SAN DIEGO STATE UNIVERSITY

The Undersigned Faculty Committee Approves the
Dissertation of
Dr. Freddy N. Ramirez

Relationship Between Puente Support and Student Success at North County College

[Signature]
Ron Jacobs, Chair
Administration, Rehabilitation, and Postsecondary Education

[Signature]
Chuck DeGennette
Administration, Rehabilitation, and Postsecondary Education

[Signature]
Maria Nieto-Senour
Department of Counseling and School Psychology

May 8, 2012
Approval Date
Copyright © 2012
by
Freddy N. Ramirez
DEDICATIONS

My doctoral study is dedicated to Wendi Ramirez for her love, support and understanding
and our wonderful children and grandchildren Christopher, Mark, Jordan, Daylen, and
Kenley, for inspiring me every day to continue pursuing my dream

And

To my parents Dionicio and Albina Ramirez for their guidance, prayers, and constant
support and for the hard-working values they instilled in me

And

To my brothers and sisters Jesus, Emilio, Jose, Janet, and Alicia Ramirez who I love and
admire for their intelligence, courage, and resilience

And

To my Dissertation Committee, especially my Committee Chair, Dr. Ron Jacobs who
made this study possible through his tireless work, guidance, and mentorship

And

To the Puente students at North County College [NCC] for their inspirational stories of
struggle, pride, motivation, and academic excellence

And

To the SDSU Ed.D. 2009 cohort.
ABSTRACT

The purpose of this study was to identify the association between services offered through the Puente Program at North County College [NCC] and the academic success that student participants experienced. The study examined the academic success outcomes of Puente student cohorts from Academic Years 2002-2003 to 2008-2009. The study identified a comparison group based on demographics and level of academic readiness and examined its academic outcomes for the same time period. A quantitative, causal comparative research methodology was used to compare the academic outcomes of the Puente and comparison groups based on eight indicators of student academic success: GPA, number of units enrolled, number of units completed, retention and persistence rates, transfer readiness and transfer rates, and number of academic awards received. The results from this study indicated that the services received through the Puente Program had a significant impact on seven of the eight measures examined by this study. The results from this study may serve as the basis for expansion of academic support programs aimed at improving the success of under-prepared student groups and Latino students in particular. This study includes recommendations for further study of Puente student academic outcomes as well as the expansion of the Puente Program at NCC.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td>CHAPTER 1 – THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Puente Background in California</td>
<td>2</td>
</tr>
<tr>
<td>Puente Background at North County College</td>
<td>3</td>
</tr>
<tr>
<td>Background to the Problem</td>
<td>7</td>
</tr>
<tr>
<td>The Local Setting</td>
<td>9</td>
</tr>
<tr>
<td>Conceptual Framework</td>
<td>12</td>
</tr>
<tr>
<td>Research Questions</td>
<td>13</td>
</tr>
<tr>
<td>Data Gathering Method</td>
<td>14</td>
</tr>
<tr>
<td>Limitations</td>
<td>14</td>
</tr>
<tr>
<td>Delimitations</td>
<td>15</td>
</tr>
<tr>
<td>Assumptions</td>
<td>16</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>16</td>
</tr>
<tr>
<td>Operational Definitions</td>
<td>17</td>
</tr>
<tr>
<td>CHAPTER 2 – REVIEW OF THE LITERATURE</td>
<td>20</td>
</tr>
<tr>
<td>Introduction</td>
<td>20</td>
</tr>
<tr>
<td>Puente Project History</td>
<td>21</td>
</tr>
<tr>
<td>Current Puente Project</td>
<td>22</td>
</tr>
</tbody>
</table>
Findings Related to the Research Questions of this Study ............................................. 57
Summary .......................................................................................................................... 69
CHAPTER 5 – CONCLUSION ......................................................................................... 71
Introduction .................................................................................................................... 71
Research Findings .......................................................................................................... 72
Significance of Findings ................................................................................................. 73
Significance for Puente at NCC ....................................................................................... 74
Significance for Program Development ........................................................................ 75
Recommendations for Future Research ......................................................................... 77
REFERENCES ............................................................................................................... 81
LIST OF TABLES

Table 1.  Enrollment of Participants by Cohort: Fall 2002-Fall 2009 ............................. 53
Table 2.  Gender Distribution Puente and Comparison Groups: Fall 2002 – Fall 2009 ................................................................................ 54
Table 3.  Number and Percent of Students Receiving Financial Aid by Group ............... 55
Table 4.  Academic Standing by Group: Fall 2002 – Fall 2009 ..................................... 55
Table 5.  Educational Goal Choice by Group: Fall 2002 – Fall 2009 .............................. 56
Table 6.  Group Differences in First Semester GPA ........................................................ 58
Table 7.  Group Differences in Cumulative GPA ............................................................. 58
Table 8.  Group Differences in Number of Units Enrolled ............................................... 59
Table 9.  Group Differences in Number of Units Completed ........................................... 59
Table 10. Percentage of Units Completed by Group ....................................................... 60
Table 11. Retention Rates by Group for the First Semester (First Fall) ......................... 61
Table 12. Retention Rates by Group for the Second Semester (First Spring) ................. 61
Table 13. Retention Rates by Group for the Third Semester (First Summer) ............... 62
Table 14. Retention Rates by Group for the Fourth Semester (Second Fall) ............... 62
Table 15. Retention Rates by Group for the Fifth Semester (Second Spring) ............. 63
Table 16. Retention Rates by Group for the Sixth Semester (Second Summer) ........... 63
Table 17. Average Number of Semesters Retained by Each Group ............................... 64
Table 18. Persistence in Two or More Semesters by Group ............................................ 65
Table 19. Type of Awards and Number of Awards Earned by Group ............................ 67
Table 20. Average Number of Awards Earned by Group .............................................. 68
Table 21. Associate of Arts Degree Earned by Group..................................................... 68
Table 22. Certificates of Achievement Earned by Group .......................................................... 69
Table 23. Certificates of Competence Earned by Group ....................................................... 69
LIST OF FIGURES

PAGE

Figure 1. Credit student population and district population by ethnicity ......................... 9
Figure 2. Student population and full-time faculty by ethnicity ...................................... 10
Figure 3. Student population and associate faculty by ethnicity ...................................... 10
Figure 4. NCC success rate for fall 2010 ......................................................................... 11
CHAPTER 1 – THE PROBLEM

Introduction

Community colleges attract a large number of academically under-prepared students in comparison to four-year universities in the state of California, who need comprehensive support to succeed. This phenomenon is attributed, in part, to the open access and low cost attributes that characterize community colleges (Solorzano, Villalpando, & Oseguera, 2005). In an effort to provide the academic and social support that academically under-prepared students need, community colleges provide basic skills instruction, tutoring, counseling, and mentoring among other services. The mode of delivery varies between two models.

