THE IMPACT OF THE TRIO STUDENT SUPPORT SERVICES PROGRAM AT UC DAVIS ON PARTICIPANT RETENTION RATES AND GPA

A Thesis

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Eric Sanchez

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Department of Educational Leadership & Policy Studies
Abstract

of

THE IMPACT OF THE TRIO STUDENT SUPPORT SERVICES PROGRAM AT UC DAVIS ON PARTICIPANT RETENTION RATES AND GPA

by

Eric Sanchez

Brief Literature Review

The literature review explored the effects of undergraduate student support services and activities on the retention and academic success of low-income and first-generation college students. Topics from demographics, disadvantages, and strengths inherent to low-income and first-generation college students to institutional and social barriers as well as strengths from lessons learned and research already done on TRIO programs were studied.

Statement of the Problem

As budgets shrink the talk of accountability as well as the need for programs to reach ever-increasing levels of efficacy, expand. On the national level TRIO programs have proven success, however, it is just as important to demonstrate whether or not a program is also achieving significant success at the campus it is situated in. If a TRIO Student Support Service (SSS) program fails to establish itself, as a valid student support
service for the campus, the need for it would likely be called into question. Worse yet, the opportunity to solidify itself as model college retention program could be lost and at higher risk is that programs ability to raise awareness and acceptance of TRIO programs, funding for which is held at the whim of our politicians on Capitol Hill.

Methodology

The study is quantitative and relies on descriptive statistics and statistical analysis of the data gathered. The statistical tools used include a two-tailed T test, and a measure of linear correlation. The statistical analysis of the data was used to determine if membership in the UC Davis TRIO SSS program has an impact, positive or negative, on TRIO SSS participant GPA and retention rates through the seventh quarter.

Conclusions and Recommendations

The study concluded that participation in the UC Davis TRIO SSS program does have a significant and positive impact on student retention/persistence rates through the seventh term of enrollment at UC Davis. In exploring the GPA variable the study revealed justification for services rendered as well as evidence of a possible positive impact on GPA. Recommendations range from ways to refine the current study to areas of further research broken down by sex, ethnicity, region, and other demographics.

____________________________________, Committee Chair
Rosemary Blanchard, Ph.D.

__________________
Date
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The final member of my family that I must acknowledge here is my dear friend and colleague, Donelle Davis. I stand by my claim that you are the greatest supervisor (not boss) I have ever had and that is a title I am sure you will take to my retirement, but far more important is the fact that you are a true friend and member of my family; this thesis could not have happened with out your support.

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An extensive review of the literature was conducted for the purpose of exploring the effects of student support services and activities on the retention and academic success of low-income and first-generation college students. The review of the literature is fundamental as it provides the strategies and services that make up the best practices related to college student retention and when paired with the research findings provide an understanding of what may have influenced the key variables being studied.

To begin, a review of the literature concerning the demographics, disadvantages, and strengths inherent to low-income and first-generation college students will be conducted to better understand the population in question. An analysis of the battles and fundamental challenges these students face once they arrive in college, including institutional and social barriers, and how these challenges impact the students in question will be required in order to provide a significant foundational knowledge of the primary influences on positive student outcomes. The following step will be to explore the literature describing what institutions of higher learning have already accomplished in the field of retention as well as their failures; while keeping in mind areas institutions need to keep better pace with the needs of their diverse student populations. And finally, a summary of TRIO, especially Student Support Services (SSS), as well as how these programs fit into the student retention puzzle, will logically serve the best conclusion of the review of the related literature.
Statement of the Problem

The federal TRIO Student Support Services (SSS) programs, along with their sister TRIO programs like Upward Bound, Educational Talent Search, and McNair, can be found across colleges and universities throughout the country. Of course all TRIO programs strive to create and maintain strong support services worthy of refunding. However, as budgets shrink the talk of accountability and transparency, as well as the need for programs to reach ever-increasing levels of efficacy, expand. It is true that most federal TRIO programs provide rich data demonstrating their success on a national level, however, it is just as important to demonstrate whether or not a program is also achieving significant success at the campus it is situated in. TRIO SSS programs do bring in additional resources that can be leveraged to achieve greater success by the institution and that task, unofficially falls to the TRIO SSS program. If TRIO SSS fails to establish itself as a valid student support service for the campus the need for it would likely be called into question. Far less likely is the opportunity to solidify themselves as model college retention programs that the institution can draw on for best practices. At higher risk is that programs ability to raise awareness and acceptance of TRIO programs, funding for which is held at the whim of our politicians on Capitol Hill.

To this end the study will explore whether or not the University of California at Davis (UC Davis) TRIO SSS program has a significant impact on successful student outcomes, specifically retention/persistence rates and grade point average (GPA). In order to focus the study the following questions will be explored by the research conducted:
1. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student retention through the seventh term of enrollment at UC Davis?

2. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student grade point average (GPA) through the seventh term of enrollment at UC Davis, or term of departure?

Definition of Terms

TRIO is not actually an acronym but a nickname turned official name. The federal TRIO programs comprise outreach, college retention services and even include a training program for directors and staff of other TRIO programs. Their overall purpose is to target, serve and assist low-income, first-generation college students through the academic pipeline from middle school to post baccalaureate programs. The TRIO Student Support Services (SSS) program is one of the eight federal TRIO programs and is charged with improving college graduation rates by supporting its target population.

Retention and persistence for the purpose of this study are used interchangeably and generally refer to how long a student remains enrolled in a college or university until their eventual departure from college or the university. With that being said persistence generally refers to how long an individual manages to remain enrolled while retention generally refers to institutional services and activities that support a student’s ability to persist.
Student *departure* and *attrition* are also used interchangeably in the study and refer to a student who fails to persist for any given reason. While departure/attrition signals the student’s act of leaving the college or university of enrollment it does not mean that a student, once departed, can not return to finish their career in higher education. Returning to higher education, however, is beyond the scope of this study.

A *low-income college student* refers to any student whose total household taxable income falls within the Federal definition of low-income; essentially any taxable income below 150% of the poverty line. A *first-generation college student* is defined as any student whose parents have not earned a baccalaureate degree.

**Importance of the Study**

The purpose of this study is to determine if participation in the TRIO SSS program of UC Davis significantly contributes to student retention rates and GPA. A review of the related literature would establish the best practices any retention program can use, but more importantly help identify the TRIO SSS programs strengths and areas in need of improvement regardless of the results of the study. If the study shows that TRIO SSS does in fact have a positive impact on student outcomes than the study could also serve to reinforce the best practices discovered in the review of the related literature.

Furthermore, the study can help validate the UC Davis TRIO SSS program as a model program and source of best practices for the campus itself, and this status alone can help afford the program additional campus support and resources from which to expand its services. With the study will also come a better understanding of the working
and efficacy of TRIO SSS which would serve both continued support for TRIO as well as foster awareness of the needs and challenges faced by low-income and first-generation college students; all of which could be replicated by other retention based programs.

Limitations

The following study is limited in that its restriction to data gathered solely from the UC Davis TRIO SSS program; making this study highly localized. Furthermore, TRIO SSS programs tend to be organized, structured, and operated in highly local campus environment based manners that can distinguish them from other TRIO SSS programs across the country. Therefore, while the results of this study would be specific to the UC Davis campus, how its impact was evaluated can be duplicated, presumably, at any other TRIO SSS program. Another limitation is that the impact to be assessed will be very broadly based on membership in TRIO SSS and variables will not be further broken down into subgroups of the sample in order to compare persistence and GPA across ethnicity, gender and other subgroups.
CHAPTER 2
REVIEW OF THE RELATED LITERATURE

The purpose of this chapter is to explore the effects of undergraduate support services and activities on the retention and academic success of low-income and first-generation college students. To begin, a review of the literature concerning the demographics, disadvantages, and strengths inherent to low-income and first-generation college students is foundational. The chapter then continues with an analysis of the battles and fundamental challenges these students face once they arrive in college, including institutional and social barriers, and how these challenges impact the students in question. Followed by a description of how good intentions have allowed institutions of higher learning to learn lessons themselves on how to get things done right, balanced by areas institutions need to keep better pace with the needs of their diverse student populations. The next focus of the chapter is a summary of TRIO, especially the Student Support Services (SSS) programs themselves and how they fit in to the topic at hand.

