college. These three interventions were cited as effective interventions in making Latino youths feel a part of their secondary school. In addition, Latino youths cited these interventions as making a positive impact in their decision to attend college. The interventions gave Latino youths the opportunity to develop non-cognitive skills.

Participation in GEAR UP made a difference in the development of non-cognitive skills among Latino youths. The presence of GEAR UP at the secondary school promoted resilience, grit, and perseverance. GEAR UP also promoted personal responsibility among Latino youths by stressing the importance of timely submission of college and financial aid applications. In some cases, Latino youths reported higher participation in classes as a result of being motivated through their participation in GEAR UP.

The impact of the GEAR UP Summer Bridge course cannot be fully evaluated due to low participation by the treatment group. Out of the 24 Latino youths interviewed for this project, only one participated in the Summer Bridge course. Only one participant indicated a positive experience gained from the taking the course. Perhaps

the non-mandatory participation in GEAR UP activities and ineffective promotion of program activities, as expressed by some of the human subjects interviewed, contributed to the low participation by Latino youths.

For the most part, Latino youths who participated in this research project were aware of the purpose of GEAR UP. The human subjects who participated in the personal interview articulated the purpose of GEAR UP well. The need to promote GEAR UP activities effectively and address the limited space in popular activities, such as overnight field trips, were identified as opportunities for potential program improvement. A majority of those who participated in the interview expressed a general satisfaction with the GEAR UP program.

Chapter 5: Summary, Conclusions, and Recommendations

GEAR UP is a federal program designed to promote college access and readiness among underserved populations. Since the program's inception in 1998, the United States Congress appropriated \$3.5 billion to fund GEAR UP partnership grants nationwide. GEAR UP called for the funding of interventions for the purpose of preparing underserved youths for postsecondary education. By encouraging secondary, postsecondary, and community-based organizations to form collaborative partnerships, GEAR UP strove to make a difference the college participation rate of the underserved youth population. While the infusion of dollars has demonstrated a commitment by policymakers to college access and readiness, critics pointed out that very little was known about how GEAR UP made a difference in its intended program outcomes.

Chapter 5 opens with brief summary of the research project, including a restatement of the problem and purpose, description of methodology, and results. After the summary, the investigator presents seven conclusions and corresponding recommendations for GEAR UP program practitioners, academic and research communities, and policymakers. Finally, the investigator offers ideas for future research to conclude the chapter.

Summary

Problem. The status dropout and unemployment rates among Latinos are much higher compared to other demographic groups. As of 2012, the status dropout rate among Latinos (15%) lags behind Blacks (8%), Whites (5%), and Asian/Pacific Islanders (4%). The higher status dropout rate among Latinos seems to profoundly

affect their employment status. A correlation between educational attainment and employment seems more evident when looking at the employment situation of the Latino population in the United States (Boggs, 2011; Brown, 2012).

The U.S. Bureau of Labor Statistics (2013) reported a much higher unemployment rate among Latinos (9.6%) than Whites (6.9%) and Asians (6.6%). In the report, the seasonally adjusted unemployment rate among individuals with less than a high school diploma obtained (11.7%) was much higher than the rate of those who completed a bachelor's degree and higher (3.9%). Even the unemployment rate of individuals who completed a high school diploma (8%) and those who had some college or attained an associate degree (6.9%) was much lower than the rate of non-high school graduates.

In an effort to address the problem of limited college access and economic inequality among underserved youths from low socioeconomic status families, policymakers have funded federal programs, namely, the TRIO programs (Upward Bound, Talent Search, Upward Bound Math-Science, Student Support Services), AVID, and GEAR UP. Given the higher status dropout and unemployment rates among Latinos and the lack of evidence-based research study on the impact of GEAR UP on its intended program outcomes, the need to determine the impact of GEAR UP interventions on college readiness, financial aid awareness, and college academic success of underserved Latino youth population seemed ripe for further research investigation.

Purpose. The purpose of this research project was to investigate the impact of a GEAR UP partnership project on college access and success of a targeted Latino

population. To investigate the impact of GEAR UP, the investigator analyzed the program's effectiveness on improving college readiness, financial aid awareness, and college academic success of Latino youths enrolled at a 2-year community college. Furthermore, the research project evaluated the effectiveness of the various GEAR UP interventions in making a difference to advance program outcomes.

Haskins and Rouse (2013) noted that while the effectiveness of GEAR UP had been evaluated many times, very few studies actually analyzed the effects of GEAR UP participation on college enrollment and completion outcomes. The results of most research studies on GEAR UP had been mixed, with a recent dissertation study finding no significant correlation between GEAR UP and college success (Coleman, 2011). The need to examine the impact of GEAR UP within the context of a theoretical model and a targeted underserved student population seemed inevitable.

Perna (2010) developed a conceptual model of student college enrollment that highlighted the role of context in the decision-making process to pursue higher education. The individual decision may be shaped within a multi-layer system of student and family, school and community, higher education, and social, economic, and policy contexts. The model suggests that the individual decision to attend postsecondary education hinges on academic preparation, available financial aid resources, expected long-term benefits of a college education, and college costs, which take into consideration the opportunity cost or foregone earnings while enrolled in college.

Methodology. The research investigator applied a concurrent embedded mixed methods study to investigate the impact of a GEAR UP partnership project on college

access and success of an underserved Latino population. Through quantitative data analysis, the investigator applied inferential statistics to determine how GEAR UP has impacted the college readiness, financial aid awareness, and college academic success of Latino program participants. Concurrently, the investigator conducted qualitative data analysis to determine the effectiveness of the various GEAR UP interventions to influence program outcomes.

Population. The study population consisted of two groups ($N = 91$) of Latino students who graduated from GEAR UP participating secondary schools and entered a partner community college district immediately after high school graduation. The investigator divided the study population into two groups: treatment and non-treatment. The treatment group ($N = 47$) included Latino students who graduated from a GEAR UP participating secondary institution in spring 2011 prior to entering a partner community college in summer and or fall 2011. The gender breakdown of the treatment group consisted of males ($N = 25$) and females ($N = 22$).

The non-treatment group ($N = 44$) included Latino students who graduated from the same secondary schools a year later in spring 2012 when GEAR UP no longer existed due to program expiration. The non-treatment group also enrolled at the same community colleges in summer and or fall 2012.

From the treatment group, the investigator conducted personal interviews ($N = 24$) to determine the effectiveness of GEAR UP interventions. The gender breakdown of interviewees included males ($N = 13$) and females ($N = 11$). A majority of the interviewees elected to be interviewed in-person ($N = 13$), while the rest requested a telephone ($N = 11$) interview.

Design, methods, instruments. The investigator used a comparative change model to compare the outcomes of targeted student cohorts from participating GEAR UP institutions. The purpose of using a comparative change model was to control for alternative explanations of research findings, such as maturational and or selection effects.

To determine the impact of GEAR UP on college readiness, the investigator performed a t-test analysis of the English and math placement levels of the treatment and non-treatment from an archival dataset. For academic success, the investigator performed a t-test analysis of the cumulative GPA of the treatment and non-treatment earned at a community college as of fall 2013. To measure the impact of GEAR UP on financial aid awareness, the investigator performed a Pearson Chi-Square to compare the financial aid application status of the treatment and non-treatment. The results of quantitative data analysis either accepted or rejected the four null hypotheses introduced to address the research problem.

The investigator developed eight open-ended questions to ask the human subjects during the personal interviews conducted to determine the effectiveness of GEAR UP interventions. All personal interviews were audio recorded by the investigator and transcribed into texts by Verbalink, a third party transcription servicer. The investigator and several volunteers performed the coding as part of textual analysis of the human subject responses. From the coded text documents, the investigator captured themes to address the two research questions developed to address the research problem. The emerging themes served as the foundation by which the investigator developed the research conclusion and recommendation.

In addition to the archival dataset and personal interviews, the investigator captured data artifacts using field notes and personal observations of individual and group behavior. The data artifacts complemented the information captured from the archival dataset and personal interviews.