The traditional model makes services available independently of each other and the student is responsible for seeking out the assistance needed. In the more innovative programs such as Puente, the services are bundled together and are provided to cohorts of students who meet certain eligibility requirements. Examples of the latter model include Learning Communities, First-Year Experience Programs, and the Puente Project that is unique to the state of California. While such programs have been in existence in the community college system since the 1980s, not enough research has been conducted regarding the relationship between the services such programs offer and the level of academic success that student participants experience. More specifically, the degree of relationship between the services provided and specific student success outcomes such as retention and academic performance need to be further established.
Purpose of the Study

The purpose of this study was to identify the relationship between services offered through the Puente Program at North County College (henceforth referred to as NCC) and the academic success that student participants experience. The study focused on the processes of intensive counseling, comprehensive writing support, and mentoring and the relationship of these services to student academic success. In terms of student academic success, the study looked at semester Grade Point Average (GPA) at the end of the first semester in the program as well as the overall GPA by the end of the second year of participation. The study examined at the number of units attempted and the number of units completed in the same timeframes. Similarly, the study analyzed retention rates and the number of awards received and compared the student academic achievement of this cohort to a group of demographically matched students (North County College [NCC], 2009).

Puente Background in California

Founded in 1981 in Hayward, California, the Puente Project was developed by Felix Galaviz, a counselor, and Patricia McGrath, an English instructor, who started the program for the purpose of addressing the lack of academic success of Latino students at Chabot Community College (University of California Office of the President Puente Project [UCOPPP], 2011). The program, now open to all students, began as an exclusive program for Latino students that would provide writing support, counseling services, and mentoring opportunities. The program was structured in three phases. Phase I entailed the student’s first semester in the program. In Phase I, the student would enroll in a pre-transfer English course and a personal growth class taught by the Puente English
instructor and the Puente counselor respectively. Phase I also entailed assigning a mentor to each student thereby beginning the student-mentor relationship that would continue into the next phases of the program. In Phase II, the second semester of participation in the program, the student would enroll in the transfer-level English course and would continue to receive writing support, mentoring, and counseling. In Phase III, there was no additional instruction. The student was encouraged to seek out writing assistance, counseling services, and mentoring support up to the time of graduation or transfer (Rendon, 1995, 2002).

**Puente Background at North County College**

The Puente Project began at North County College in 1991. The word “Puente” is Spanish for “Bridge.” It signifies part of the mission of the program that states: “Its mission is to increase the number of educationally disadvantaged students who enroll in four-year colleges and universities, earn college degrees and return to the community as mentors and leaders to future generations” (UCOPPP, 2011, p. 1). The program emphasizes bridging or transferring from the community college to the university, encouraging students to earn baccalaureate degrees.

Every academic year, a new cohort of between 24 and 27 students begins the program (NCC, 2010). The majority of program participants come from a Latino background; however, because the program is open to all students, regardless of racial or ethnic background, a very small percentage of students from non-Latino backgrounds tend to join the program each year. The average number of Latino students participating in the program varies. For the past three years, this average has been 92 percent (NCC, 2009). The Puente program mirrors the original statewide model with three phases and
with writing, counseling, and mentoring support as the central components of the program. The Puente English instructor and the counselor serve in a dual role that includes both teaching and co-coordinating the program.

As part of the instructional component of the program, during the fall semester (Phase I of the program), the Puente counselor teaches a three-unit college success skills course that is transferable to the California State University (CSU) and University of California (UC) systems. Additionally, the counseling course fulfills area “E” of the CSU general education transfer pattern (California Colleges, 2011). The Puente English instructor imparts a pre-transferable basic skills English course to the Puente cohort during the fall semester as part of Phase I. During Phase II, the Puente cohort enrolls in a transferable English composition course taught by the Puente English instructor. The instructional component of the Puente Project mirrors the Learning Community cohort model.

The Learning Community model of teaching entails faculty from different disciplines working together with a community of learners who experience the assigned subjects following a theme that the faculty develop cooperatively (Tinto, 2000). In essence, a student cohort enrolls in a group of courses, each with their own content but with curriculum developed around a central theme (Tinto, 1997, 2000). For at least the past five years, the theme has been the Latino experience in the United States. More specifically, the literature used in the classroom comes mainly from Latino authors who explore significant issues Latinos face in the United States. The central themes have included Latino art, music, film, and social issues currently impacting the Latino
community. Some examples of such issues include immigration and education as it relates to Latinos in the United States.

Further reinforcing the learning community model and as part of the intensive counseling and writing assistance, the counselor and the English instructor visit each other’s class providing writing and counseling support and answering questions for the cohort and modeling the idea of cooperative learning. The English instructor and a writing consultant, facilitated by tutoring services, have had as their main responsibility, the charge of providing the Puente student cohort with the assistance necessary to continue developing their writing skills. The purpose was to help students successfully complete the writing sequence from pre-transfer English (fall semester) to English composition in their second semester.

Intensive counseling support begins for Puente cohorts well before the beginning of their first semester in the program. Once students choose to participate in Puente, they are invited to participate in a Puente Orientation that typically takes place in July. Through this orientation, students receive information about college culture as well as course selection information. As the fall semester begins, students are expected to meet with the Puente Counselor three times during the semester. The first meeting at the onset of Phase I is intended to help students finalize their schedule and process any schedule changes necessary. The second meeting takes place during the middle of the semester in a more informal setting and for the purpose of reviewing progress during the semester. The main purpose of the third and last meeting is to provide Puente students with assistance regarding course selection as they prepare for second semester. A similar
sequence of counseling meetings is planned to occur during the spring semester or Phase II in the program.

As the cohort finishes the first year in Puente (Phases I & II), the counselor and English instructor formally inform the students, as part of the End-of-Year event that the support from Puente will continue into Phase III, which starts at the end of the first year and continues until the time of graduation or transfer. Such support is less formal and consistent, but it is available to students beyond their first year in Puente.