An American Legacy

The 1960’s were, among many things, a time of social upheaval that also bore witness to a country’s attempt to level the playing field of socioeconomic imbalance. This attempt became known as the Great Experiment in education (Kachur, Burns, Fredeen, Gold, Hamm, Hetherington, Hodgkins, Jeong, Kunyk, McGary, Nakagawa, Nungu, Pungur, Riveros, Servage, Vergis, & Yochim, 2008). The underlying principal for education that emerged during this time and that we now find ourselves at least
attempting to massively over haul is that education is a public responsibility (Klees, 2008). This responsibility has led to decades of societal and educational analysis leaving only one certainty in its wake, our society and educational system is more complex than we first thought. In this struggle for understanding it is the disenfranchised that wait, knowingly or not, for society to reach consensus and hopefully then make changes for the better and herein lays in part the rationale for the need of this study.

Champions Defined, Demographics of the Population

Several college impact models affirmed by Cruce, Wolniak, Seifert, and Pascarella (2006) explain that student demographics including their characteristics before entering college are vital factors in the influence of as well as the capability to predict successful college student retention, grade point average, and other positive college outcomes. Bradbury and Mather (2009) found that first-generation college students make up a significant portion of all college students and they defined first-generation college students as those whose parents did not attain a college degree. Thomas, Farrow, and Martinez (1999) embraced a broader definition that allowed for the possibility of parental divorce, separation or no marriage to begin with, by adding language to include parents but also a single parent or guardian that acts as the primary caregiver to the student. Gibbons and Borders (2010) defined first-generation college students as college students with parents with no post-secondary education. This is consistent with the U.S. Department of Education’s Office of Postsecondary Education (2011), which defines first-generation college students as a student whose neither parent has received a bachelor’s degree. The Office of Postsecondary Education (2011) also defines a low-
income student as one whose family unit has a taxable income, for the previous year, that is within 150 percent of the poverty limit as determined by the federal government.

Disadvantages Inherent to Low-Income and First-Generation College Students

While all students who enter college or a university are bound to experience some challenge or struggle the simple fact is that low-income, first-generation college students simply face more than their fair share of difficulties as the research clearly shows. For instance, Bradbury and Mather (2009) identified that the data they researched showed an overall educational disadvantage for first-generation college students when compared to their non-first-generation peers. Gibbons and Borders (2010) suggested that being a first-generation college student contributes to a net negative impact on a student’s college preparation, attendance, and persistence. Bradbury and Mather (2009) found that first-generation college students are at significantly higher peril of failure than that of their non-first-generation peers. Bradbury and Mather (2009) also stated that when contrasted with their peers, first-generation college students are severely lacking in several successful college outcome factors including: family support, high expectations, proper planning and time management, and access to adequate college prep opportunities in their high school. First-generation college students “generally enter college with a relatively limited understanding of what higher education entails and actually have a distinct undergraduate experience” (McMurray & Sorrells, 2009, p. 211). These findings are supported by more research as well as by Willison and Gibson (2011) who described how low-income and first-generation college students are likely to experience isolation and can feel unprepared and isolated in both undergraduate and graduate school. Gibbons
and Borders (2010) postulated that first-generation college students go through substantial college going hardships and challenges, well beyond most of their peers. “Compared to many of their peers, they are largely unprepared for the drastic transition from high school’s regimented school day to the perceived freedoms and responsibilities that accompany college life” (McMurray & Sorrells, 2009, p. 211). Research by Dale (1996) also determined that low-income and first-generation college students come to college with significantly less preparation on an academic level.

On top of all of the general data showing the disadvantage of being a low-income and/or first-generation college student there also exist more specific factors. Such as the research done by Marcal, Hennessey, Curren, and Roberts (2005) that demonstrated the increasing importance of and the ability to use college preparatory courses as predictors of college success. Regrettably, Gibbons and Borders (2010) asserted that first-generation college students are also more likely not to have enrolled in college preparatory courses, throughout the first year of college are more susceptible to lower grade point averages, and drop out of college at higher rates then their non-first-generation peers.

While academic preparation is key, there are other factors that are just as critical. For example, Astin (2004) explores the spiritual development, or lack thereof, in today’s college student and while spirituality is not isolated to low-income and first-generation college students, it is still foundational to them and serves as the basis of their challenges on a personal level. Although the term spirit can sometimes connote a more religious perspective Astin’s (2004) research is referring to a far more general and broad definition
of the student specific to the personal realm. Gibbons and Borders (2010) posited that first-generation college students hold on to a perception that their families do not support their attendance in college and while this may not be the reality the fact remains that a student can personally feel this lack of support and as the saying goes: perception is reality. Furthermore, first-generation college students are far more likely to categorize their own specific set of skills as well as potential for success as second-rate when compared to others, which only adds yet another level of personal challenge to their overall success (McMurray & Sorrells, 2009). There is no personal disadvantage greater than that of no personal, first hand experience. Nguyen, Hays, and Wetstein (2010) described succinctly an obvious plight of first-generation college students in that neither they nor anyone in their social network have or have had first hand experience with college and this is a perfect example of an inherent disadvantage to being a first-generation college student.

Pitre and Pitre (2009) revealed how many low-income and first-generation college students started in high school environments still facing the sociopolitical issue of segregation, including failed attempts to desegregate. There is also significant data presented by Pascarella, Edison, Nora, Hagedorn, and Terenzini (1996) to conclude that race, ability, and social class often sway, if not determine, the likelihood of access to many of the experiences that contribute to success in college and that influence is not in favor of first-generation, low-income college students. Ferreira (2007) claimed that “most urban schools serving primarily low-income, minority children are not geared to developing the high levels of conceptual understanding, scientific and mathematical
reasoning, problem solving, and communication skills needed in an increasingly global and technologically based economy” (p. 97). Ferreira (2007) elaborated that one of the factors why urban, low-income, K-12, students do not enjoy the privilege of quality math and science instruction is because of the lack of teachers qualified to teach those subjects. The societal debate may still rage on concerning whether or not anyone or any institution still practices segregation and discrimination, however, they may be a far more insidious explanation. Zepke and Leach (2005) explain that western culture and epistemological perspectives influence how institutions of higher learning are created and function in a manner that also create fundamental social barriers for first-generation and low-income college students before they even enroll in an institution. Research has also shown that first-generation and low-income college students must confront a plethora of college going issues while acclimating to their new schools and how a lack of preparation on how to manage large class sizes, increasingly more typical in colleges and universities, can erode a student’s sense of security in their academic and social surroundings and thus negatively influence the student transition to a new environment (Johnson, 2005). Zepke and Leach (2005) described the social disadvantage that first-generation college students are placed in when forced to fit into the institution of higher education in which they enrolled.

Of course a review of the issues facing low-income students would not be complete without discussing the money problem. Once low-income students do begin college the expectation is that they also be financially literate, however, Chen and Volpe (1998) discovered that is simply not the case. A quantitative and qualitative analysis of
first-generation female college students was completed by Eitel and Martin (2009) that found first-generation college students were in fact not financially literate and while these same students identified a need to develop their own financial literacy, this fact did not lead students to engage in behavior related to seeking knowledge in financial literacy development. Eitel and Martin (2009) also made the point that low-income students also experience a significant gap in both financial literacy and financial management skills, both of which contribute to successful outcomes in college. Ting and Bryant (2001) identified financial issues as a primary factor for low-income student attrition. Bradbury and Mather (2009) provided research that demonstrated similar issues first-generation college students, from rural areas that are also impacted by high poverty rates, endure. An inescapable truth researched by Hallett and Venegas (2011) is that low-income college students generally come from low-income high schools who’s impact is not an easy one to shake for most of it’s students and this pre-college factor involving low-income high schools has been revealed to be critical regarding successful college outcomes (Owens, Lacey, Rawls & Holbert-Quince, 2010). Chaney, Muraskin, Cahalan, and Goodwin (1998) found that 56% of the students they surveyed, when asked their reason for leaving the institution, identified insufficient financial resources as the primary cause; furthermore, 55% still enrolled in the institution responded that insufficient financial resources, also as the primary cause, might cause them to leave college as well. Another aspect of the plight of first-generation college students, already overrepresented amid college students who drop out of college, is exacerbated by the fact that they are more susceptible to stress from financial issues and coupled with poor use of already
scarce financial resources contributes to a drastic hindrance of a students ability to persist and eventually complete their degree (Eitel & Martin, 2009). Chaney et al. (1998) also found that the students financial strain can come from many directions including their family back at home. Eitel and Martin (2009) also explained that many first-generation college students often lacked the financial support of their parents, which is not traditional of their non-first-generation peers. This research begins to shed light on a vicious cycle that can be perpetuated by the student experience while in college, which illustrates how the student inherited their mismanagement of financial resources from their family.