Results. GEAR UP made an impact on financial aid awareness among its target population of underserved Latino youths. The results of Pearson Chi Square test demonstrated that Latino youths who participated in GEAR UP were four times more likely to file a financial aid application than Latino youths not exposed to the program. A *p* value of .045 supported a statistically significant finding at 95% confidence level that participation in GEAR UP contributed to Latino youths filing a financial aid application.

The results of the t-test did not support a significant impact of GEAR UP in preparing Latino youths for college. A quantitative comparison of the English and math placement levels and cumulative GPA from the treatment and non-treatment groups did not yield statistically significant outcomes. Through personal interviews of Latino youths who participated in GEAR UP, several program interventions were identified to be more effective than others in helping Latino youths prepare for college.

Several themes emerged from the coding process of the human subject interview transcripts. A major theme that emerged from the coding of interview transcripts was the significant importance of tutors and mentors, college field trips, and financial aid workshops. These interventions were deemed the most effective interventions in preparing Latino youths for college. The human subjects interviewed cited these three interventions as very effective in making them feel a part of their secondary school. In addition, Latino youths also cited these interventions as having a positive impact on

their decision to attend college. The opportunity to participate in GEAR UP interventions helped Latino youths develop non-cognitive skills.

Another significant theme that emerged from the coding process was GEAR UP's impact on the development of non-cognitive skills among Latino youths. The presence of GEAR UP at the secondary school made a difference in promoting resilience, grit, and perseverance. GEAR UP appeared to promote personal responsibility among Latino youths by encouraging them to engage in timely submission of college and financial aid applications. In some cases, Latino youths also reported higher participation in the classroom as an outcome of their increased motivation through GEAR UP participation.

The impact of the GEAR UP Summer Bridge course cannot be fully evaluated due to low participation from the treatment group. Out of the 24 human subjects interviewed, only one actually participated in the Summer Bridge course. The only participant had a positive experience as a result of her participation in the course. Perhaps the non-mandatory policy of GEAR UP and ineffective promotion of program activities, as expressed by some of the human subjects interviewed, contributed to the low participation by Latino youths.

For the most part, the human subjects interviewed articulated well the purpose of GEAR UP. The Latino youths identified the need to promote GEAR UP activities effectively and address the limited space in popular activities, such as overnight field trips, as opportunities for program improvement. In general, the human subjects who agreed to be interviewed expressed their satisfaction with GEAR UP.

Conclusions

Based on the research study findings, the investigator drew the following conclusions:

Conclusion 1. *GEAR UP made a difference in encouraging Latino high school seniors apply for financial aid.* The results of the Pearson Chi Square test suggested that Latino students who were part of a GEAR UP cohort were four times more likely to file a financial aid application when compared with Latino students who had no access to GEAR UP. The Pearson Chi Square resulted in a p value of .045, which supported a statistically significant finding at 95% confidence level. The population sample ($N = 91$) consisted of a treatment cohort ($N = 47$) and a non-treatment cohort ($N = 44$) who enrolled at a community college immediately after high school graduation. The population sample only included Latino students who met the basic eligibility criteria to apply for federal student aid, such as United States citizenship or permanent residency status. In addition to the results of quantitative data analysis, the qualitative methodology also supported the notion that participation in GEAR UP financial aid activities made an impact on the Latino students' attitude towards filing their financial aid applications.

The interviews conducted with a purposive sample ($N = 24$) of human subjects from the treatment cohort revealed the impact of GEAR UP's effort to promote the availability of college financial aid programs. A textual analysis of the interview transcripts showed that early exposure to the availability of financial aid at the college level was cited by almost half of the human subjects as a factor in making them feel a part of their middle and or high school. Perhaps the early exposure to college

affordability resulted in a positive attitude towards the current academic disposition of some of the GEAR UP participants. Furthermore, the human subjects revealed a positive impact of GEAR UP in the development of personal responsibility as it encouraged the participants to submit their financial aid applications in a timely manner. In essence, GEAR UP partially fulfilled the proposed outcomes of Perna's (2010) Conceptual Model of Student College Enrollment.

The Conceptual Model of Student College Enrollment (Perna, 2010) highlights the importance of financial aid on college decision-making. Similarly, the conceptual framework that guided the development of GEAR UP also highlights the importance of financial aid awareness in promoting college success. The results showed that GEAR UP made a difference in achieving the program goal of increasing financial aid awareness at the secondary level. The positive outcome regarding financial aid addressed the issues raised by Heredia (2009) and Zambone and Alicea-Saez (2003) that lack of financial aid guidance continues to be a barrier to college access among first-generation Latino students. Furthermore, the introduction of loans as a new form of financial aid presents new challenges for underserved students and their families (Davis, Green-Derry & Jones, 2013). However, the quantitative data analysis results showed different program outcomes on college readiness and academic performance.

Conclusion 2. *GEAR UP appears to minimally impact college readiness and academic success.* The results of the t-test suggested that GEAR UP had an insignificant impact on the English and math placement levels upon college-entry and cumulative GPA after the first year in college among Latino youths. While Latino youths who were exposed to GEAR UP placed higher in English and math placement levels,

the differences were not statistically significant for English ($t(77.484) = -1.618, p > .05$) or math ($t(89) = -1.184, p > .05$). Similarly, Latino youths who had an opportunity to participate in GEAR UP earned a higher cumulative GPA when compared to non GEAR UP participants. However, the differences in cumulative GPA ($t(87) = .865, p > .05$) were not statistically significant, just like the college placement levels. These results do not support the intended college readiness outcomes of the Conceptual Model of Student College Enrollment.

The Conceptual Model of Student College Enrollment (Perna, 2010) highlights the importance of academic preparation in the decision to pursue higher education. Similarly, the Conceptual Framework of the impact of GEAR UP emphasized the importance of academic preparation through academic assistance services and long-term outcome of increased success at the postsecondary level. Prior research (Deil-Amen et al., 2005) found that many high school students failed to understand the important linkage between high school academic performance and college readiness and success. The issue of college readiness especially affected Latino youths who were more likely to be enrolled in remedial courses when compared to the general population (Sparks & Malkus, 2013). In seeking to improve college readiness and access, GEAR UP offered a variety of program interventions in which some were proven to be more effective than others.

Conclusion 3. *Tutoring and mentoring, college field trips, and financial aid workshops made a difference in how Latino youths developed a sense of belongingness at their secondary school and influenced their decision to attend college.* The results of the textual analysis performed on the human subjects' interview transcripts highlighted

tutoring and mentoring, college field trips, and financial aid workshops as very effective GEAR UP interventions among Latino youths. The tutoring and mentoring intervention provided the necessary support system as Latino youths faced the decision to invest in a college education. In many instances, those who served as a peer mentor seemed to reap the most benefit.

Latino youths benefited when they bonded with the college mentors, especially when both came from similar demographic background. The opportunity to interact with the college mentors provided the opportunity for some human subjects to realize that college was attainable. In one particular case when the human subject successfully transferred from community college to a major university within 2 years, the bond formed with college mentors continued into their college years. Like tutoring and mentoring, the college field trips impacted how the human subjects felt connected with their secondary schools.

Most of the human subjects interviewed shared their positive experiences with the college field trips. The college field trips exposed the human subjects to numerous pathways to college, which helped them in their college decision-making process. Among those interviewed, several shared a life-changing experience from the overnight college field trips. The overnight college field trips take a group of students out of town to several colleges and universities. In a particular instance, a human subject revealed that she eventually attended a major public university in Northern California, a university she visited during her participation in an overnight college field trip. Another human subject stated that his participation in the overnight field trip made him decide to attend a community college, as this made the most financial sense for him and his family. As

part of the college field trips, the colleges and universities provided the human subjects with information on the college admissions process, college costs, and financial aid opportunities.

Another notable theme that emerged from the interviews was the positive impact of financial aid workshops on school belongingness. Throughout the secondary level, GEAR UP emphasized the availability of financial aid for college. Consistent with the quantitative study finding, most of the human subjects interviewed did not experience any problems with their financial aid applications. The removal of financial barriers from the college decision-making process somehow resulted in a sense of belongingness at the secondary level. Perhaps the financial aid workshops mediated between college financial barriers and academic focus at the secondary level, especially among Latino youths.