Faculty and staff make up the overwhelming majority of Puente mentors (NCC, 2009). Mentors and students participate in structured activities at least two times per semester; however, additional interaction is encouraged on their own. The mentoring experience begins with a training program for the mentors that typically takes place during the month of September. In October, mentors and students engage in their first activity together during a mentor breakfast where students are introduced to their mentor, contact information is exchanged, and plans for future meetings are developed and put on the calendar. Students and mentors interact during the semester culminating with a group Holiday dinner typically at a mentor’s home. The spring semester begins with opportunities for students and mentors to interact during planned activities and trips such as the visit to Chicano Park during the month of February, the Latino Film Festival during the month of March, and closing the semester with the End-of-Year Ceremony in May. As the year of mentoring ends, students and mentors are encouraged to continue their relationships as students move on to Phase III of the program.

The annual operating budget for the Puente Project is $5,000 (NCC, 2009). The funds are used to pay for program activities designed to enhance the student’s college
experience. Some examples include luncheons with mentors, visits to universities, and exposure to cultural activities on campus and off campus. As determined in the Puente Memorandum of Understanding, the English instructor and the counselor receive 50 percent and 25 percent released time respectively to manage the program and to provide the students with the comprehensive writing and counseling support they need.

**Background to the Problem**

Nearly half of all students pursuing higher education in the United States attend community colleges (American Association of Community Colleges [AACC], 2009). With 112 community colleges in its system, California is the state with the highest number of community colleges serving more community college students, at 2.89 million, than any other state in the nation (California Community College Chancellor’s Office [CCCCO], 2010). California community colleges [CCC] face a significant challenge when it comes to student academic performance. For example, the persistence rate from fall 2007 to fall 2008 for all students attending CCCs was only 68 percent while the course completion rate for basic skills students in 2009-2010 was only 61 percent (CCCCO, 2010).

As a group, Latino students experience higher dropout rates, lower academic performance outcomes, and lower graduation and transfer rates than does the general student population (CCCCO, 2010). In addition, Latino students are more likely to begin their community college experience at the basic skills level (Solorzano et al., 2005). In this study, the term “Latino” student refers to male and female students of Latino background including Mexican, Mexican-American, Chicano(a), Latino(a), Puerto Rican, Cuban, Central American, South American and Other Latino(a). Latinos make up 30
percent of the overall student population in CCCs with a total number of 857,758. Of this number, females represent 54 percent and males represent 46 percent (CCCCO, 2010).

Community colleges, by their very nature, attract a higher number of lower-income, less academically prepared, and more likely to be first generation college students than do their CSU and UC counterparts in California. This phenomenon is attributed to a number of circumstances specific to the community college including an open admission policy, lower cost of attendance, and a wider variety of academic options that include vocational certificates, associate degrees and transfer to four year universities (Solorzano et al., 2005). The result is that a number of barriers emerge almost immediately upon enrollment. The specific barriers include lack of financial resources, lack of academic preparation, and lack of social and cultural capital needed to succeed in the community college (Torres Campos et al., 2009). The lack of financial resources often results in students having to work more hours and having less study time.

In terms of lack of academic preparation, of the total number of students entering the community college and who take the assessment test to determine their readiness in math, 81 percent scored below college level. The percentage of students scoring below college readiness in English was 72 percent. Even though Latino students only comprise 29 percent of the total community college student population in California, they represent 41 percent of all students who score below college level (CCCCO, 2010).

Furthermore, the first generation status of so many students in the CCCs means that these students have to negotiate the intricacies of higher education without the guidance of a parent or role model. In other words, these students lack the social and
cultural capital that is often acquired and transmitted from one generation to the next or within social groups (Mechur-Karp, Gara, & Hughes, 2008).

**The Local Setting**

North County College (2009) was established in 1934 and is located in the Southwest region of the United States on the Pacific Coast and serves nearly 20,000 students. NCC’s mission is to provide “quality instruction and support services that allow students to pursue and achieve their educational goals” (NCC, 2009, p. 1). Figure 1 below provides the ethnic breakdown for the student population and it also shows district population allowing for a comparison between the two by ethnicity (NCC, 2009). NCC’s credit student population represents very well the district’s population in terms of ethnic background. In fact, traditionally under-represented student populations are actually over-represented at NCC when compared to the district’s population.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>NCC Credit Students 2008-2009</th>
<th>NCC District Population October 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>920</td>
<td>9,948</td>
</tr>
<tr>
<td>American Indian</td>
<td>192</td>
<td>1,107</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1,913</td>
<td>22,263</td>
</tr>
<tr>
<td>Latino</td>
<td>4,234</td>
<td>58,535</td>
</tr>
<tr>
<td>White</td>
<td>10,555</td>
<td>204,008</td>
</tr>
<tr>
<td>Unknown</td>
<td>2037</td>
<td>6,694</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19,852</td>
<td>302,545</td>
</tr>
</tbody>
</table>

*Figure 1. Credit student population and district population by ethnicity.*

In terms of faculty and the comparison to the student population by ethnicity, the ethnicity of the part-time and full-time faculty is not representative of the student population, particularly for the Latino group. This is particularly relevant to this study given that Puente attracts such a high percentage of Latino students. Full-time faculty of Latino background represent 17 percent of the full-time faculty body while students from
the same background make up 21 percent of the student body (NCC, 2009). Figure 2 below shows a comparison in percentage of full-time faculty and students by ethnicity.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Full-Time Faculty Percent</th>
<th>Students Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>American Indian</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7%</td>
<td>10%</td>
</tr>
<tr>
<td>Latino</td>
<td>17%</td>
<td>21%</td>
</tr>
<tr>
<td>White</td>
<td>71%</td>
<td>53%</td>
</tr>
<tr>
<td>Unknown</td>
<td>1%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Figure 2.* Student population and full-time faculty by ethnicity.

Figure 3 below shows a comparison between associate faculty and credit students by ethnicity. The under-representation of faculty from diverse backgrounds is more pervasive when comparing the credit student population and the associate faculty, especially for the Latino group where associate faculty comprises only 9 percent, while the Latino student population stands at 21 percent.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Associate Faculty Percent</th>
<th>Students Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>American Indian</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Latino</td>
<td>9%</td>
<td>21%</td>
</tr>
<tr>
<td>White</td>
<td>79%</td>
<td>53%</td>
</tr>
<tr>
<td>Unknown</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Figure 3.* Student population and associate faculty by ethnicity.