Some would argue that these low-income college students lose out on opportunities because they simply do not take advantage of the various opportunities in question and yet Owens et al. (2010) also argued “more often than not, poor and minority students are placed in less challenging classes and attend schools with low graduation rates and that vary in academic rigor and quality of instruction” (p. 293) which again, as the research demonstrates, are significant predictors of college success. Advanced placement classes have increasingly shifted from helping to better prepare students for college as well as potentially save students money in college to becoming more synonymous with gatekeepers ill-advantaging students with less access to the exams applying to elite colleges and universities (Hallett & Venegas, 2011). Hallett and Venegas (2011) compared schools that serve low-income students to their colleagues serving affluent communities and found that low-income schools offered significantly
fewer advanced placement courses and it is only recently that these inequities have begun to be called to question.

Strengths Gained as Low-Income and First-Generation College Students

Even with mounting odds against them research has shown the fact that first-generation college student enrollment rates are on the rise (Bradbury & Mather, 2009; Conrad, Canetto, Macphee & Farro, 2009). Zepke and Leach (2005) claim that first-generation college student’s can capitalize on a major strength, capable of supporting strong positive college outcomes, inherent to their life experience so long as they do not sacrifice that experience and their personal history to the social pressures they will encounter in college. Despite their chances, low-income and first-generation college students still fight the good fight. Where does an unconquerable will in the face of great adversity come from? The strength to resist so many mounting disadvantages for first-generation and low-income college students must begin from within. Astin (2004) described the spiritual domain that pertains to the human cognizance that which we experience surreptitiously in our idiosyncratic sentience. “More specifically, spirituality has to do with the values that we hold most dear, our sense of who we are and where we come from, our beliefs about why we are here—the meaning and purpose that we see in our work and our life—and our sense of connectedness to each other and to the world around us” (Astin, 2004, p. 34).
Battlefield: Education, Loss or Gain by Attrition

Battle and war used as metaphors to describe education can be considered a bit bleak, however, for many, especially low-income and first-generation college students, getting a college education is often an epic battle. For one, the battlefield of this war is wrought full of barriers of a world designed for someone else, leaving it’s combatants often wondering what they are even doing their let alone risking life and limb. Yet despite their toil or perhaps better said, because of their toil an indomitable spirit is often forged in the heat of this war that each college graduate can then take with them wherever their new travels may take them. And history is proof via those who came before that the war can be won and the fruits of victory can be savored as it is often these people that return to the battlefield of education to help save, educate, guide and pull through, in one piece, the new generations simply striving for a better way of life for them, and often unbeknownst them their families as well.

Barriers of a World Designed for Someone Else

The research clearly shows that low-income and first-generation college students are not well prepared for the academic rigors of college life and the fact that this issue will play itself out as a challenge to be overcome by said students is assured (Dale, 1996). Zepke and Leach (2005) found via student surveys that academic and social integration is profoundly linked to how an institution of higher education conducts its business and maintains its infrastructure, especially its overall bureaucracy, and how the integration of the student into the university takes place has obvious connections to their levels of stress and the types of challenges they will face once at the institution. Lacking a sense of
belonging, as one of many possible consequences of institutional barriers, is but one challenge to college success and graduation for first-generation college students (Owens et al., 2010). One, of many factors institutions of higher learning must explore is the availability of their services because as Thomas et al. (1998) point out that how available support services for students are, both perceived and actual, is one crucial link to the realization of an institution's retention goal and the subsequent graduation of its students. Research seems to suggest that there has been an increased stress on the nation's richest and elite institutions of higher education to provide more comprehensive and needed services to its low-income students and yet the net effect of the supposed response to this call to action appears to have very little if non-existent outcomes suggesting that low-income students will continue to face above average challenges in the realm of institutional barriers at these elite institutions of higher education (Supiano & Fuller, 2011). Being in the mindset of alienation, which Ting and Bryant (2001) point out as a major factor negatively impacting academic achievement; are further exacerbated for first-generation and low-income college students at elite colleges who already send the message of not needing to provide support to this population of students. Some researchers also demonstrated that the combination of low-income college students and access to financial aid and in particular credit cards and a new environment and peer group can prove to be a financial time bomb waiting to go off (Eitel & Martin, 2009; Chen & Volpe, 1998). That study also described that even with financial aid, financial problems still very much remain a part of the fundamental challenges low-income students face.
Research by Ferreira (2007) describes the need to invest in students in kindergarten through the twelfth grade in order to better equip those students with the tools needed to face and overcome the challenges of college for low-income students. Unfortunately, many low-income youth discover during college that their high schools simply did not help them develop the necessary levels of theoretical and practical comprehension and understanding vital to the development of the mathematical, communication, problem solving, scientific and many other needed skills essential for college success (Ferreira, 2007). Bridging the gap that exists from high school to college for first-generation and low-income college students, which incorporates both educational and social alterations, can be a daunting challenge to overcome (Dale, 1996). Cruce et al. (2006) also made the point of how various influences coming from the college have a direct impact on student outcomes. Research by Nguyen et al. (2010) demonstrates that students who enroll in an course or program designed to orient students to the campus life, culture, and resources can significantly predict a student making it through the first few years of college, which suggests that a powerful challenge faced by students is the seemingly simple task of navigating the university since arrival. Furthermore, students often face the additional stress of an institution that offers many support services and as Thomas et al. (1998) point out that a specific combination of student services and support is not a prerequisite of college success therefore students must discover, mainly through trail and error, what configuration of support works best for their success. Yet another barrier to college success can be courses designed as prerequisites that attempt to remove low performing and weak students for the purpose of
improving overall course performance records (Marcal et al., 2005). However, when managed properly valid and truly effective prerequisite courses can serve to indicate the set of needed skills upon entering a specific course that are fundamental for the successful completion of the course in question (Marcal et al., 2005).

Once at the university a major challenge for students is how much or little the institution they are enrolled at proactively stimulates in its student population a better and genuine openness to the racial and cultural make up of the institution especially in regards to its diversity, all of which falls on the spectrum between ethnocentrism and xenocentrism (Pascarella et al., 1996). Beside institutional barriers facing low-income and first-generation college students come conflicts that exist within the environment of the student’s college and the culture in which the student was raised, including the values learned during that upbringing (Owens et al., 2010). Zepke and Leach (2005) explored the notion of institutional barriers that exist for low-income and first-generation college students and explained that western culture and epistemological perspectives drive the creation, purpose and development of institutions of higher learning in a manner that create institutional barriers that are inherently biased against first-generation and low-income college students.

African American men who are first-generation college students upon arrival at college encounter inadequate and ever decreasing resources let alone prospects for career development as well as attaining career goals, which only serves as yet another unfortunate institutional barrier to their overall success (Owens et al., 2010). “Cultural conflicts with the dominant white culture such as common traditions, values, and
interests caused Native Americans to drop out from universities” (Ting & Bryant, 2001, p.23). On a social level first-generation and low-income college students, more often then not, must renegotiate their own identities as they navigate a world new and unknown to their own social group (McMurray & Sorrells, 2009). Research by Ting and Bryant (2001) demonstrates that among Native American college students higher degrees of assimilation were related to higher college GPA’s, however, often at the cost of sacrificed personal and cultural identities. The process of fitting a person into any given institution or group, in this case a low-income and/or first-generation college student into an institution of higher learning, is known as assimilation as described by Zepke and Leach (2005) and is a prime example of how institutional barriers begin and can impact a student even before submitting an application. For example, first-generation and low-income college students, already in the minority and thus will have to assimilate into a college environment, will already be hit with the challenge of filling out an application with which they or their parents have no prior experience or even a frame of reference. Very interesting discourse exists on the topic of college assimilation and integration processes as they relate to students and cultural diversity. Zepke and Leach (2005) described the social process of assimilation, the definition of which they simplified as forcing the student to fit into the institution. Institutions of higher learning can negatively impact student success when bureaucracies lead students to perceive a lack of accommodations made for the student by the institution, as well as the real or perceived diminished value the institution places on the students diverse cultural identities (Zepke & Leach, 2005). Also, the higher the degree of assimilation felt by first-generation
college students the greater their grade point averages suffered (Ting & Bryant, 2001; Zepke & Leach, 2005). There is also a growing body of emerging research demonstrating the need for institutions to move from the old institutional assimilationist model to the new institutional adaptation model where the university must make strides to adapt itself to serve the ever changing needs of its extremely diverse student population (Zepke & Leach, 2005).