Several notable research studies have noted the importance of positive school environment on student success. The acculturative stress experienced by Latino students can be minimized when they feel a sense of belongingness with their school (Roche & Kuperminc, 2012). Kuperminc et al. (2008) suggested that when Latino students feel a sense of belongingness in school, it has a positive impact on parental involvement, which indirectly makes it easier to adjust in the school environment. Effective mentoring has been found to be associated with a sense of school belongingness (Ramirez, 2009; Sanchez et al., 2008). Consistent with this study's finding, a recent study on GEAR UP (Morgan, 2012) also found college field trips, tutoring and mentoring, and financial aid workshops to have the greatest impact on academic achievement. The presence of GEAR UP also addressed the issue of

unavailability of college information due to the lack of resources at some high schools (Bell et al., 2009). While tutoring and mentoring, college field trips, and financial aid workshops seem to have made an impact on underserved youths, the evidence is unclear regarding the Summer Bridge course because it was not well attended by the GEAR UP target population.

Conclusion 4. *Latino youths who transitioned from high school to a community college failed to take advantage of the Summer Bridge course offered through GEAR UP.* The investigator found inconclusive results regarding the effectiveness of the Summer Bridge course. GEAR UP practitioners intended the Summer Bridge course to be an intervention during the transition from high school to college. Out of the 24 human subjects interviewed, only one participated in the Summer Bridge course. The lone participant shared her positive experience in and outcome of her Summer Bridge course participation. The interviews revealed that most of the human subjects were unaware of the Summer Bridge course. When asked to suggest recommendations to improve GEAR UP, several human subjects alluded to the need for better communication and effective promotional strategies of program interventions. Past research on GEAR UP found summer programs to have a positive impact on academic achievements and student engagement.

GEAR UP programs may offer a summer program during the summer transition from high school to college or at any time throughout the secondary level. Participation in summer learning camps have been shown to impact academic achievement and engagement among middle school students (Beer et al., 2008). By providing the opportunity for middle school students to experience college life for a week during the

summer, the participants learned about the college admissions and financial aid processes at a very early stage of their academic career.

Conclusion 5. *Latino youths who attended a community college were occasionally engaged in GEAR UP activities at the secondary level.* To get the most out of what GEAR UP has to offer, participants should actively seek and engage in the services offered by the program. Among the human subjects interviewed, a majority expressed that they only participated in GEAR UP activities sometimes. Perhaps the lack of active participation stems from the fact that program participation was voluntary. Unless motivated, underserved youths will only engage in GEAR UP activities at a minimal level. Previous literature on college preparation program suggested that the level of participation could make a difference in the achievement of desired student success outcomes.

Henderson (2009) attributed the high level of success on a CO-OP Upward Bound program when students make a high level of contact. The high level of contact requirement ensured that participants were highly engaged and utilized the program to the maximum. In the case of the CO-OP Upward Bound program, the service continued to be available to program alumni when they needed the support to navigate the college environment at the postsecondary level.

To engage students and families in school activities effectively, Hiatt-Michael (2010) and Taylor Haynes et al. (2010) recommended schools to reach out to their constituents actively. In the absence of home and school partnership as a result of ineffective communication, GEAR participation suffered due to the inadequate dissemination of information to students and parents regarding the merit of the program.

However, schools with effective communication practices experience higher student participation, especially when parents actively encourage their children to take advantage of available programs. Underserved students not only get the extra boost in their academic performance when parents are involved, they also get the opportunity to hone their non-cognitive behavioral skills.

Conclusion 6. *GEAR UP appears to impact the non-cognitive behavioral characteristics of Latino youths, especially in their attitude towards academic engagement, personal responsibility, and resiliency.* Unexpectedly, the qualitative data analysis results revealed that GEAR UP made some impact on human subjects in terms of changes in personal behavioral characteristics. A major theme that emerged from the textual analysis of interview transcripts indicated that participation in GEAR UP activities, such as the admissions and financial aid workshops, helped the participants understand the importance of timely submission of college and financial aid applications. Thus, GEAR UP participants developed a sense of personal responsibility by adhering to application deadlines.

In addition to acquiring a sense of personal responsibility, the presence of GEAR UP at the secondary schools empowered participants to engage in the classroom activities actively. The motivation to participate actively in school activities seemed to have stemmed from the early college awareness made possible through field trips and extra support from GEAR UP tutors and mentors. The high engagement in school activities led GEAR UP participants to report a sense of school belongingness.

The human subjects interviewed also reported that their participation in GEAR UP made them more likely to not give up in class even when the subject was difficult.

The attitude expressed by several Latino youths during the interviews demonstrated how participants developed a sense of resiliency within the GEAR UP environment. The influence of non-cognitive factors on academic performance and life success has been well supported by academic research.

Tough (2012) and several other academic research investigators (Duckworth et al., 2007; Heckman & Rubinstein, 2001; Mischel et al., 1989; Thornton & Sanchez, 2010) have documented the significance non-cognitive skills. Duckworth et al. (2007) found grit and perseverance to be important non-cognitive traits that individuals may acquire that can lead them to academic and personal success. The mentoring component within GEAR UP seemed to encourage participants to refrain from giving up easily in class even when the subject matter was difficult. Thornton and Sanchez (2010) provided a literature review on resiliency and advocated for GEAR UP to promote the development of this skill among participants.

Heckman and Rubenstein (2001) found that students who demonstrated perseverance to graduate from high school were more likely to have a successful career compared to those who passed the GED to complete their high school requirements. Although the GED completers may possess the same cognitive abilities as those who actually finish high school, they often lack the necessary discipline to finish college or keep their job.

Conclusion 7. *A mixed-method research process can be an effective approach to investigate the impact of a program and the effectiveness of its interventions.*

Through a comparison of performance outcomes from the treatment and non-treatment groups using quantitative data analysis, the investigator determined GEAR UP's impact

on college access and readiness. The availability of pre-determined dataset variables on financial aid application, English and math placement levels, and cumulative GPA from the community college made the quantitative data analysis a seamless research process. The Pearson Chi-Square and t-tests turned out to be the appropriate statistical tools to perform the quantitative data analysis. While the quantitative methodology determined the impact of GEAR UP, the qualitative methodology revealed the effectiveness of the program interventions.

The qualitative methodology made it possible for the investigator to address the research questions within the context of the human subjects' personal experience and perspectives. Tierney and Venegas (2009) advocated qualitative methodology to gain insights regarding the lives of students and families, which proved beneficial in the exploration of the Latino experience with a federal program. The personal interviews and field notes proved to be very effective in capturing data. By taking context into account during the qualitative data collection process, the investigator captured a much richer understanding of the data from a human perspective. The results from both the quantitative and qualitative data analysis served as the basis of the research findings, allowing the investigator to address the problem and purpose of the research project. The research conclusions made it possible for the investigator to propose several recommendations for the purpose of improving the quality of GEAR UP and its program interventions. The recommendations are geared towards policymakers, program coordinators, teachers, tutors and mentors, administrators, community and college partners, and program evaluators.

Recommendations

Based on the research conclusions, the investigator proposed the following recommendations to enhance the quality of GEAR UP:

Recommendation 1. *Policymakers should consider expanding the scope of GEAR UP from financial aid awareness into financial literacy.* While GEAR UP should continue to promote financial aid awareness, the program should consider expanding its program scope to highlight financial literacy. GEAR UP's expansion to provide financial literacy at the middle and high school levels would empower students and parents with valuable information that they require to make appropriate college decisions. Such information might include strategies to save funds for a college education, the costs of loan borrowing, and cost benefit analysis of various career options. The addition of financial literacy as a component of GEAR UP would add a larger goal to the program.

The seismic shift from grants to student loans presented new challenges for underserved students (Davis et al., 2013). The addition of financial literacy provide both students and parents from underserved families the ability to become informed consumers as they weigh the costs and benefits of investing in college education. An emphasis on financial literacy would be consistent with a component within the conceptual model of student college enrollment (Perna, 2010), which also considered the expected long-term benefits of college and college costs as factors in the college decision-making process.