The current political and economic climate is prompting a general demand for improvement in student success and completion rates in the community college system. Of particular interest are traditionally under-represented student populations that continue to lag behind the majority group in terms of academic performance (CCCCO, 2010). Community Colleges across the state are considering different strategies to improve their retention and completion rates. One of such strategies relates to helping students feel
more comfortable in the college environment as early as possible. Research indicates that student academic performance improves when students acclimatize successfully to the college environment. When students interact or receive instruction and mentorship from faculty who the students can identify with, the acclimation and socialization process is facilitated (Tinto, 1997, 2000). Furthermore, the theory of validation indicates that when a student’s educational experience, ethnic background, and culture are validated (recognized and seen as an asset), student retention and academic success improves (Rendon, 1993, 2002). Figure 4 below indicates student success rates by ethnicity. As shown, ethnic minorities (with the exception of the Asian/Pacific Islander category) continue to experience lower success rates than the majority group. The success rate in Figure 4 is defined as students earning an A, B, C, or Pass over all other grades, including W, D, F, I and No Pass (CCCCCO, 2010).

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Total Enrollments</th>
<th>Succeeded</th>
<th>Success Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>1509</td>
<td>939</td>
<td>62.23</td>
</tr>
<tr>
<td>American Indian</td>
<td>210</td>
<td>126</td>
<td>60.00</td>
</tr>
<tr>
<td>Asian</td>
<td>2141</td>
<td>1686</td>
<td>78.75</td>
</tr>
<tr>
<td>Filipino</td>
<td>947</td>
<td>612</td>
<td>64.63</td>
</tr>
<tr>
<td>Latino</td>
<td>9583</td>
<td>6143</td>
<td>64.10</td>
</tr>
<tr>
<td>Multi-Ethnic</td>
<td>1678</td>
<td>1119</td>
<td>66.69</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>258</td>
<td>184</td>
<td>71.32</td>
</tr>
<tr>
<td>White Non-Latino</td>
<td>20215</td>
<td>14307</td>
<td>70.77</td>
</tr>
<tr>
<td>Unknown</td>
<td>1619</td>
<td>1134</td>
<td>70.04</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>38160</strong></td>
<td><strong>26250</strong></td>
<td><strong>68.79</strong></td>
</tr>
</tbody>
</table>

*(CCCCCO, 2010)*

*Figure 4*. NCC success rate for fall 2010.

Students are offered the option to pursue a vocational certificate program, an associate’s degree, transfer preparation, as well as lifelong learning opportunities. The Puente Program at NCC, as its mission statement indicates, focuses on preparing students for transfer to a four-year institution. Since the program attracts a large number of Latino
students, issues related to the academic performance for Latino students are of particular interest to this study (Rendon, 1995). The three main components of the program, counseling, writing, and mentoring, and the methods used to execute each of the three components, take into account the student’s cultural background and educational experiences in an attempt to facilitate the process of adapting to the college environment (Rendon, 2002).

**Conceptual Framework**

Laura Rendon’s (1993) validation theory suggests that understanding, accepting, and validating a student’s background is critical to the student’s personal and academic development. Rendon (2002) suggests that validation confirms the student’s presence in college and it further affirms the reasons for being in college, providing a sense of belonging, thereby facilitating the process of connecting to institutional agents and speeding up the socialization-to-college process (Rendon, 1994b). Students who feel validated are more apt to participate in the learning process, ask questions in class, and seek help from teachers, counselors, and mentors when such assistance is needed (Rendon, 1994b, 2002). In essence, validation is the foundation on which the three main components of the Puente Project stand on. The type, amount, and frequency of counseling support that students receive, convey the message that student success is important to NCC, confirming to students that their choice to pursue a college education is the correct choice. The writing support offered to students and the use of Latino-based literature with an emphasis on issues relevant to Latinos in the United States aims to confirm and acknowledge the students’ background and personal experiences facilitating buy-in on the pedagogical methods used by the English instructor (Rendon & Valadez,
Furthermore, mentoring support offered to students aims to solidify the students’ sense of belonging in college through the sharing of stories by mentors about their own experience and their progression from college to their professional lives.

**Research Questions**

To what extent is participation in the Puente Program and receipt of its three core services, counseling, writing, and mentoring, associated with grades earned, units completed, retention, persistence, transfer readiness and transfer? The following list of research questions suggests a means of assessing the effectiveness of the cluster of services offered through the Puente Program. Given a group of non-Puente students who are matched on their level of academic readiness, age, gender, ethnicity, and socioeconomic status, what differences, if any, are there in the following areas?

Research Question One: Is there a difference between the Puente group and the comparison group in terms of GPAs earned?

Research Question Two: Is there a difference between the Puente group and the comparison group in terms of number of units enrolled?

Research Question Three: Is there a difference between the Puente group and the comparison group in terms of number of units completed?

Research Question Four: Is there a difference between the Puente group and the comparison group in terms of retention rates?

Research Question Five: Is there a difference between the Puente group and the comparison group in terms of persistence rates?

Research Question Six: Is there a difference between the Puente group and the comparison group in terms of transfer readiness rates?
Research Question Seven: Is there a difference between the Puente group and the comparison group in terms of transfer rates?

Research Question Eight: Is there a difference between the Puente group and the comparison group in terms of number of awards received (certificates of proficiency, certificates of achievement, and Associate of Arts degrees)?

**Data Gathering Method**

The Office of Institutional Research and Planning will provide academic student outcome data for Puente cohorts from 2002 to 2009 (NCC, 2009). Data on student GPAs, units completed, course completion rates, transfer rates and retention rates semester to semester and year to year will be collected from institutional databases. A group of similar demographic characteristics to the Puente cohort will be identified and the same data will be collected for the purpose of making comparisons between the Puente cohorts and the similar group.

**Limitations**

A study’s flaws and potential weaknesses are considered limitations of such study (Creswell, 2009). The following limitations have been identified for this study:

- The study was based on a single community college located in the coastal area of Southern California representing a confined geographical area. Findings of this study therefore cannot be assumed to generalize to the broad array of community college campuses.