Institutional integration, of diverse student backgrounds, is defined as institutions that at least attempt to modify their infrastructure and culture to accommodate their ever-diversifying student populations (Zepke & Leach, 2005). Pascarella et al. (1996) also point out that a college’s impact on the successful integration of its students to their campus environment is based on the cumulative experience of the student over time versus the offshoot of a singular experience which, points to the need of the college to dismantle its own institutional barriers from a holistic strategy. For instance while some positive strides in institutional integration and adaptation have been made institutions can still allow subsets of their student populations to fall through the cracks as can be seen with transfer students who are not provided a strong opportunity to connect with their communities and support networks created before transferring to a four-year institution (Johnson, 2005). Another example of the challenges of integration is once in college, student athletes in particular, first-generation and low-income students have to deal with a phenomenon known as stereotype threat which generates stress and challenges success simply by creating anxiety around the idea of not perpetuating negative stereotypes of a students own ethnic or cultural group (Killeya, 2001). These stressors and challenges
should prompt institutions of higher learning to encourage the entire community to interact on a personal level independent of the classroom setting in particular and at the same time work toward assuring a holistic approach to student success as these are mutually complimentary to one another and not mutually exclusive (Zepke & Leach, 2005).

Indomitable spirit

There is no doubt that first-generation and low-income college students bring with them to college varying and abundant strengths, but irreparably those strengths will need to be developed further and some of those skills definitely include but are not limited to: study time, regularity of peer and faculty collaborations, and successfully finishing a course or program in college success (Nguyen et al., 2010). Zepke and Leach (2005) postulated that first-generation college student’s that can realize their educational aspirations without giving up their identity or cultural roots are (a) better able to resolve the consequences of negative academic outcomes; (b) are able to increase the likelihood of positive educational outcomes; (c) can also gain access to a stronger social support network; and (d) are more capable of effectively safeguarding themselves against the effects of stress and other problems.

Research shows the power of support afforded by a students social network as a safeguard to students in regards to stress and that said social network plays a critical role in the successful integration of a student into the college institution and campus environment (Cruce et al., 2006; Dale, 1996; DeBerard, Speilmans & Julka, 2004; Pascarella et al., 1996). The chances of student success in college are increased when the
students can grow in comfort with the overall environment of an institution including its behaviors as well as its most intricate processes (Zepke & Leach, 2005). College going itself has a significant impact on the increased and genuine openness to diversity of most college students, which has also been found to have a direct and positive impact on the successful completion of college as well as the acquiring of needed skills and maturation of college students (Pascarella et al., 1996).

Pascarella et al. (1996) posit that one of the challenges students will face, in particular during their first year in college, concerns their openness to cultural, ethnic, and racial diversity. The same research also points out that the challenges to student openness are important at every level of the student’s involvement at college and not necessarily at just a few key points, which points to the importance of acceptance on a diverse level as a life long practice. Research by Cruce et al. (2006) also describes the need for college students to embrace diversity in part for the sake of their own success.

Those Who Came Before

If history has taught us anything it is to learn from our mistakes, not that we always do. Thankfully there exist an army of retention specialists, educators, administrators and many more whom came before us and who are providing us with their wisdom and experience fighting the good fight for low-income and first-generation college students. Among their many contributions is the notion of intrusive advising which is based on the principle that advisors can “not wait for at-risk students to come to them, but instead actively seek them out in order to engage them in the advisement process” (Thomas et al., 1998, p. 391). Cruce et al. (2006) pointed out that many best
practices, when followed by students, especially when reinforced by the institution, truly support college achievement.

Astin (2004) contends that not only discussion of spirituality, as it relates to the institution of higher learning as much as it does to the students, but also its development on an institutional level is vital and greatly foundational to every aspect of the student. Astin (2004) points to the need for teachers to engage in service learning which research suggests is one of the best models for the development of human spirituality which serves as the holistic foundation of our humanity.

Involvement in their community has a positive impact on a student’s outlook concerning the academic topics of mathematics and science, which in turn can increase their chances for success in said fields (Ferreira, 2007). Research also indicates that if first-generation college students can ease into the very unfamiliar environment of college their chances for success increase; one example of this is first enrolling in smaller class sizes before taking on the larger lecture halls (Johnson, 2005). First-generation college students often bring with them very strong cultural backgrounds, which often provides a positive impact on college success, especially when the students cultural background is celebrated and accepted (Ting & Bryant, 2001).

As part of a student’s social network research does show that parental support is definitely correlated to positive college outcomes and so can be a highly vital piece of most students support structure (DeBerard et al., 2004). Ferreira (2007) discussed the connection that exists between absenteeism in youth once connected with mentors drawn from the community and its measurable reduction in student absences from school. The
EXCEL program analyzed by Mahoney (1998) has long identified the need to hold its students to a high standard in order to encourage success. Assigning mentors to students as well as providing some guidance to the mentor/mentee relationship is also identified as a key to the success of first-generation and low-income college students (Dale, 1996). Research by Zepke and Leach (2005) also points to the important mentorship role students teachers can play as well. Institutions of higher learning must be able to provide mentors, among other services, for first-generation and low-income college students in order to support and contribute the needed guidance for students to properly balance the effects of acculturation on college success outcomes (Ting & Bryant, 2001). Job shadowing along with opportunities for internship experiences can serve as a positive conduit for the transfer of institutional knowledge (Walsh, 2000). Walsh (2000) also identified the positive effect of enabling communication among students and instructors on positive college outcomes as well.

Thomas et al. (1998) also demonstrate how many currently strong retention efforts have learned over the years to leverage what resources they do have available in order to serve their student populations. It is of course also necessary to test student levels of academic strengths and weaknesses in order to provide students with development in the correct areas of need (Dale, 1996). Research by Walsh (2000) reinforces the idea that first-generation and low-income college students enter the college with the needed skills, but do need to further develop many of them, over time, in order to achieve success. According to Mahoney (1998) the idea that students do have certain specific skills to improve is supported by one model student support program’s ultimate
goal “to help students learn self-sustaining skills that enable them to thrive and become independent learners” (p. 384).

Good Intentions

Often good intentions drive progress especially when it comes to society-based endeavors like education. However, as the saying goes, sometimes very negative outcomes can be born of the best of intentions. The following section explores the lessons we have learned in regards to positive college outcomes and supporting student growth and eventual graduation as well as areas where bureaucracies can fall behind losing pace with an ever-accelerating human population.

Lessons Learned

Research has demonstrated that how engaged and involved a student becomes in the college environment is a crucial element that can determine successful college outcomes demonstrating that colleges and universities, at least overall, are having a powerful and positive cumulative effect on students (Pascarella et al., 1996). Cruce et al. (2006) summarize Chickering and Gamson’s synthesis of seven principles used to guide best practices in undergraduate education and they are: “(a) encouraging student-faculty contact, (b) encouraging cooperation among students, (c) encouraging active learning, (d) giving prompt feedback to students, (e) emphasizing time on task, (f) communicating high expectations, and (g) respecting diverse talents and ways of learning (p. 365).

Concerning low-income and first-generation college students and the challenges they face it is reassuring to know that many institutions of higher learning are concentrating on a
array of retention policies and stratagems, have recognized a plethora of institutionally based and personally derived causes which impact retention, and are committed to increasing positive college outcomes for students (Dale, 1996). Disadvantaged students stand a higher rate of retention by a college or university if the “institutions have a supportive and encouraging environment, special services offered during the college adjustment period, an explicit minority enrollment policy, comprehensive service offerings, dedicated staff, systematic data collection” (p. 198) and more (Chaney et al., 1998).

Support networks, study skill development, and tutoring are all vital support services programs should offer to help increase successful college outcomes (Astin, 2004; Chaney et al., 1998; Dale, 1996; Johnson, 2005; Mahoney, 1998; Muraskin, 1997; Thomas et al., 1999; and Walsh, 2000). Different institutions of higher learning have, in different ways and for different reasons, engaged in the expansion of learning communities and many have recognized that the sharing of the college experience with ones peers as well as professors and staff, as well as with many others involved with a college campus, all benefit from a more enriched college and social experience (Ferreira, 2007).

In cases where institutions have made significant integration progress and adapted to their students’ needs, student attrition is highly impacted by student perceptions involving their feelings of accommodations made by the institution, the value the institution places on their cultural nuances, and how harmoniously they feel their original identity and developing identity merge (Zepke and Leach, 2005). Johnson (2005)
demonstrated that when it comes to low-income and first-generation college students, smaller class sizes could foster, at the very least, a stronger sense of security in their social surroundings and thus ease the student transition to a new environment.