Policymakers and postsecondary academic institutions must seek a common ground to make higher education affordable to underserved youths. Latino youths and their parents could make better higher education choices when GEAR UP adequately

informs them of the long-term merits of a college education and the investment costs that may eventually come in the form of a large student loan debt. For example, by being informed of the low cost benefit of completing the first two years of postsecondary education at a community college, students and parents may be able to reserve their student loan borrowing at the 4-year university. In developing policies and programs to improve college access among underserved youths, lawmakers and educators should consider the cultural norms of the targeted underserved population.

Recommendation 2. *GEAR UP school coordinators, teachers, and tutors and mentors should intensify a focus on college readiness, including the development of non-cognitive skills.* A finding from this research project indicated minimal impact of GEAR UP on college readiness and academic success at the postsecondary level. Therefore, GEAR UP should re-strategize to find a much more effective approach to improve college readiness and academic performance. For example, GEAR UP should provide an explicit plan to prepare underserved youths to place at college level English and math during course placement assessments. GEAR UP programs could effectively ensure college access, readiness, and success among underserved youths by emphasizing the importance of academic performance at the secondary and postsecondary levels.

Federal GEAR UP program administrators should reward grant proposals that emphasize college readiness program outcomes of underserved youths. Although the current emphasis on collaborative partnerships between secondary and postsecondary institutions supported college readiness, educators should consider research-based and creative approaches to address college readiness. For example, a student-led

parent/teacher conference on college readiness at the middle or high school level encourages pro-active learning by the students.

GEAR UP administrators should consider the potential impact of their program interventions in developing the non-cognitive skills of underserved youths. The importance of non-cognitive skills has been linked to college and life success. The development of non-cognitive skills provides program participants the opportunity to develop important soft skills that can make a difference in their future academic, career, and personal endeavors. Furthermore, policymakers should consider awarding GEAR UP grants to proposals that incorporate the development of non-cognitive skills, in addition to the current program focus on college access and readiness.

Recommendation 3. *Policymakers and program school administrators should support funding to offer more tutors and mentors, college field trips, and financial aid workshops.* Consistent with previous research findings, GEAR UP programs should offer tutoring and mentoring, college field trips, and financial aid workshops. The study findings showed that these interventions made a difference among the human subjects interviewed. A peer mentor program provided opportunities to even academically marginal students, helping them to develop their soft skills, such as public speaking and social interaction. When recruiting peer mentors in the program, the GEAR UP administrator should consider other factors and not solely base their recruitment on academic performance. To leverage resources, GEAR UP coordinators should connect with other college preparation program, such as AVID, for trained tutors and other resources to fund this recommendation.

GEAR UP programs should be encouraged to facilitate overnight field trips to expose underserved students to opportunities outside their local neighborhoods. These overnight field trips provided students with an opportunity to bond with classmates, teachers, administrators, and, in some cases, parents. The bonding that may occur as a result of overnight field trips has the potential to yield school belongingness, which the literature has shown to improve academic achievement.

The early exposure to financial aid workshops removed a barrier that could prevent underserved students from considering college as an option. To improve the quality of these interventions, GEAR UP administrators should evaluate the impact of the services immediately after the activity. In addition, GEAR UP must find a way to make the overnight field trips available to anyone interested in attending. Several human subjects interviewed expressed their frustration about the limited number of spaces available in the overnight college field trips.

Recommendation 4. *High school and college partners should collaborate to increase the participation of underserved youths in Summer Bridge course through effective course planning and effective communication practices.* The high school and college partners should work closely to identify community college bound students and actively recruit them to participate in the Summer Bridge course. Echoing the suggestions made by several human subjects, GEAR UP administrators must proactively promote the Summer Bridge course to underserved youths. The study findings revealed that most human subjects were not aware of the opportunity. The college partners must evaluate the quality of the Summer Bridge course to ensure that it prepares students for college work. The Summer Bridge course must also be culturally

sensitive to underserved youths and take into account their vulnerability in a college environment. A need to require the high schools to promote and market the summer bridge course to underserved students should become a required component of the grant.

GEAR UP schools should improve their communication strategies to market the benefits of GEAR UP participation. One strategy could be the proactive involvement of parents who may be able to encourage student participation. Clearly, underserved youths who participate in GEAR UP occasionally may have lost an opportunity to go straight from high school to a 4-year university due to lack of program participation.

Recommendation 5. *Program evaluators should consider course unit and program degree completion variables to measure academic performance and policymakers should consider the development of a national database to track student outcomes.* While the use of a mixed methods research process proved to be effective in determining the impact of GEAR UP, the investigator recommends two variations to further enhance the research methodology. First, participants' college academic performance may also be measured based on course unit and program degree completion. While the cumulative GPA reflects the quantitative measure of academic progress, course unit and degree completion would be an appropriate quantitative measure of academic success.

A national database to track student outcomes will provide the academic research community of valuable data by which to measure the effectiveness of programs such as GEAR UP. Considering the amount of federal and state dollars invested in educational programs such as GEAR UP, the need for a comprehensive

national database for the purpose of program assessment and evaluation would be a significant step towards a structured accountability for the program. The reporting of the study findings to the Under-Secretary of Education, the head of the program, and program practitioners could enhance the viability of GEAR UP for greater effectiveness.

Recommendations for Future Research

To conclude this research project, the investigator would like to offer possible areas of exploration for future research on the subject of GEAR UP. First, research investigators should consider the application of the research methodology applied in this research project with a different group of identified underserved student population, such as African Americans or Native Americans. Second, investigators should consider the application of the research methodology on disaggregated Latino student demographics, such as Puerto Ricans, Mexicans, Central Americans, and other sub-groups. Third, by conducting the research in a much longer longitudinal timespan, it would be interesting to determine GEAR UP's impact on the human subjects after 4 years following high school graduation and further out into adulthood. Finally, future investigators should consider an investigation of the impact of GEAR UP on the development of non-cognitive skills.

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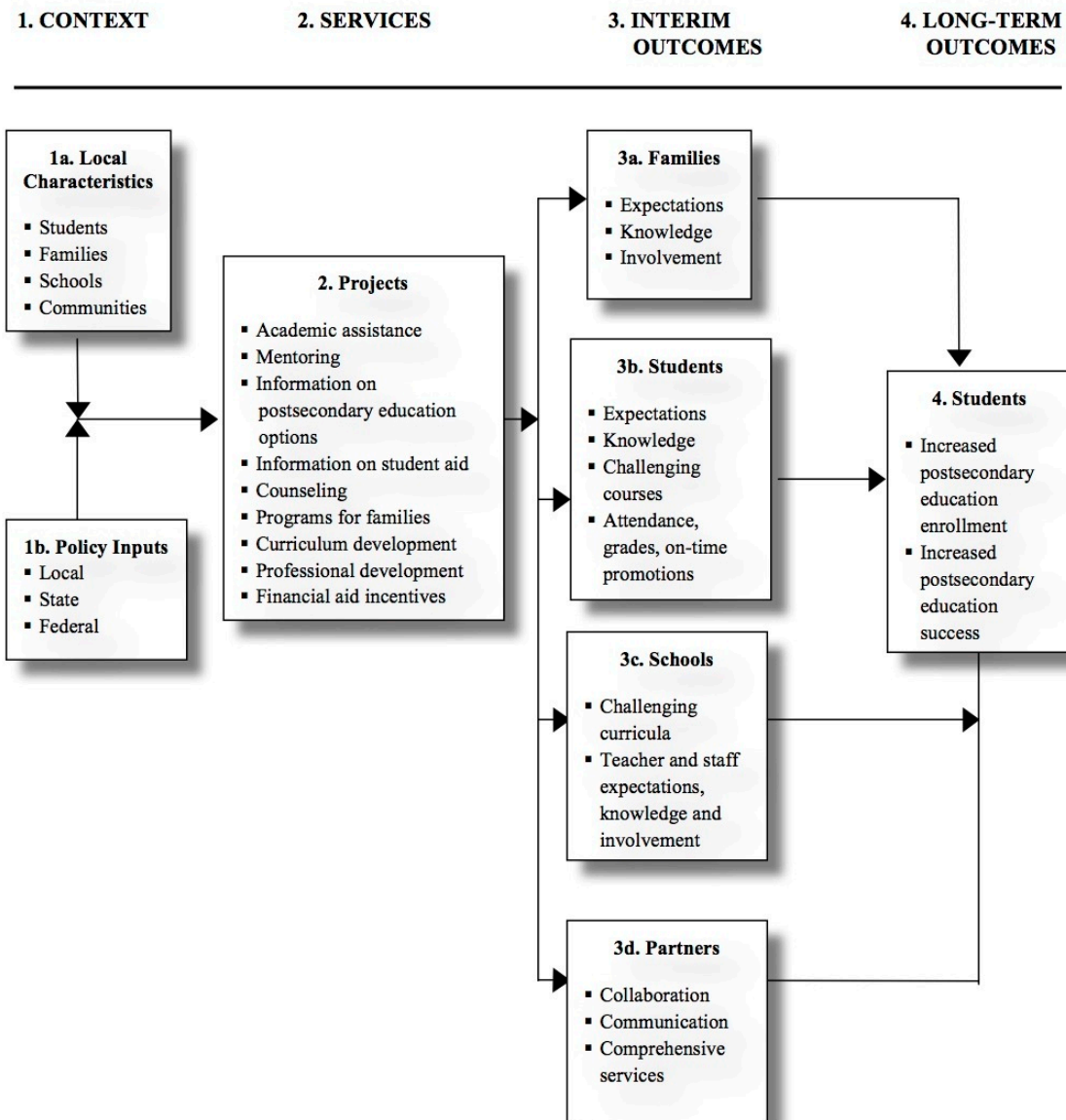
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APPENDIX A