- The Puente Project is unique to the state of California and while the study focused on a community college the results may not be applicable to community colleges outside California.
• The number of Puente professional staff and service providers is small and may therefore not be representative of the mode of service delivery in Puente Projects across the state of California. Additionally, the skill and commitment by staff may not be replicated in other settings.

• The study focused on 1\textsuperscript{st} semester, 1\textsuperscript{st} year, and 2\textsuperscript{nd} year academic student outcomes which represent a relatively small time frame; therefore, the long-term effects of the program were not looked at in the study.

• The researcher in this study served as counselor for the Puente Project for the years 2005 to 2010 and this period is part of this study. Although the decision to pursue the Puente Project as the topic for this dissertation study did not take place until after the year 2009, which was the last year included in this study, this represents a potential researcher bias. However, such bias is likely controlled by the causal-comparative research design of this study that looks at outcomes in which the researcher had no active role.

**Delimitations**

• The study focuses specifically on only these performance related student learning outcomes; units enrolled, units completed, GPA, retention, persistence, transfer readiness rates, transfer rates and awards received. It does not attempt to assess attitudinal measures related to student participants in the Puente Project.

• When looking at academic performance measures related to basic skills, the study focuses on the subject of English and not on mathematics. Developing writing skills early in a student’s college career plays an important role in the
success students experience subsequently and writing instruction is one of the main components of the Puente Project.

- The study focuses on Latino students. The overwhelming majority of Puente student participants come from a Latino background. The community college system in the state of California attracts a large number of Latino students. Latino students enter the community college at the basic skills level and become eligible to participate in the Puente Project at higher rates than the general student population.

Assumptions

- It is assumed that participation in the Puente Project has a causal association with or impact on academic student learning outcomes.
- While the study focuses on a unique setting, population, and conditions it is assumed that there is some potential to generalize the findings to a broader range of community colleges as well as other student support programs focusing on supporting academically disadvantaged students.

Significance of the Study

Given the difficult economic conditions that the federal, state, and local governments currently face, institutions of higher learning cannot afford to ignore the issue of low student academic performance, especially when looking at underrepresented and minority college populations such as basic skills Latino(a) students. First Year Experience, Learning Community, and Puente programs have emerged as possible solutions due to their comprehensive approach at providing students with academic,
counseling, and mentoring support facilitating the socialization process and enhancing the student’s likelihood to succeed.

Some evidence does exist in the current literature that suggests programs such as Puente do work in improving the academic performance of student participants. However, additional research is necessary to determine what aspects of the program are associated with student success and to what extent. The findings of this project can be relevant to other student support programs in the community college resulting in more effective use of resources as well as an increase in student academic success. The Latino population in the state of California continues to grow at a faster rate than other ethnic groups in the state. Because Puente serves such a large Latino student population, the findings of this project could have implications for workforce readiness as well as economic opportunity for a significant segment of California’s population.

**Operational Definitions**

*Semester-to-semester retention* – For purposes of this study, the term *semester-to-semester retention* refers to students who enrolled in a particular semester and completed such semester and subsequently enrolled and attended the semester immediately following.

*Year-to-year retention* – For purposes of this study, the term *year-to-year retention* refers to students who enrolled in a particular fall semester and completed such semester and subsequently enrolled in the following spring semester and continued on to the following fall. In other words, the student had continuous enrollment for three semesters not including summer session.
Intensive writing support – For purposes of this study, the term intensive writing support refers to support offered by the Puente English instructor and learning community English tutor inside and outside of class and as part of individual conferences. In addition to classroom instruction, Puente students receive additional support from the Puente English instructor during individual conferences that are made possible due to the reassigned time that the English instructor receives. The learning community English tutor assigned to the Puente class meets individually with students during class and writing lab and also in the Library. The tutor receives specialized training from the Puente English instructor in order to more effectively meet the needs of the Puente students.

Comprehensive counseling support – For purposes of this study, the term comprehensive counseling support refers to individual and small group counseling provided by the Puente counselor in a formal setting such as the counseling office or the personal development classroom that is part of the Puente instructional component. The term also refers to informal and/or directive counseling taking place in less formal settings such as during the Puente English class, Puente events, or fieldtrips. Comprehensive counseling support is possible due to the reassigned time that the Puente counselor receives. In essence, more counseling hours are available to Puente students as well as more counseling delivery methods. While students from the general population often have to wait for weeks to meet with a counselor and are only given 30 minutes with a counselor, Puente students can meet with the Puente counselor on the same day, by appointment, during Puente assigned time, in the Puente counseling class, in the Puente English class, and during Puente activities.
Mentoring – For purposes of this study, the term *mentoring* refers to interactions taking place individually or as part of mentoring activities offered by the Puente Project. The term also refers to interactions taking place both in a formal setting such as an on-campus event or classroom, as well as during mentoring activities off campus such as events and fieldtrips. The mentoring component of the Puente Project has prescribed meeting opportunities between Puente students and their mentor such as the mentor/student breakfast, the holiday celebration, and the end-of-year ceremony. Additionally, Puente coordinators facilitate and encourage informal meetings between mentors and student throughout the year. Examples of informal activities include lunches, theater performances, musical performances, and lectures.

*Latino(a) student* – For purposes of this study, the term *Latino(a) student* refers to male and female students of Latino background including Hispanic, Mexican, Mexican American, Chicano(a), Latino(a), Puerto Rican, Cuban, Central American, South American and Other Latino(a). The term Latino(a) and Hispanic are used interchangeable throughout this study. For consistency purposes, the term Latino is used whenever possible as it seems to be more contemporary and more often used in the literature. Documents such as applications, questionnaires, data tables and other documents using the term “Hispanic” were changed to the term “Latino” for consistency purposes.