When it comes to college fraternity’s and sorority’s involvement in one seems to be highly predictable as one of the must do’s of college life and is considered by many college students and alumni as time honored traditions at nearly every institution of higher learning, however, “belonging to a fraternity or sorority had a significant negative impact on openness to diversity / challenge, and the largest negative impact was observed for white (versus nonwhite) students” (Pascarella et al., 1996, p. 188). Fortunately, many colleges understand the need to adapt to the needs of its students and are making many changes to help engage it’s diverse student populations (Thomas et al., 1998).

Keeping Pace, Where Bureaucracies Can Fall Behind

While many orientation programs do exist on most if not all colleges and universities, many institutions are failing to keep up with the demographic shift of entering freshman becoming more and more diverse and particularly with an ever-growing population of first-generation college students (Nguyen et al., 2010). Research by Gibbons and Borders (2010) argues that much research is focused on students upon college arrival instead of on many of the precollege factors that exist that have an influence on student decision making before they even come to college and attention needs to be paid to pre-college factors as well, especially in trying to ascertain a well-informed explanation of a student’s success or failure. Furthermore, when institutions of higher education do begin to make modifications to their environments such change
would require considerable partnerships and relationship building with all involved stakeholders as well as large-scale coordination and not to mention the difficult task of fostering a greater sense of awareness at all levels of an academic institution (Pascarella et al., 1996).

Unfortunately, research has shown that some support service programs have not been able to clearly show a relationship connecting the amount and types of counseling contacts and impact on retention rates (Thomas et al., 1998) and this leads some college institutions into disarray when they can not focus on making their student support services more efficient. While research does show that courses and programs designed to orient new students to the college environment have significant and a positive impact of college success, a poorly managed, or worse yet non-existent orientation program, can be detrimental to students (Nguyen et al., 2010). For instance, some institutions do not provide, or by nature or location simply do not lend themselves to, ease of connection to students pre-college community which can deal a devastating blow to students, in particular transfer students, seeking to continue their previous social support systems (Johnson, 2005). Supiano and Fuller (2011) describe a situation, focused predominantly among private institutions, where both enrollment of more low-income students and the creation of services to retain them are lagging. Support services are critical to the success of first-generation and low-income college students and yet even more fundamental is how well an institution makes those services available to their target populations and the campus at large (Thomas et al., 1998). If an institution is failing at making support services available to students, something that can happen without an institution even
realizing it, the negative impact on college outcomes can be very severe. Many institutions of higher learning provide varying and numerous support services, however, they tend to address a extensive assortment of students and while their may be strong reasons for casting such a large net when it comes to initiatives of involving persistence augmentation more often then not the larger net is just plain wasteful (Herreid & Miller, 2008). Many colleges and universities provide successful orientation programs and in fact design specific programs and courses for first-generation and low-income students (Nguyen et al., 2010).

The research previously mentioned by Chaney et al. (1998) which identified financial issues as significant contributors to college dropout also raises the concern of whether or not colleges and universities could be doing more to raise the financial literacy and money management skills of its students. It is well acknowledged that financial aid has played a significant role in allowing low-income youth to attend college, however, as can be seen through the research of Chaney et al. (1998), many students still claim it is not enough. Research by Eitel and Martin (2009) also points out the “need for financial literacy education as an integrated component of higher education, as well as a need for professional personal financial planners to ensure future financial stability and success for those who graduate” (p. 616). The institutions of higher learning themselves should rise to address such an issue, however, they can’t seem to decide if this is something they should even be getting involved with. Even if colleges and universities do not make a specific requirement consideration should at least be put into offering an
elective or seminar style course that could address, to some level, the issue of financial literacy.

TRIO: One of the Last National Champions of Higher Education Equality

The fundamental goal of TRIO is to open the doors of higher education and thus socioeconomic prosperity to all who would not normally have such access or success. TRIO was born during the Civil Rights movement but more than that it was forged by the era as a powerful tool to balance equality in society on a national level. The fundamental philosophy to how such a goal is accomplished is holistic and embraces diversity on every human level in order to propel it’s participants not only into maturity and productivity but also as architects for a better world.

TRIO Defined

Three identifiers best define the TRIO student participant population: (a) first-generation college students, (b) low-income; and (c) students with disabilities (Chaney et al., 1998; Dale, 1996; Muraskin, 1997; Parker, 2003; Pitre & Pitre, 2009; Thomas et al., 1998; Walsh, 2000; and Willison & Gibson, 2011). While these three identifiers have been established as the primary demographic descriptors of TRIO participants it should also be emphasized that the U.S. Department of Education’s Office of Postsecondary Education (2011) also requires that two thirds of all TRIO participants be both low-income and first-generation college students and there is no set minimum threshold for TRIO participants with disabilities. TRIO programs define low-income students based on the federal governments formula for defining low-income families (Office of Postsecondary Education, 2011).
Thomas et al. (1998) provided a robust description of the TRIO SSS program. Because of the comprehensiveness and centrality of their description, it is quoted in full with notations to recent legislative changes in the following:

In the mid-1960s, the United States began a modest effort to expand access to higher education beyond the traditional pool of wealthy and privileged White youth. This effort marked the first time since the end of World War II and the enactment of the landmark G.I. Bill of Rights that the U.S. government had made broadening access to higher education one of its priorities. This time, however, the target population was academically talented poor youth, not demobilized adult veterans of the armed forces. The legislations that enabled this new opportunity was Public Law 90-575, the Higher Education Amendments of 1968 (HEA). Three of the programs created by the HEA – Upward Bound, Talent Search, and Special Services for Disadvantaged Students – came to be known as the “TRIO” programs, which have since been supplemented by four additional initiatives yet continue to fall under this rubric.

The Special Services for Disadvantaged Students program, administered by the U.S. Department of Education, was initiated in 1970 and later renamed Student Support Services (SSS). The program is designed to help disadvantaged students complete postsecondary education. Currently in operation at over 700 two- and four-year colleges throughout the nation, SSS has three major goals:

1. to increase the college retention and graduation rates of program-eligible students,
2. to increase the transfer rates of eligible students from two- to four-year institutions, and
3. to foster an institutional climate supportive of success for low-income, first-generation-college students and students with disabilities.

According to the Office of Postsecondary Education (2011) the third major goal described above by Thomas et al. (1998) was recently dropped and replaced by a new goal to help SSS participants maintain good academic standing throughout their undergraduate career.

The range of services SSS provides to students includes academic advising, career exploration, counseling, remedial/development courses,
pre-freshman and other summer components, study skills courses, supplemental instruction, and tutoring.

While SSS programs do provide the above-mentioned services it is vital to note that the above list is not exhaustive and that SSS programs are in fact encouraged to customize their services based on their locations and student participant needs. Thomas et al. (1998) continue their description of SSS programs with:

*The target population of SSS programs is low-income, first-generation-college students in need of academic support to foster their success in higher education. The requirement that participants come from low-income backgrounds was intended to ensure that groups traditionally at the lowest rungs of the economic ladder in the U.S. – namely, the urban and rural poor and Black, Hispanic, and American Indian minorities – would be provided with opportunities to improve their economic and social conditions through higher education, thereby strengthening the nation’s human resource pool. A “first-generation-college student” is defined as an individual whose parents or primary single parent did not earn a bachelor’s degree. The typical SSS participant is an academically underprepared student meeting the income and college attendance criteria who is usually categorized by terms such as “high-potential underachiever,” “disadvantaged,” “nontraditional,” “high-risk,” or “marginal.”*

TRIO at Work

Research by Dale (1996) demonstrated that student involvement in Horizons, an SSS program at Purdue University, greatly increased the positive student retention rate as well as the overall graduation rate with a 10 semester retention rate nearly double that of the control group. Certain best practices can be identified across select exemplary sites and include “a project designed freshman year experience for most or all participants, an emphasis on providing academic support for developmental and popular freshman courses” (p. 1) and “widespread student contact with all available and needed program
services and on the administrative side of the program “targeted participant recruitment and participation incentives, dedicated staff and directors with strong institutional attachments, and an important role for the project on campus” (p. 1) (Muraskin, 1997).

As numerous as SSS programs are so are their methods of service, some programs only provide services via SSS specific offerings while other programs deliver their own services along with what their institution may offer students as well (Chaney et al., 1998).