Conceptual Framework of the Impact of GEAR UP



APPENDIX B

Community College Tuition and Fees by State

STATE	TUITION AND FEES
California	723
New Mexico	1,462
Texas	1,585
Arizona	1,671
North Carolina	1,832
Louisiana	2,132
Mississippi	2,141
Wyoming	2,164
Hawaii	2,172
Nevada	2,243
Arkansas	2,311
Nebraska	2,391
Missouri	2,440
Kansas	2,463
Georgia	2,480
Michigan	2,486
Florida	2,497
Idaho	2,557
Oklahoma	2,578
Colorado	2,727
Utah	2,860
West Virginia	2,871
Delaware	2,942
Illinois	2,947
Tennessee	3,128

Kentucky	3,148
Montana	3,173
Ohio	3,227
Maryland	3,237
Indiana	3,256
Washington	3,266
Oregon	3,314
Maine	3,334
Virginia	3,384
Connecticut	3,401
Alabama	3,422
New Jersey	3,553
Pennsylvania	3,577
South Carolina	3,643
Rhode Island	3,652
Wisconsin	3,695
Massachusetts	3,759
Iowa	3,769
New York	3,848
Alaska	3,894
North Dakota	3,929
South Dakota	4,700
Minnesota	4,965
Vermont	5,020
New Hampshire	6,687
District of Columbia	†

APPENDIX C

Research Application Form

[REDACTED]

Application for Research Involving Human Subjects

Research Policy Statement

[REDACTED] encourages research by faculty and staff of the college. In order to protect the individuals who might be involved in the research, [REDACTED] allows research that is considered "exempt" from institutional review (see the attached page on "exempt" research), as defined by the Federal government (Title 45 of the Code of Federal Regulations, Part 46 – the National Research Act of 1974). This application will determine if a research project is exempt. As a general policy, [REDACTED] does not conduct non-exempt research. Any questions regarding conducting research at the college may be directed to the Office of Research.

RESEARCHER INFORMATION

Title of Research Protocol: GEAR UP: What Difference Does It Make?

Principal Investigator (PI): Jeremy Villar

Current Position Title: Associate Dean

Department/Program: GEAR UP

Campus/Office Location: [REDACTED]

E-mail: villarjv@[REDACTED].edu

Campus Phone: x2011

I certify that the protocol and method of obtaining informed consent as approved by [REDACTED] will be followed during the period covered by this research project. Any future changes to the research project will be submitted to the IRB for review and approval prior to implementation.

PI Signature:  Date: 7/11/13

DETERMINING THE EXEMPT STATUS OF THE PROPOSED RESEARCH

Answering the following questions will determine if the proposed research is "exempt:"

Does any part of the research require that subjects be deceived?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will research expose human subjects to discomfort or harassment beyond levels encountered in daily life?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Could disclosure of the subjects' responses outside the research reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will individuals involuntarily confined or detained in penal institutions be subjects of the study? (Note: This does not apply to secondary data analysis of data prisoners)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For research proposed under category 2, will research involve surveys, interview procedures, or observation of public behavior with children/minors?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For research proposed under category 4, will any of the data, documents, records, pathological specimens, or diagnostic specimens be collected or come into existence after the date you apply for exemption?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
For research proposed under category 4, will any of the information obtained from data, documents, records, pathological specimens, or diagnostic specimens that come from private sources be recorded by the investigator in such a manner that subjects can be identified directly or through identifiers linked to the subjects?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

STOP HERE if you checked **YES** to **ANY** of the questions above, your research is **NOT EXEMPT**. [REDACTED] does not have a policy supporting non-exempt research; please contact the Office of Research for more information.

If you have checked **NO** to **ALL** of the questions above, your research may be exempt. Please complete the remainder of this application.

GENERAL QUESTIONS REGARDING THE PROPOSED RESEARCH

Dates of Proposed Research: 9/1/2013 to 5/30/2014

Source of Funding: (check one)

- External Grant (specify, e.g., Title III, NSF)
 Internal Grant (specify, e.g., BSI)
 Self/Unfunded
 Other (specify)

Will individuals outside of [REDACTED] be collaborating on this research? Yes

If "Yes":

External Researcher's Name: Dr. Diana Hiatt-Michael

Collaborating Institution: Pepperdine University

Brief Description of Collaborating External Researcher's Role: (additional information may be requested later)

Enter response here: Dr. Diana Hiatt-Michael serves as the chair of dissertation research project.

Please describe your study clearly and completely, using a style of language that can easily be understood by someone who is not familiar with your research.

1. Describe the purpose of the research activity to be undertaken. Describe how it involves human subjects.

Enter response here: ***The purpose of the research project is to determine the impact of GEAR UP Project Higher Learning [REDACTED] partnership on the college readiness, financial aid awareness, and academic achievement of Latino students.***

2. Explain what [REDACTED] will learn or how the college will benefit from this research.

Enter response here: ***By evaluating the impact of GEAR UP interventions, [REDACTED] will be able to improve the quality of current GEAR UP program interventions. In addition, the information obtained from the project could be valuable if [REDACTED] decides to apply for a GEAR UP partnership grant in the future.***

3. Provide a brief description of the subjects you plan to recruit and the criteria used in the selection process. Indicate whether subjects are adults or children.

Enter response here: ***The study will review college archival data of Latino freshmen who graduated from a GEAR UP participating high school and first entered [REDACTED] in fall 2011 and fall 2012.***

4. Describe how the proposed research meets the criteria for exemption from IRB review and oversight (refer to the exempt category you checked above.)

Enter response here: ***The research study falls under Category 4, which involves the collection or study of existing data, documents, and records. The study will not identify the subjects either directly or through identifiers linked to the subjects nor disclose the names of participating institutions.***

5. Describe the means you will use to obtain data. Check all boxes that apply.

- Surveys or questionnaires distributed by mail or in person. I am attaching a copy of the instrument(s).
 Surveys distributed through the Internet, listservs, or E-mail. I am attaching a copy of the instrument(s).

Provide the Internet address:

- Interviews. I am attaching a copy of the interview questions.
 Focus groups. I am attaching a copy of the questions that will shape the discussion.
 Observation of public behavior.
 Observation of activities in school classrooms.
 Audiotapes. I will obtain consent from the subjects to tape their responses.
 Videotapes. I will obtain consent from the subjects to tape their activities or responses.
 Review of existing data, including databases, medical records, school records, etc. I am attaching a copy of the data collection sheet. I am recording information in such a manner that subjects cannot be identified directly or through identifiers linked to the subjects. All of the information in the records to be reviewed exists as of the date of submission of this application.