*Latino(a) literature* – For purposes of this study, the term *Latino(a) literature* refers to literature written by authors who come from a Hispanic/Latino(a) background.
CHAPTER 2 – REVIEW OF THE LITERATURE

Introduction

The purpose of this research project was to study the relationship between the three main components of the Puente Project: writing support, counseling, and mentoring, on student participant academic performance and comparing such outcomes to a demographically matched group at North County College (NCC, 2009). While the Puente Project is highly regarded, and while anecdotal evidence indicates that the program is successful, no comprehensive studies had been conducted to determine the relationship between the services Puente provides and its participants’ retention and academic performance as defined by GPA, number of units completed, retention, persistence, transfer readiness, and transfer rates (NCC, 2010). As the federal, state, and local governments struggle financially and community colleges experience continuous budget declines, assessing the impact of state-wide programs such as Puente seemed pertinent if not necessary. For the purpose of this research project, the focus was the Puente Project at NCC and its impact on student cohorts from years 2002 to 2009. The study also compared the academic achievement of such group to a demographically matched group. The seven-year span selected for this study represents an effort to identify academic performance differences between the two groups as well as Puente Project impact on student cohorts over a time span including several cohort years. The Office of Institutional Research and Planning (NCC, 2009) provided student outcome data for both the Puente group and the comparable group.
Puente Project History

The Puente Project was funded in 1981 at Chabot Community College in Hayward, California as a program designed to address the needs of Latino students enrolled at Chabot Community College. The Puente Project began as a cooperative effort between Felix Galaviz, a counselor, and Patricia McGrath, an English instructor, both of whom wanted to address the issue of low academic performance rates of Latino students at Chabot Community College. After reviewing over two thousand student transcripts, Galaviz and McGrath discovered that Latino students were not seeking counseling services and were not enrolling in transferable writing courses. Additionally, Galaviz and McGrath determined through the review of demographic records that a large number of Latino students were considered first generation college students (UCOPPP, 2011). Therefore, Galaviz and McGrath determined that the Puente Program would work based on a model that focused on providing Latino students with intensive writing support, counseling, and mentoring over three distinctive phases in the program.

Phase I in Puente included a student’s first semester in the program where the student would enroll in a pre-transfer English course taught by the Puente English instructor who would provide intensive writing support. Phase I also entailed enrolling in a Personal Growth class taught by the Puente counselor who was also responsible for providing comprehensive and sustainable counseling services to all program participants. Additionally, in Phase I, students would be matched with a mentor who preferably shared the same educational and career interests as the Puente students (Rendon, 2002).

Phase II included the student’s second semester in the program where they would enroll in the transfer-level English course and continued to receive writing support from
the English instructor. While there was no Personal Growth class in Phase II, the counselor would continue to be heavily involved by participating in the English course and providing counseling services for students as needed. Such counseling services included formal meetings in the counselor’s office as well as informal meetings before, during, or after the English course. Phase II also entailed significant interactions between students and mentors through structure mentor-student activities throughout the semester.

Phase III would include the student’s remaining time at the institution up to the time of transfer or graduation. While there would be less interaction between the students and the counselor, English instructor, and the mentors, students would continue to receive writing assistance, counseling services, and mentoring support.

**Current Puente Project**

The current Puente Project Mission Statement reads: “The mission of the Puente Project is to increase the number of educationally disadvantaged students who enroll in four-year colleges and universities, earn college degrees and return to the community as mentors and leaders to future generations” (UCOPPP, 2011, p. 1). The Puente Project is currently present at 59 community colleges and thirty-three high schools across the state of California, serving approximately 14,000 students. The program continues to maintain its interdisciplinary approach with writing, mentoring, and counseling as the three main components. Puente also continues to work in a cohort model for the first two semesters of the program which entails Phases I and II. In essence, students are required to enroll as a cohort in both the pre-transfer English course and the Personal Growth course. Phase III provides students the flexibility to enroll in any course they wish as they continue into their second year in college and as they make progress toward transfer to a
four year institution. While the Puente Project began as a program that exclusively served Latino students in the 1980s, it is now open to all students who are eligible to take the pre-transfer English course. In other words, in order to qualify to participate in the program, students have to score into a basic skills English course through the assessment and matriculation process or by taking a lower level prerequisite course. Puente is therefore a program that focuses on providing basic skills students with the support and writing instruction they need to progress from a basic skills English course, to a college-level transferable course that is considered a minimum transfer requirement by public universities in the state of California.

**Puente Project at NCC**

Puente has been in existence at NCC for twenty years and has adopted the original model that includes counseling, writing, and mentoring as the three main program components. Even though the program is open to all students that qualify based on their eligibility to take the pre-transfer English course, most of its student participants have come from a Latino background. According to course records however, there have been typically one to two student participants out of about twenty five that have come from a non-Latino background in each new cohort for the past decade (NCC, 2009).

In addition to teaching the Puente English and Personal Growth classes in a cohort model, the Puente English instructor and the Puente counselor also serve as program co-coordinators. The English instructor typically serves for a period of three years and then rotates, and a new instructor begins the typical three-year rotation. The reason for the rotation is two-fold. First, several English instructors are interested in teaching the Puente English courses and the rotation represents an opportunity for a new
faculty member to teach the Puente English courses. Second, the Puente method of teaching is recognized as an effective method that includes extensive pedagogical training as well as cooperative teaching with a counseling faculty colleague. Such cooperation is highly valued at NCC. The Puente counselor serves indefinitely and this strategy helps provide continuity in program coordination; however, plans are underway to experiment with a three-year rotation for both the English instructor and the counselor. The new strategy is scheduled to take place beginning with the 2011-2012 Puente cohort. In essence, the entire Puente team would rotate every three years.

At North County College (2009), Faculty and staff make up the overwhelming majority of Puente mentors. The search for Puente mentors is continuous and it is an effort shared by the counselor, English instructor, and by current mentors. Over the past five years, only three out of twenty-five mentors, on average, have come from the professional community outside NCC. Puente mentors attend an orientation that also serves as training in the beginning of each academic year. The training for mentors sometimes is provided by trainers from the Puente statewide office; however, most of the trainings have been carried out by the Puente counselor and English instructor at NCC. Mentors are matched with students primarily on the basis of common major or career interests. Because it is difficult to find enough mentors to match student major and career interests, a secondary matching method is based on personal interests or personality type. Students and mentors meet, for the first time, during the student-mentor breakfast typically in the middle of the first semester in the program (fall). A number of student-mentor activities follow subsequently some of which are considered formal while others are less formal or less structured. Mentors and students participate in structured activities
at least two times per semester during Phase I and II of the program. Mentors and students are encouraged to have additional interaction on their own throughout the year for the purpose of strengthening the relationship.