Another strength of TRIO is its pipeline of expertise, service, and influence from the sixth grade through the twelfth grade system through college and even via the McNair Scholars program guiding, developing and supporting students into post-baccalaureate study (Willison & Gibson, 2011). Currently in the U.S. equity-based policy initiatives are under attack from multiple vectors and yet TRIO programs endure as a proven pathway for safeguarding low-income and first-generation student preparedness for colleges and universities and overall higher education access for all members of our great nation (Pitre & Pitre, 2009). Pitre and Pitre (2009) go on to say, “TRIO programs are now more critical than ever for extending higher educational opportunities” (p. 96).

Rationale for the Study

Notwithstanding all of the positive research in support of TRIO programs a critical need still exists best stated by Mahoney (1998) as follows:

No matter which factors are selected to explain TRIO’s widespread success, and regardless of the weight given one over the other, these findings say little about the success achieved by individual TRIO programs at the local level. Due to the wide variety among TRIO programs and the fact that each represents a unique contract between the
Evaluation and assessment is needed on the local, campus-by-campus level, to determine how truly successful a TRIO SSS program is. More importantly, it is vital to determine if a TRIO SSS program is successful not only when measured by federal standards but also when compared to the institution of higher education where they are based and conducting business. The simple fact is that all institutions of higher education are different, as is their success in campus wide student retention efforts and while having a TRIO SSS program onboard can provide additional support to students that support is only a valuable addition if the program can perform at or beyond that campuses success rate. The rationale for this study is to determine if the University of California at Davis (UC Davis) TRIO SSS program has a significant impact on student positive outcomes for college in comparison to the positive college outcomes already produced by UC Davis, specifically when compared to the control group.

Summary

In this review of literature we have explored the effects of student support service programs and activities on the retention and academic success of low-income and first-generation college students. Literature concerning the demographics, disadvantages, and strengths inherent to low-income and first-generation college students as well as the battles and fundamental challenges these students face once they arrive in college,
including institutional and social barriers, and how these challenges impact the students in question have been covered. The impact of good intentions and how they have driven institutions of higher learning themselves to learn best practices balanced by areas institutions need to keep better pace with the needs of their diverse student populations have been explored. A brief history and description of TRIO programs themselves, especially TRIO SSS, have been provided.
CHAPTER 3

METHODOLOGY

Setting of the Study

At the University of California Davis (UC Davis) the TRIO Student Support Services (SSS) program is a federally funded, undergraduate retention based, program that serves low-income and first-generation college students. UC Davis is located in the city of Davis and is home to a diverse student population. The campuses 2005-2006 general demographics were as follows: 28,815 total students, 55% Female and 45% male, 2% African-American/Black, 0.6% American Indian/Alaska Native, 30% Asian, 10% Hispanic, 0.9% Pacific Islander, 40% White, and 16.5% other. In 2005-2006 the UC Davis TRIO SSS program was comprised of 165 participants and about 64% female and 36% Male, 11% African-American/Black, 41% Asian, 39% Hispanic, 4% White, 5% other. Of the 165 TRIO SSS participants 6% were only low-income, 21% were only first-generation college students, and 73% were both low-income and first-generation college students.

In today’s world there is much talk about accountability and transparency and while federal TRIO programs provide rich data demonstrating their success on a national level the ability to demonstrate that same success at the local campus level is just as crucial for two reasons, (a) to reinforce their validity and solidify themselves as model college access and retention programs that the institution can draw on for best practices; and (b) to champion their own success stories for the purpose of catalyzing grassroots efforts supporting their continued funding as well as raising awareness and acceptance in
regards to continued support for low-income and first-generation college students. The latter reason in particular is of the upmost importance as the political struggle for continued federal funding for TRIO programs rages on.

The purpose of this study was to determine if participation in the TRIO SSS program of UC Davis significantly contributes to student retention rates and academic performance among TRIO SSS participants when compared to non-TRIO SSS but Educational Opportunity Program (EOP) students at UC Davis who are eligible to be in the TRIO SSS program. To this end the following questions are posed by this study:

1. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student retention through the seventh term of enrollment at UC Davis?

2. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student grade point average (GPA) through the seventh term of enrollment at UC Davis, or term of departure?

Population and Sample

There are two populations involved in the study: (a) all of the students attending UC Davis in the period between 2005 and 2008 who were identified by UC Davis as participants in EOP, consisting of approximately 1,337 students, and (b) students attending UC Davis during the same period who were participants in the TRIO SSS program, consisting of 165 students. From these two populations, samples for research purposes were identified. Of the TRIO SSS students, 92 had been involved in TRIO SSS
from their initial matriculation and continued to be involved through their seventh quarter or their departure from UC Davis, whichever occurred first. These students were included in the TRIO SSS sample. From the EOP population, the researcher randomly selected 446 students to serve as a control sample with whom to compare various outcomes reported for the TRIO SSS students. The UC Davis Student Affairs Research and Information office (SARI) provided the researcher with the data, regularly maintained by their office, regarding the EOP population and meeting the above parameters and also removed any personally identifiable information thus securing the anonymity of this population as well. The same was done for the TRIO SSS data, only provided by the TRIO SSS program and also consisted of regularly maintained data.

Participants in TRIO SSS are students who are: (a) low-income, and/or (b) first-generation college students, (c) are undergraduate students who entered as first year freshman, (d) are United States (US) citizens, and (e) are EOP eligible students of UC Davis and have otherwise been identified as having an academic need for additional assistance to be successful in college. Students invited into the TRIO SSS program must accept the invitation in order to participate in the TRIO SSS program. Low-income classification is based on a family’s taxable income, which cannot exceed 150% of the poverty level as determined by the Federal Government. A first-generation college student is defined as an individual neither of whose parents has been awarded a baccalaureate degree. EOP participants must also be first-generation college students and/or low-income. Generally, TRIO SSS participants will have lower scores or have
performed more poorly than the average UC Davis student in one or more of the following pre-college and college areas:

- SAT exam
- Cumulative High School GPA upon matriculation to UC Davis
- UC Davis Math Diagnostic Exam
- UC Davis Chemistry Diagnostic Exam
- UC Davis Analytical Writing Placement Exam

Once attending UC Davis, students may also be identified for TRIO SSS services because of the following college characteristics:

- Amount and/or severity of failing grades
- College GPA and UC Davis SSS program entry
- English as a second language status
- Other critical areas can be identified, sparingly, as needed

TRIO SSS Student participants included in this study must have been members of TRIO SSS since matriculation to UC Davis and their date of matriculation to UC Davis must begin between Fall Quarter 2005 and Fall Quarter 2006. Retention rates and GPA scores of TRIO SSS participants beyond the seventh quarter were not included the study. TRIO SSS participants first-generation status is self-reported by the student and the students low-income status is verified via documentation provided by their Free Application for Federal Student Aid.
Design of the Study

The study is quantitative and relies on descriptive statistics and statistical analysis of the data gathered. The statistical tools used include a two-tailed T test, and a measure of linear correlation. The statistical analysis of the data was used to determine if membership in the UC Davis TRIO SSS program has an impact, positive or negative, on TRIO SSS participant GPA and retention rates through the seventh quarter.

Data Collection

Longitudinal data collected by the UC Davis TRIO SSS program, that was summarized into seventh quarter retention rates and GPA’s was provided to the researcher in the format described above and then used in the study. The exact same data is gathered and collected by SARI for the EOP population and both data sets are available to the public upon request. It is important to note that the TRIO SSS program and SARI collaborated during this collection of data to ensure that any TRIO SSS participants present in the EOP data set were removed so that their would be a guarantee of no overlap of students in the two data sets. Human Subjects requirements for UC Davis and California State University, Sacramento were followed, approved and adhered to for all collection and use of data, for both samples throughout the duration of the study.

Instrumentation

The data was analyzed using the statistical software know as IBM SPSS Statistics version 20.0 Premium Grad Pack. No additional instruments were used for the analysis of the data.
Data Analysis Procedures

The data, comprising two variables, were provided to the researcher, with no personally identifiable information, by the UC Davis TRIO SSS program regarding each TRIO SSS participant in the study and by SARI of UC Davis regarding every EOP, non-TRIO SSS, participant in the study. Both TRIO SSS and SARI coordinated their data collection efforts for the purpose of excluding TRIO SSS participants from the EOP population provided in that data set. The variables analyzed are described below.