- Tissue specimens. All of the specimens have already been collected and are "on the shelf." I am recording information in such a manner that subjects cannot be identified directly or through identifiers linked to the subjects.
- Other. Please explain:

CONFIDENTIALITY

Investigators are required to protect the confidentiality of the information obtained during research, unless the subjects (a) explicitly agree to be identified or quoted, and/or (b) explicitly agree to the release of material captured on audiotapes or videotapes for use in presentations or conferences.

Provide a brief description of the measures you will take to protect confidentiality. Please describe how you will protect the identity of the subjects, their responses, and any data that you obtain from private records or capture on audiotape or videotape. Describe the disposition of the data and/or the tapes once the study has been completed.

Enter response here: The personal identification of the subjects will remain confidential and not be disclosed in the final research document.

INFORMED CONSENT

Research Protocol requires an Information Sheet is provided to research subjects that contains elements of informed consent but does not require a signature. Respond in the space provided here, or attach a copy of the information you plan to provide to your subjects and/or their parents or guardians. (Note: if you use more than one method of recruitment, you may check more than one box)

- Letter(s) attached. I will give each of the subjects a copy of this letter.
- I will be contacting subjects by phone in person by email. I am attaching a script that contains the information I will give them.
- Does not apply. My data analysis is limited to existing records or tissue specimens.
- Response:

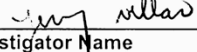
CERTIFICATION OF INVESTIGATOR RESPONSIBILITIES

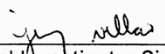
By submitting this form to the IRB I agree/certify that:

1. I am cognizant of, and will comply with, current federal regulations and requirements governing human subject research.
2. I will not begin conducting analyses until the status of this application has been determined by the Office of Research and I have been informed in writing.
3. I will respond promptly to all requests for information or materials solicited by the Office of Research.

PRINCIPAL INVESTIGATOR ASSURANCE:

BY SIGNING THIS FORM YOU ARE ACKNOWLEDGING THAT THE INFORMATION THAT YOU REPORTED ON THIS FORM IS TRUE AND ACCURATE.

Jeremy Villar 
 Print Principal Investigator Name

 7/11/13
 Principal Investigator Signature Date

ADMINISTRATIVE APPROVALS:

PI Supervisor/Administrator: Dr. Lawrence Bradford 
 PI Supervisor/Administrator Signature: _____ Date: 7/11/13

Office of Research Approver: Dr. Edward Pal 
 Office of Research Signature: _____ Date: 7/11/13

Area Vice President:
 Area Vice President Signature: _____ Date: _____

APPENDIX D

Invitation Letter

To a Former GEAR UP participant:

I am a doctoral student at Pepperdine University working on a research project about GEAR UP. My study will focus on how GEAR UP made an impact on Hispanic and Latino students to attend and succeed at a 2-year community college. In addition, I am interested in learning about GEAR UP activities that have made the most impact in helping Hispanic and Latino students prepare for college.

For my research project, I would like to interview students who had previously participated in GEAR UP while in middle and/or high school. Since you had graduated from a GEAR UP participating high school in June 2011 and enrolled as a college freshman at a community college in fall 2011, you are a likely candidate to be eligible to be interviewed for my GEAR UP research project.

To compensate you for your time, I am offering participants a \$15 gift card for a 45-minute interview session with me. If you are interested in being interviewed for this study, I can send you a copy of the interview questions in advance and set-up a date and time for the interview. I can also facilitate the interview in Spanish, should you prefer to be interviewed in Spanish. Just let me know in advance, preferably in your response to this invitation.

I hope that you will seriously consider this offer as I look forward to interviewing you. Your participation in this study will allow me to evaluate the impact of GEAR UP for future students. If you are interested in participating in this study, please reply back to this email or call me at (818) 305-4609. I will interview a limited number of students on a first-come, first served basis. Please respond to this invitation no later than (state deadline). Thank you.

Cordially,

Jeremy Villar
Doctoral Candidate
Organizational Leadership
Graduate School of Education and Psychology (GSEP)
Pepperdine University

APPENDIX E

English Placement Sample Test Questions

Sentence Skills Sample Questions

Directions: Select the best version of the underlined part of the sentence. The first choice is the same as the original sentence. If you think the original sentence is best, choose the first answer.

Stamp collecting being a hobby that is sometimes used in the schools to teach economics and social studies.

- A. being a hobby that is
- B. is a hobby because it is
- C. which is a hobby
- D. is a hobby

Reading Comprehension Sample Question

Directions: Read the statement or passage and then choose the best answer to the question. Answer the question based on what is stated or implied in the statement or passage.

In the words of Thomas DeQuincey, "It is notorious that the memory strengthens as you lay burdens upon it." If, like most people, you have trouble recalling the names of those you have just met, try this: The next time you are introduced, plan to remember the names. Say to yourself, "I'll listen carefully; I'll repeat each person's name to be sure I've got it, and I will remember." You'll discover how effective this technique is and probably recall those names for the rest of your life.

The main idea of the paragraph maintains that the memory

- A. always operates at peak efficiency.
- B. breaks down under great strain.
- C. improves if it is used often.
- D. becomes unreliable if it tires.

WritePlacer Sample Topic

Directions: Prepare a multiple-paragraph writing sample of about 300–600 words on the topic below. You should use the time available to plan, write, review and edit what you have written. Read the assignment carefully before you begin to write.

Some schools require each student to participate in an organized school sport chosen by the student. People at these schools argue that athletics is an important part of the educational experience and that there should be a rule requiring participation. Others argue that students should be free to decide whether or not they wish to participate in organized school sports. Write an essay for a classroom instructor in which you take a position on whether participation in organized school athletics should be required. Be sure to defend your position with logical arguments and appropriate examples. Your essay must be 300–600 words in length.

APPENDIX F**Math Placement Sample Test Questions**

Arithmetic Sample Question

Directions: For each of the questions below, choose the best answer from the four choices given. You may use the paper you received as scratch paper.

$$2.75 + .003 + .158 =$$

- A. 4.36
- B. 2.911
- C. 0.436
- D. 2.938

Elementary Algebra Sample Question

Directions: For each of the questions below, choose the best answer from the four choices given. You may use the paper you received as scratch paper.

If A represents the number of apples purchased at 15 cents each, and B represents the number of bananas purchased at 10 cents each, which of the following represents the total value of the purchases in cents?

- A. $A + B$
- B. $25(A + B)$
- C. $10A + 15B$
- D. $15A + 10B$

College Level Mathematics Sample Question

Directions: For each of the questions below, choose the best answer from the four choices given. You may use the paper you received as scratch paper.

The graph of which of the following equations is a straight line parallel to the graph of $y = 2x$?

- A. $4x - y = 4$
- B. $2x - 2y = 2$
- C. $2x - y = 4$
- D. $2x + y = 2$
- E. $x - 2y = 4$

APPENDIX G

Complete List of Variables

SIS DATABASE FIELDNAME	VARIABLE NAME
STUD_ID	Student ID
STUD_LAST_NAME	Last Name
STUD_FIRST_NAME	First Name
STUD_HISPANIC_FLAG	Hispanic Flag
STUD_EDUC_STATUS_290	High School Graduation Year
	High School Code
CONTACT VARIABLES	
STUD_AREA_CD	Area Code
SMAL_EMAIL_ADDRESS	Personal Email Address
SMAL_DISTRICT_EMAIL	College Email Address
STUD_PHONE_NO	Phone Number
OUTCOME MEASURE VARIABLES	
APMS_PLACEMENT_ENGLISH	English Placement Level
APMS_PLACEMENT_MATH	Math Placement Level
ANC_FA_CAMPUS	Financial Aid Flag
GPA	Cumulative Grade Point Average