Puente Project operates on a $5,000 annual budget intended to finance academic enhancement activities such as orientations, luncheons, university visits, and attendance at multicultural events (NCC, 2009). The major institutional commitment to the program comes in the form of re-assigned time for the English instructor and for the counselor. The English instructor’s release time constitutes the equivalent to one fourth of a full time teaching load or the equivalent to one class. The counselor receives re-assigned time equivalent to fifty percent of total number of direct student contact hours that amounts on average to twelve and a half hours per week. The Counselor’s reassigned time is mainly intended to address program coordination, current student cohort counseling needs as well as past student cohort counseling needs.

Writing instruction in the Puente Project mirrors the learning community cohort model (Rendon, 2002). The learning community model of teaching entails faculty from different disciplines working together with a community of learners who experience the assigned subjects under a theme that the faculty develop cooperatively. In essence, a student cohort enrolls in a group of courses each with their own content but with curriculum developed around a central theme (Tinto, Goodsell-Love, & Russo, 1993). For at least the past five years, the theme has been the Latino experience in the United States. More specifically, the literature used in the classroom comes mainly from Latino authors who explore significant issues Latinos face in the United States. The central themes have included Latino art, music, film, and current social issues impacting the
Latino community. Some examples of such issues include politics, the economy, immigration, and education.

Puente also shares many similarities with First Year Experience programs. First year experience programs focus on providing intensive support for students during their first year of attendance in college (Fike & Fike, 2008; Hunter, 2006). Such support entails cohort based instruction with curriculum developed around a central theme similar to the Puente model. (Hunter, 2006) Much like Puente, FYE faculty work together to develop the curriculum and provide a theme based learning experience supplemented by intensive counseling, tutoring, supplemental instruction, and extracurricular activities such as cultural events and university visits among others (Hunter, 2006).

California Community College and Student Performance

The concern about lack of access to higher education has now become a secondary concern. The primary concern for educators and for state and national governments is now academic achievement, retention and graduation rates due to the recent emphasis on accountability. The attrition rate in higher education in the United States from year to year is 41 percent while the success rate to degree for those declaring earning a degree as their objective is only 31 percent (Fike & Fike, 2008). Nationwide, the community college system serves over eleven million students representing nearly half of all undergraduate students in higher education in the United States (AACC, 2009). In California, the number of community colleges recently grew to 112 with the addition of Moreno Valley Community College and Norco Community College in Riverside County. The California Community College system serves 2.89 million students (CCCCCO, 2010). California Community Colleges, like the rest of the nation, are dealing
with a dropout rate that is significantly higher than the dropout rate of the two other state systems of higher learning: the California State University and the University of California (Cohen & Brawer, 2008). In terms of persistence rates for example, the persistence rate for CCCs from fall 2007 to fall 2008 was only 68 percent. The student course completion rate for basic skills courses for 2008-2009 was only 61 percent.

Unlike the two other systems of higher learning in the state of California, CCCs are open admission institutions with no student selection criteria. The CCCs prepare students for transfer to four-year institutions by providing them with basic skills instruction, general education courses and major lower division course preparation. Since the year 2003, the number of Baccalaureate students attending the California State University system (CSU) and the University of California (UC) who first attended the CCCs has been increasing. In 2003-2004, the number was below 50,000. In 2008-2009, the number is higher than 52,000 (Accountability Report for the Community Colleges [ARCC], 2010). In addition to providing transfer education, CCCs also award students Associate Degrees upon completion of state mandated and institutional graduation requirements. In 2008-2009, CCCs awarded a total of 25,422 AA/AS degrees (ARCC, 2010). Furthermore, CCCs provide workforce readiness programs for students preparing for employment or retraining for new employment opportunities. In 2008-2009, CCCs awarded 39,195 Vocational Certificates including both certificates requiring more than 18 units and also those requiring less than 18 units (ARCC, 2010). Finally, CCCs, as part of their mission, offer lifelong learning opportunities for the community in what is known as community education.
Latino Students and Academic Performance

The enrollment of Latino students in higher education has continued to increase over the past twenty years partly because the college-age group has been increasing. However, the overwhelming majority of this increase, over the past twenty years, has taken place in the community college system nationwide where the enrollment has tripled (Solorzano et al., 2005).

For the purpose of this study, the term “Latino student” refers to male and female students of Latino background. This includes Chicano(a), Latino(a), Puerto Rican, Cuban, Central American, South American and Other Latino(a). Latino students, as an underrepresented group in community college, experience higher drop-out rates than the general student population. According to the U.S. Bureau of the Census, 2000, nationwide, Chicanos(as) comprised 64 percent of the total Latino(a) population. Puerto Ricans (11%), Cubans (5 %), Central and South Americans (14%), and other Latinos(as) (7%). Yet, the 2000 Census showed that only 46 percent of Chicanos(as) had attended 4-years of high school compared to 84 percent of non-Latino Whites. Furthermore, the same Census data showed that only 8 percent of Chicanos(as) had attained a 4-year college degree compared to 26 percent for Whites (Solorzano et al., 2005). In California, Latino students make up nearly 30 percent of the overall student population with 857,758 Latino students enrolled. Of the total number of Latino students approximately 470,000 are female and 385,000 are male (CCCCO, 2010).

Academic Success Barriers

Lack of financial resources stands as one of the main barriers to student academic success as students attending the CCCs often come from low-income backgrounds. The
majority of students enrolled in CCCs have to work either part time or full time in order to support themselves and or their families. This is particularly true for Latino students who come from families with lower incomes than middle class students (Torres Campos et al., 2009). For these students, working while attending college is sometimes interpreted as students lacking family support, or lacking interest in education. This interpretation neglects cultural considerations such as community and family obligations (Torres Campos et al., 2009). Other research exploring the reasons for student attrition supports the idea that economic issues impact student attrition. A review of literature available pertaining to the reasons why students drop out of college, concluded that one of the reasons was the need to work more hours which translated into having less time to study (Arnold, 2000). While Arnold relied heavily on anecdotal evidence and her own personal experience, the reality for many community college students, under-represented students in particular, is that they often find themselves having to make the difficult choice of spending more time either studying or working but not both.

Lack of academic preparation represents another barrier to student academic achievement. As an open door institution of higher learning with no selective criteria for admission, the CCCs admit anyone regardless of their academic readiness and regardless of their educational objective. Students interested in pursuing a two-year degree or preparing for transfer to a four-year university are assessed to determine their readiness to take college level course work in the areas of math and English. Of the total number of students assessed in 2009, only 19 percent demonstrated readiness to take college-level math courses (NCC, 2010). In other words, 81 percent were determined to be basic skills students with regard to their math skills. In terms of English readiness, only 28 percent
of students scored into transfer level English which represents a 72 percent basic skills rate. While Latino students only represent 29 percent of the overall community college populations, they represent 41 percent of the basic skills population (CCCO, 2010).