Variable One: Length of Retention – From Matriculation Through Seventh Quarter

In order to analyze the TRIO SSS programs impact on student retention/persistence rates, said retention rates were tracked through the seventh quarter as this provided the richest data for analysis. UC Davis operates on a quarter system comprising Fall, Winter, and Spring Quarters in contrast with the semester system used by most other campuses that comprise Fall and Spring Semesters. A single UC Davis quarter is comprised of ten weeks and an additional week for final exams. Retention through the seventh quarter thus represents retention into a student’s third year. This variable is also used to analyze the data of participants who did not make it to the seventh quarter and explores the overall persistence of the participants. A student’s failure to persist through the seventh quarter may be due to any one or a combination of factors including, but not limited to: (a) college withdrawal for personal, medical and/or financial reasons, (b) dismissal or disqualification for academic reasons, or (c) disenrollment, which is an administrative removal of the student from UC Davis.
Variable Two: Grade Point Average

Each participant’s cumulative Grade Point Average (GPA) was recorded at one of two points: (a) the participants enrollment in and completion of their seventh quarter since their initial matriculation to UC Davis, or (b) the participants enrollment in and completion of their last quarter at UC Davis within the first seven quarters since their initial matriculation to UC Davis.

So as to establish whether participation in TRIO SSS impacts participant GPA and retention rates the subsequent section describes the process in which the data will be analyzed. The primary analysis to be completed of the two samples is a two-tailed T test of overall persistence through the seventh quarter, supported by a descriptive statistical analysis simply comparing the mean percentages for overall seventh quarter retention rates. A linear correlation of participant GPA through the seventh quarter, or quarter of departure, of the TRIO SSS sample and EOP sample will explore the relationship between both groups and impact on GPA.

The use of the IBM SPSS Statistics version 20.0 Premium Grad Pack will provide more than the needed statistical results, including the mean, standard deviations, T test values, correlations and so forth. An analysis of the data for the purpose of establishing optimal normalization of the data by removing any possible outliers will also be conducted before the statistical results are compared between sample groups. Once the optimal normalization of the data is achieved the aforementioned statistical tools will be used and the findings analyzed.
Limitations

The broadest limitation of the study is that it is restricted to the UC Davis TRIO SSS program, and TRIO SSS programs by nature tend to be organized, structured, and operated in highly customized forms specific to the campus they are located in. Therefore, while the results of this study would be specific to only this TRIO SSS program on the UC Davis campus, how its impact was assessed can be replicated at, presumably, any other TRIO SSS program across the nation. Another limitation is that impact was assessed very broadly based on membership in TRIO SSS and was not further broken down into subgroups of the sample in order to compare persistence and GPA across ethnicity, gender and other subgroups. Finally, and more specifically, a deeper statistical analysis of the data was not possible based on the collected data for both sample groups and so statistical findings are based solely on the broad variable of membership in the TRIO SSS program versus the EOP sample.
CHAPTER 4
DATA ANALYSIS & FINDINGS

The purpose of this study was to determine if participation in the TRIO Student Support Services (SSS) program of the University of California at Davis (UC Davis) significantly impacts student retention rates and GPA among TRIO SSS participants when compared to, non-TRIO SSS, Educational Opportunity Program (EOP) students at UC Davis who are eligible to be in the TRIO SSS program. To this end the following questions are posed by this study:

1. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student retention through the seventh term of enrollment at UC Davis?
2. Does participation in the UC Davis TRIO Student Support Services program have a significant impact on student grade point average (GPA) through the seventh term of enrollment at UC Davis, or term of departure?

To answer these questions two variables are explored: (a) length of retention, from matriculation through the seventh quarter; and (b) participant GPA at their seventh term enrolled at UC Davis, or term of departure.

Normalization of the Data

An initial frequencies analysis of the data showed several results including means, standard deviations, variance, skewness and kurtosis of the 92 participants in the TRIO SSS sample as well as for the 446 participants in the EOP sample, involved in this study.
Based on analyzing these results an in order to achieve optimal normalization of the data outliers were identified based on data results found beyond two standard deviations. For the TRIO SSS data three outliers were identified, as described above, and thus removed from the data set bringing the TRIO SSS sample to 89. Likewise the same analysis of the EOP data identified eleven outliers, also found beyond two standard deviations, and have been removed from the EOP data set reducing the sample to 435. At this point it is worth observing that simply looking at descriptive statistics the data has shown that for the TRIO SSS sample 87% of the participants are retained to the seventh quarter compared to 78% for the seventh quarter retention rate of the EOP sample.

**T Test and Correlation Analysis**

At this point both the SSS and EOP data sets have achieved optimal normalization, with all participant data falling within two standard deviations of the mean values. The best statistical tool to use with the given data is a two-tailed T Test for independent samples. For the analysis of the variable of which quarter, first through seventh, participants were retained to there was a significant effect on retention, $t(522) = 2.56, p < .05$, with participants in TRIO SSS showing stronger persistence rates ($M = 6.74$) then the EOP sample ($M = 6.34$) as can be seen in Table 1. As seen in Table 2 for the analysis of GPA at the seventh term of enrollment at UC Davis, or the term a participant departed UC Davis, inclusion or non-inclusion in the TRIO SSS program for The average TRIO SSS GPA was a 2.59 ($SD = 0.47$) and the average EOP GPA was a 2.62 ($SD = 0.50$).
Table 1

*T Test: First through Seventh Quarter Persistence*

<table>
<thead>
<tr>
<th></th>
<th>TRiO or EOP</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which Quarter Student Was Retained To</td>
<td>TRiO</td>
<td>89</td>
<td>6.74</td>
<td>.805</td>
<td>.085</td>
</tr>
<tr>
<td></td>
<td>EOP</td>
<td>435</td>
<td>6.34</td>
<td>1.422</td>
<td>.068</td>
</tr>
</tbody>
</table>

Note: TRiO SSS average persistence was 6.74 terms of seven ($SD = 0.81$), and the EOP average persistence was 6.34 terms of seven ($SD = 1.42$).

Table 2

*T Test: Seventh Quarter, or Term of Departure, GPA*

<table>
<thead>
<tr>
<th></th>
<th>TRiO or EOP</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA at 7th Qtr or Qtr of Attrition</td>
<td>TRiO</td>
<td>89</td>
<td>2.5873</td>
<td>.47066</td>
<td>.04989</td>
</tr>
<tr>
<td></td>
<td>EOP</td>
<td>435</td>
<td>2.6202</td>
<td>.49538</td>
<td>.02375</td>
</tr>
</tbody>
</table>

Note: TRiO SSS average GPA was a 2.59 ($SD = 0.47$), and the EOP average GPA was a 2.62 ($SD = 0.50$), and TRiO SSS was not the cause of this difference based on this T test.
EOP students showed no statistically significant effect on GPA, \( t(522) = -0.58, p > .05 \).

Participant GPA, as can be seen in Table 3 below, was also found to bear virtually no correlation to TRIO SSS or EOP status: \( r = 0.025, p = 0.566 > 0.05 \), which reinforces the claim that TRIO SSS was not associated with either a lower or a higher GPA than EOP membership. This result is not surprising since TRIO SSS accepts only participants who have an academic need, as noted in chapter three, to receive its additional services and then provides those services in a very intensive fashion and since all EOP students

<table>
<thead>
<tr>
<th>GPA at 7th Qtr or Qtr of Attrition</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRiO or EOP</td>
<td>.83</td>
<td>.376</td>
<td>524</td>
</tr>
</tbody>
</table>

Note: The Correlation value \( r = 0.025, p = 0.566 \), is very low and there is statistical significance to the results.
have been identified for at least one characteristic which is associated with the risk of lower college performance. The lack of correlation suggests that the TRIO SSS interventions do help TRIO SSS students to maintain an adequate GPA, comparable to their EOP peers, but does not produce a surge in GPA. TRIO SSS participants are more likely to become participants in TRIO SSS because they had stronger chances of having lower college GPA’s to begin with. The fact that their GPAs are not lower than EOP students’ GPAs to any statistically significant degree by their seventh quarter suggests that they are becoming more able to keep up.

Testing the Hypothesis

With the data analyzed and the results recorded it is now time to put the original hypothesis to test beginning with the first posed question.

1. Does participation in the UC Davis TRIO SSS program have a significant impact on student retention through the seventh term of enrollment at UC Davis?

The T test found $t(522) = 2.56$, $p < .05$, with participants in TRIO SSS showing stronger persistence rates ($M = 6.74$) then the EOP sample ($M = 6.34$). According to the T test, participation in the UC Davis TRIO SSS program has a significant impact on student retention through the seventh term of enrollment at UC Davis. Moreover, in observing the bar graphs representing the persistence distributions of TRIO SSS participants found in Figure 1 and comparing those to the distributions of EOP persistence found in Figure 2 the researcher identified what appears to be a critical point of intervention. EOP participants experience a notable spike in attrition at the third quarter, which marks a
participant who does not return for their sophomore year. This spike in attrition is non-existent in the TRIO SSS distribution, providing more evidence of the successful impact TRIO SSS is having on persistence.