APPENDIX H

Human Subjects Interview Tracking Summary

PARTICIPANT	INTERVIEWED	CODE NAME	GENDER	IN PERSON	PHONE	LETTER INVITE	EMAIL INVITE	PHONE ATTEMPTS	DURATION IN MINUTES
Treatment 01	1	Human Subject 17	M	1		1	1	2	5:38
Treatment 02	1	Human Subject 24	M		1	1	1	5	3:18
Treatment 03	1	Human Subject 12	F		1	1	1	1	5:56
Treatment 04			M			1	1	5	
Treatment 05	1	Human Subject 08	F	1		1	1	1	5:45
Treatment 06			M			1	1	5	
Treatment 07			M			1	1	5	
Treatment 08			F			1	1	5	
Treatment 09	1	Human Subject 23	F	1		1	1	5	4:55
Treatment 10			F			1	1	5	
Treatment 11	1	Human Subject 20	M		1	1	1	4	3:47
Treatment 12	1	Human Subject 06	F	1		1	1	1	5:42
Treatment 13			F			1	1	5	
Treatment 14	1	Human Subject 11	M	1		1	1	1	6:32
Treatment 15	1	Human Subject 16	M		1	1	1	2	6:09
Treatment 16			F			1	1	5	
Treatment 17	1	Human Subject 19	F		1	1	1	3	5:25
Treatment 18	1	Human Subject 18	M		1	1	1	3	4:53
Treatment 19			M			1	1	5	
Treatment 20	1	Human Subject 04	F	1		1	1	1	4:41
Treatment 21			M			1	1	5	
Treatment 22			M			1	1	5	
Treatment 23	1	Human Subject 01	F	1		1	1	0	4:37
Treatment 24			M			1	1	5	
Treatment 25			M			1	1	5	
Treatment 26	1	Human Subject 21	M		1	1	1	4	4:03

Treatment 27			M			1	1	5	
Treatment 28			M			1	1	5	
Treatment 29			F			1	1	5	
Treatment 30			F			1	1	5	
Treatment 31	1	Human Subject 02	F		1	1	1	0	4:42
Treatment 32			F			1	1	5	
Treatment 33	1	Human Subject 03	M	1		1	1	1	5:02
Treatment 34			M			1	1	5	
Treatment 35	1	Human Subject 15	M	1		1	1	2	15:11
Treatment 36	1	Human Subject 05	M		1	1	1	1	10:41
Treatment 37	1	Human Subject 14	F		1	1	1	2	6:21
Treatment 38	1	Human Subject 10	M		1	1	1	1	9:15
Treatment 39			F			1	1	5	
Treatment 40	1	Human Subject 22	F	1		1	1	4	6:29
Treatment 41	1	Human Subject 13	M	1		1	1	2	5:23
Treatment 42	1	Human Subject 09	M	1		1	1	1	17:50
Treatment 43			F			1	1	5	
Treatment 44			F			1	1	5	
Treatment 45			F			1	1	5	
Treatment 46	1	Human Subject 07	F	1		1	1	1	12:49
Treatment 47			M			1	1	5	

APPENDIX I

IRB Exempt Approval Letter

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

November 1, 2013

Jeremy Villar

Protocol #: E0913D11

Project Title: GEAR UP: What Difference Does It Make?

Dear Mr. Villar:

Thank you for submitting your application, *GEAR UP: What Difference Does It Make?*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Diana Hiatt-Michael, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - <http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html>) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(4) states:

(b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Category (4) of 45 CFR 46.101, research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

In addition, your application to waive documentation of consent, as indicated in your **Application for Waiver or Alteration of Informed Consent Procedures** form has been **approved**.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at <http://www.pepperdine.edu/irb/graduate/>).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact Michelle Blas, Director of Student Success at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

A handwritten signature in cursive script that reads "Thema Bryant-Davis".

Thema Bryant-Davis, Ph.D.
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Ms. Alexandra Roosa, Director Research and Sponsored Programs
Dr. Diana Hiatt-Michael, Faculty Chair

APPENDIX J

Interview Field Notes

Interview ID	
Name of Research	GEAR UP: What Difference Does It Make?
Location of the Interview	
Name of researcher	Jeremy Villar
Interview Date	
Interview Recorded ID	
Other persons present during the interview	<input type="checkbox"/> Yes, [who] <input type="checkbox"/> No
Language of Interview	
Interpreter used	<input type="checkbox"/> Yes <input type="checkbox"/> No
Notes	

APPENDIX K

Participant Consent Form

I authorize Jeremy Villar, a doctoral student under the supervision of Dr. Diana Hiatt-Michael from the Organizational Leadership doctoral program at Pepperdine University, Graduate School of Education and Psychology, to include me in his research project entitled "GEAR UP: What Difference Does It Make?" The research project is being conducted in partial fulfillment of a doctoral dissertation at Pepperdine University.

I understand that my participation in this study is strictly voluntary.

I understand that I have been asked to participate in a research study, which is designed to investigate the impact of GEAR UP on college access and success among Hispanic and Latino population. The study will require an individual meeting of approximately 30 minutes with each participant.

I acknowledge that I have been asked to participate in this study because I am a community college student who at one time was enrolled in middle school or high school that offered GEAR UP services to its students.

I understand I will be asked to participate in a face-to-face interview where I will answer questions about GEAR UP.

I understand and give consent for the researcher to access my academic and financial aid records for the purpose of conducting this research only. Specifically, I will allow the researcher to review my English and Math Placement Level, Financial Aid Application status, and Cumulative Grade Point Average.

I understand that if I decide to participate in this study, my interview will be audio recorded and my narrative will be transcribed using Microsoft Word document. The recorded file and transcription document will be used for research purposes only. Once the study is completed, the recorded file and transcription documents will be stored in a locked safe. The recorded file and transcription documents will be destroyed and shredded after five years from the creation date.

The potential risks of participating in this study are minimal to none. In the event, I do experience fatigue or need to take a short break, one will be granted to me and the interview may be scheduled at a different time.

I understand the benefits to this study may include: (1) insights on the effectiveness of GEAR UP; (2) knowledge about the impact of GEAR UP on its targeted disadvantaged student population; (3) exploration on which GEAR UP activity has been most effective on the target population.

I understand the possible direct benefits from my participation in this study include receiving a \$15 gift card as a compensation for my time. If I choose to withdraw from the study, or I must end my study participation through no fault of mine, I will still be eligible for the \$15 gift card and my class standing, course grades, and job status at Los Angeles City College will not be affected.

I understand that there will be no medical treatments given in this study.

I understand that I have the right to refuse to participate in, or to withdraw from, the study at any time without prejudice to my current or future standing as a student. I also have the right to refuse to answer any question I choose not to answer. I also understand that there might be times that the researcher may find it necessary to end my study participation.

I understand that no information gathered from my participation in the study will be released to others without my permission, unless law requires such a disclosure. I understand that under California law, the privilege of confidentiality does not extend to information about the abuse of a child, an elderly, or any dependent adult. Likewise, if a person indicates she or he wishes to do serious harm to self, others, or property, the investigator will report any such information mentioned to the authorities. The obligation to report includes alleged or probable abuse as well as known abuse.

If the findings of the study are published, presented to a professional audience, or used for future studies and collaboration with other investigators, no personally identifying information will be released. Only the information gathered would be made available to other investigators with whom the investigator collaborates in future research. Again, the data will be stored in a secure manner and only the investigator will have access. The data and any supporting documents will be destroyed within five years of after the completion of the study.

I understand that if I have any questions regarding the study procedures, I can contact Jeremy Villar at [REDACTED], to get answers to my questions. If I have further questions, I may contact Dr. Diana Hiatt-Michael at [REDACTED]. If I have further questions, I may contact Dr. Thema Bryant-Davis, Ph.D., Chairperson, GPS IRB and Dissertation Support, Pepperdine University, 6100 Center Drive, Los Angeles, CA 90045.

I understand the information in the consent form regarding my participation in the research project. All of my questions have been answered to my satisfaction. I have received a copy of this informed consent, which I have read and understand. I hereby consent to participate in the research study described above.

 Participant's Signature

 Date

 Principal Investigator

 Date

APPENDIX L

Interview Questions

1. What is GEAR UP to you?
2. How long did you attend the schools that offered GEAR UP?
3. Which of the following GEAR UP activities made a difference in making you feel a part of your middle and/or high school?
 Tutoring and Mentoring
 College Field Trips
 Shadow College Students
 Jaime Escalante Summer Math Program
 Career and Technical Education Boot Camps
 Financial Aid Workshops
 College Fairs
 Summer Bridge to College Course
4. How much did you participate in GEAR UP activities?
 Rarely
 Sometimes
 Always
 Never
5. Which of the following personal behavior characteristic(s) did you acquire as a result of your participation in GEAR UP?
 Arrival in class on time
 Increase participation in my classes
 High engagement in school activities
 Timely submission of college and financial aid application
 Bring books and assigned homework in class
 Not give up in class even if the subject is difficult
6. Which GEAR UP activity has helped you the most in your decision to attend college?
7. Did you participate in the GEAR UP Summer Bridge Personal Development course offered in summer 2011?
 Yes No

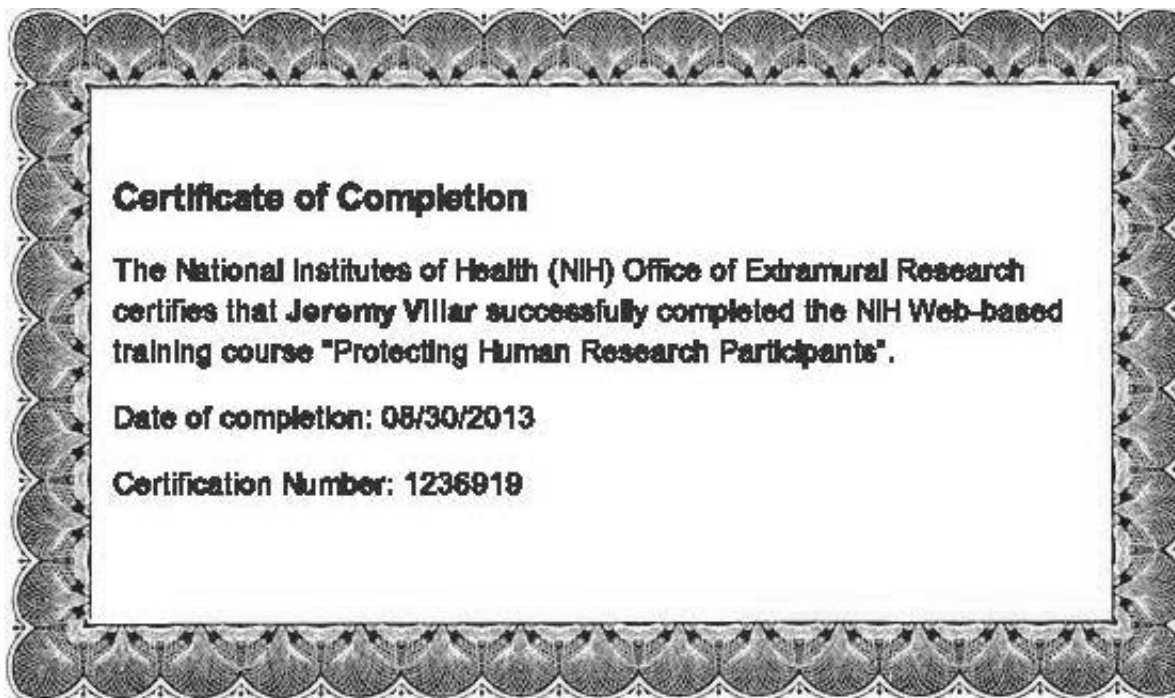
If so, how did that experience helped you transition from high school to college?
8. What recommendations can you make to improve GEAR UP?

APPENDIX M

Materia: Preguntas de la Entrevista Preguntas de la Entrevista

1. Para ti, cuales GEAR UP?
2. Cuanto tiempo asistio a las escuelas que ofrecieron el programa de Gear Up?
3. Cuales de las siguientes actividades de GEAR UP le hicieron sentir que usted pertenecia a su escuela secundaria o preparatoria?
 - Tutor and Mentor
 - Paseos fuera de la escuela
 - Ser sombra de estudiantes de colegio
 - El programa de verano de matematicas de Jaime Escalante
 - Boot Camp de Educacion para Carreras Tecnicas y Profesionales
 - Seminarios de Ayuda Financiera
 - Ferias del Colegio
 - Curso de verano Puente al Colegio
4. Que tanto participo en las actividades de GEAR UP?
 - Raramente
 - Algunas veces
 - Siempre
 - Nunca
5. De las siguientes características de comportamiento, cuales cree usted que adquirio por participar en el programa de GEAR UP?
 - Llegar a mis clases a tiempo
 - Aumentar mi participacion en mis clases
 - Mejor participacion en actividades escolares
 - Presentar las aplicaciones de colegio y ayuda financiera a tiempo
 - Traer mis libros y tareas a clase
 - No rendirme aunque las clases esten dificiles
6. Cual actividad de GEAR UP le a ayudado mas para decidirse a estudiar el colegio?
7. Participo usted en el curso de GEAR UP Summer Bridge Personal Development (curso de verano Puente de Desarrollo Personal) que se ofrecio el verano del 2011?
 - Si No

Si la respuesta es Si, como le ayudo este curso con el cambio de la escuela preparatoria al colegio?
8. Que recomendaciones tiene para hacer el programa de GEAR UP mejor?

APPENDIX N**National Institutes of Health (NIH) Certificate of Completion**

APPENDIX O

Textual Data Coding Analysis Summary

	HS1	HS2	HS3	HS4	HS5	HS6	HS7	HS8	HS9	HS10	HS11	HS12	HS13	HS14	HS15	HS16	HS17	HS18	HS19	HS20	HS21	HS22	HS23	HS24	TOTAL		
What is GEAR UP to you?																											
College Readiness	1		1	1	1	1	1	1	1			1		1	1		1	1		1	1	1	1			17	
College Awareness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1		1		1	1	1	1	20	
Which GEAR UP activities made a difference in making you feel a part of your middle/high school?																											
Tutor/Mentor	1		1	1	1	1		1	1		1	1			1		1	1	1		1	1	1	1		16	
Field Trip		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23
Shadow			1																							1	
Jaime Escalante		1		1			1							1		1	1					1				7	
CTE Boot Camp																										0	
Financial Aid	1	1		1	1			1			1	1	1	1	1						1	1				11	
College Fairs				1					1			1			1											4	
Summer Bridge																										0	
How much did you participate in GEAR UP activities?																											
Rarely						1		1																1		3	
Sometimes	1						1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		14	
Always		1	1	1	1				1																1	7	
Never																										0	
Which personal behavioral characteristics did you acquire as a result of GEAR UP?																											
Arrival in Class					1		1		1		1	1													1	6	
Increased Participation	1	1	1	1	1		1				1				1	1						1		1		11	
High Engagement							1		1						1										1	4	
Timely Submission			1		1	1	1	1	1		1		1	1	1						1		1	1	1	14	
Bring Books					1		1					1			1		1		1							6	
Not Give Up		1			1	1	1	1	1			1		1	1		1	1	1	1		1	1			14	
Social Skills											1															1	
Which GEAR UP activity has helped you the most in your decision to attend college?																											
Tutor/Mentor				1	1	1				1		1		1			1	1	1	1	1	1	1	1		12	
Field Trip	1	1	1		1		1					1		1	1	1		1	1	1	1	1	1	1		10	
Shadow																										0	
Jaime Escalante																										0	
CTE Boot Camp																										0	
Financial Aid					1			1							1											3	
College Fairs															1											1	
Summer Bridge																										0	
Did you participate in the Summer Bridge Personal Development Course?																											
Summer Bridge											1															1	
What recommendations can you make to improve GEAR UP?																											
No Recommendation	1									1	1	1		1					1		1					7	
Sustain Activity		1																								1	
Program promotion			1				1	1												1						4	
Limited Student Space				1					1				1													3	
Student Disinterest					1																					1	
Personal Touch						1																				1	
Intentional							1																			1	
College Choice															1											1	
More Field Trips																1										1	
Proactive participation																						1				1	
Emphasis on Mentoring																	1									1	
Personal Intervention																								1		1	
Additional staffing																							1			1	