Figure 1. TRIO SSS Sample: First through Seventh Quarter Persistence. The figure illustrates TRIO SSS average persistence out of seven quarters ($M = 6.74$, $SD = 0.81$), with no student attrition at the critical third quarter point.
Figure 2. EOP Sample: First through Seventh Quarter Persistence. The figure illustrates EOP average persistence out of seven quarters ($M = 6.34$, $SD = 1.42$), with substantial student attrition at the critical third quarter point.

2. Does participation in the UC Davis TRIO SSS program have a significant impact on student GPA through the seventh term of enrollment at UC Davis, or term of departure?

TRIO SSS has no statistically significant relationship to GPA, $t(522) = -.58$, $p > .05$, with the average TRIO SSS GPA at 2.59 ($SD = 0.47$) and the average EOP GPA at 2.62 ($SD = 0.50$). The correlation analysis, $r = .025$, $p = .566$ ($> .05$), also reinforced this finding. Since TRIO SSS students are originally chosen for participation in the program because of factors associated with lower college performance or actual lower performance, TRIO SSS participants would appear to be resolving any problems with their GPA over time. Thus the absence of a statistically significant negative correlation...
between TRIO SSS status and GPA may itself be evidence of a positive relationship between TRIO SSS and GPA for students who would otherwise have been performing even lower. However, any exploration of the interaction between TRIO SSS participation and GPA will have to await a different study.

The GPA bar graph distributions for TRIO SSS found in Figure 3 and EOP found in Figure 4 demonstrate another critical point of comparison. A higher proportion of TRIO SSS participants (9%) are found to be below the 2.00 GPA mark and therefore in academic difficulty as compared to their EOP peers (7%), which supports the idea that TRIO SSS is in fact serving the population that most needs its services. The numbers are small, and the results not statistically significant. However, these results combined with the fact that TRIO SSS is still helping its participants persist longer than their EOP peers suggests that TRIO SSS is serving the students that need it and that the TRIO SSS services are achieving some success.
Figure 3. TRIO SSS Sample: Seventh Quarter, or Term of Departure, GPA. The figure illustrates TRIO SSS GPA ($M = 2.59$, $SD = 0.47$), and 9% are below a 2.00 GPA.

Figure 4. EOP Sample: Seventh Quarter, or Term of Departure, GPA. The figure illustrates EOP GPA ($M = 2.62$, $SD = 0.50$), and 7% are below a 2.00 GPA.
CHAPTER 5
SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

With all of the talk about accountability and transparency as well as the need for programs to also reach ever-increasing levels of efficacy, it is critical that programs take a moment to assess and evaluate their own services. While federal TRIO programs provide rich data demonstrating their success on a national level the ability to demonstrate that same success at the local campus is just as crucial for the purpose of establishing their own validity, especially on that specific campus, and to solidify themselves as model college retention programs that the institution can draw on for best practices; let alone the ability to champion their own success stories and raising awareness and acceptance in regards to continued support for low-income and first-generation college students.

To this end an extensive review of the literature was conducted for the purpose of exploring the effects of student support service programs and activities on the retention and academic success of low-income and first-generation college students. To begin, a review of the literature concerning the demographics, disadvantages, and strengths inherent to low-income and first-generation college students shed light on the population in question. An analysis of the battles and fundamental challenges these students face once they arrive in college, including institutional and social barriers, and how these challenges impact the students in question provided significant foundational knowledge of the primary influences on positive student outcomes. Followed by a description of
how good intentions have allowed institutions of higher learning to learn lessons
themselves on how to get things done right, balanced by areas institutions need to keep
better pace with the needs of their diverse student populations. And finally, a summary
of the TRIO programs themselves, especially Student Support Services (SSS), as well as
how they fit in to the student retention puzzle concluded the review of the literature.

Conclusions

The purpose of this study was to determine if participation in the TRIO SSS
program of the University of California at Davis (UC Davis) significantly contributed to
student retention rates and grade point averages (GPA) among TRIO SSS participants
when compared to the, non-TRIO SSS, Educational Opportunity Program (EOP) students
at UC Davis who are eligible to be in the TRIO SSS program. To this end the research
questions posed by the study were answered. Participation in the UC Davis TRIO SSS
program does have a significant and positive impact on student retention/persistence rates
through the seventh term of enrollment at UC Davis. Additionally, while the study found
that participation in the UC Davis TRIO SSS program does not have a significant impact
on student GPA that may in fact be due to a limitation of this study or may reflect the
positive impacts of the TRIO SSS program on a segment of the EOP student population
which was chosen for the program because they were at greater risk of encountering
problems in college than the EOP students generally. These unknowns indicate the need
for areas of further research to be discussed in the recommendations section. While the
second research question posed addressed a genuine concern of the TRIO SSS program,
the data gathered by the researcher did not reveal statistically significant differences between the GPAs of the two groups of students. This finding, while arguably evidence of positive college outcomes for the TRIO SSS students, did not result in a statistically significant finding.

The primary charge or goal of the UC Davis TRIO SSS program is the retention and the eventual graduation of its participants. TRIO SSS has already demonstrated to the federal government, via its Annual Performance Reports as well as by being funded for a second cycle, its effectiveness. The study has furthered this success story by also finding that TRIO SSS is also more effective than UC Davis’ own retention efforts, thus solidifying the UC Davis TRIO SSS program as a model retention program and validating the importance of an SSS program on the UC Davis campus.

Recommendations

Refinement of the Current Study

Gathering new data from both the TRIO SSS and EOP populations needed to determine whether or not TRIO SSS is have a positive or negative impact on participant GPA is recommended. While this study still produced strong evidence showing the success of TRIO SSS, determining GPA impacts is a logical next step for the TRIO SSS program.

Potential Applications of the Research Conducted

The research has demonstrated that the services provided by TRIO SSS, much of the strategies and services found in the review of the literature, are effective and should
be continued. Another critical observation was identifying the third quarter spike in attrition within the EOP sample that was non-existent in the TRIO SSS sample. This phenomenon should be explored further in order to identify what TRIO SSS is doing to influence this key point of student retention so that it can be replicated within the EOP population, if possible; as well as refined within TRIO SSS services. The research also suggests that TRIO SSS should further assess its services most directly influencing participant GPA to determine their effectiveness, if they have not yet done so. TRIO SSS should also use the research findings to demonstrate its effectiveness to UC Davis officials and the campus at large as part of the evidence validating it as a model retention program. This demonstration should be paired with a partnership of campus stakeholders to expand TRIO SSS best practices to the campus at large as well.

Areas for Further Research

A deeper breakdown of the data gathered should be collected with the categories of participant sex, ethnicity, socioeconomic background, first-generation college status, as well as geographic region to conduct the same parameters of this study but to this deeper degree. It would also be a good research practice to gather data on incoming TRIO SSS participants which is specifically linked to their eligibility for TRIO SSS services, as opposed to merely typical of EOP eligible students. This would allow longitudinal studies of the college outcomes for TRIO SSS students compared to a control group of non-TRIO SSS students with paired or similar characteristics. This would allow a deeper understanding of which participants are in greatest need of TRIO SSS services. Additional research should also explore further impacts of the TRIO SSS program on
participants’ likelihood to continue into postgraduate study as well as participant success in achieving admission to programs of graduate level study.

Taking into account all of these factors additional TRIO SSS grants should be sought in future grant competitions as well as additional funding from UC Davis, including other funding sources, to further institutionalize TRIO SSS services thus expanding the programs reach and successful college outcomes.
APPENDIX

Permission to Use TRIO SSS Data

UNIVERSITY OF CALIFORNIA, DAVIS

February 1, 2012

To Whom It May Concern:

This letter is to show that on February 17, 2009 the UC Davis TRIO Scholars Program provided Eric Sanchez (the Researcher), for the purpose of his master’s thesis research, with information pertaining to our TRIO Scholars’ retention rates and GPA for the academic years covering 2005-2008. The data was provided to the Researcher with no personally identifiable student information.

If you have any questions or concerns, please do not hesitate to contact me at (530) 752-2021.

Sincerely,

Donelle Davis
Program Director
TRIO Scholars Program (SSS)
REFERENCES

*Liberal Education*, 34-41.