A third barrier to student success in the community college is the lack of social capital. CCCs attract a higher percentage of first generation college students in comparison to the CSU and UC systems. This is attributed to the same reasons CCCs attract more ethnic minorities and low income students: proximity, open access, and affordability (Mechur-Karp et al., 2008). The first generation and low income status of many underrepresented students attending CCCs suggests that these students do not come equipped with the social capital to support their success in college. Social capital refers to the social connections and the ability to connect with agents who possess knowledge or power within a particular environment. Social and cultural capital is also acquired and transmitted within social groups. Such capital includes knowledge, understanding of a structure, and access to information usually through social connections (Mechur-Karp et al., 2008). Social capital therefore enables students to connect with faculty, counselors, staff, and services within an institution such as the community college. The ability to make such connections directly impacts the likelihood that a student will succeed in school and the sense of belonging a student might experience as a result. Given that Latino students make up nearly 30 percent of all students enrolled in CCCs and given that they make up a disproportionately higher number of basic skills students, a greater percentage Latino students lack the social capital to negotiate the college environment (Mechur-Karp et al., 2008).
Validation

Laura Rendon (2002) explored validation as a vital component of student success especially among nontraditional students given that they often arrive at the community college lacking not only academic skills but also social capital. Rendon (1993, 1994a) defined validation as an enabling, confirming, and supportive process initiated by in-and-out agents that fosters academic and interpersonal development. In essence, the validation process facilitates the student’s development of a sense of belonging by reflecting understanding and acceptance of a student and their background. It also affirms the student’s presence and the reasons for being in college by helping them connect to institutional agents and by speeding up the social capital acquisition process. The six components of validation include: contact initiated by institutional agents; increased self esteem through validation; validation as a prerequisite to student development; validation taking place both in and out of the classroom as a result of interaction with multiple agents; validation as a developmental process; and finally, validation as vital at the onset of a student’s college experience (Rendon, 2002).

Laura Rendon’s (1993) validation theory has been explored and applied in the community college setting. A particular study focused on validation and its elements in the Community College Puente Project (Rendon, 2002). Her qualitative study employed the interview and observation methods. Rendon interviewed Puente state officials, trainers, instructors, counselors, and students. Furthermore, she observed Puente classes and reviewed 22 student narratives from a community college. All interactions were recorded and analyzed for themes. Rendon (2002) asserted that Puente’s success was greatly attributed to validating many aspects in the lives of the students it serves. The
author provided data supporting Puente’s success, stating that about 48 percent of program completers successfully transfer to the university. This rate was higher than the average transfer rate for college students. Signaling great satisfaction by student participants, other statistics provided indicated that 95 percent of project participants “would recommend the program to others” (Rendon, 2002, p. 643). Rendon further argued that validation was present in the English classroom where students received affirmation of their ability to succeed. Furthermore, students experienced validation in their level of capability to succeed, the value of their personal voice, their need for assistance, seen as a strength and not a weakness, and the opportunity to validate each other. English instructors, counselors, and mentors were perceived as significant validating agents (Rendon, 2002).

**Socialization to College Environment**

Socializing students to the college environment has been a challenge at all levels of higher learning. This is particularly difficult for community college students where most students tend to commute, work part time or full time, come from lower income families, and tend to come academically under-prepared and tend to come from underrepresented minorities (Fike & Fike, 2008). Learning Communities or LCs emerged as a result of the need to improve the retention and success of college students and in an effort to deal with the accountability movement in higher education. The impact of LCs on student success have been investigated since the late 1980’s (Tinto et al., 1993).

In one of his studies, Vincent Tinto (1997) looked at three LCs at different higher learning institutions including the University of Washington, Seattle Central Community
College, and LaGuardia Community College. Tinto’s purpose was twofold: First, do LCs make a difference? And, how do LCs make a difference? The study was both qualitative and quantitative. The quantitative study included a representative sample of the LC group and a control group with similar characteristics but not part of the LC. The data compared included units earned and quarter-to-quarter GPA. Tinto (1997) employed an entry questionnaire based on Pace’s Quality of Student Effort Scales as well as a follow-up questionnaire. The qualitative portion of the study included interviews with students, formal observations during class and activities, and informal or casual observations. The research findings indicated the first year experience learning communities contributed to peer-group support lasting beyond the first year.

In addition, the findings indicated that academic and social interdependence increased and a higher sense of responsibility toward college work was reached. The study also found active student engagement in the learning process through intentionally designed curricular activities. Lastly, the study identified lasting change in behaviors that impacted learning outcomes beyond the first year learning community with students persisting the following spring and fall quarters at a significantly higher rate than their peers taking traditional courses (83.8 percent versus 80.9 percent in spring and 66.7 percent versus 52 percent in fall) (Tinto, 1997, 2000). Some of the implications in the study suggested that LCs are an effective way to help first year students integrate into both the academic and the social environment of college. Additionally, Tinto (1997) argued that LCs were an effective way to address remediation; however, he also described the need for faculty training to develop student centered cooperative pedagogy across disciplines.
Tinto’s (1997) study suggests that the student socialization process to the college culture works best when implemented in comprehensive manner with all levels of institutional involvement including faculty, staff, and administration. With this understanding, educational institutions are making concerted efforts to create programs that encourage student involvement that facilitates the connectivity between student and institution creating a feeling of community (Hunter, 2006). Some of the efforts to speed-up the socialization of students to the college culture, especially during their first year in college consisted of numerous activities. As part of the first year experience, staff assisted in recruitment of new students, admission efforts, new student orientation programs, and welcome week activities. Students were encouraged to enroll in first-year summer or common reading programs, and seminars. To ensure their path to success, they made appointments for academic advising, supplemental instruction and other academic support. Lastly, they became involved in undergraduate research initiatives; leaning communities; service learning; and residence education initiatives.

Educational institutions have begun enlisting the support of the community to address more effectively the lack of academic success and degree completion in higher learning especially in the community college. In recent years informal mentoring has emerged as another source of support in the student socialization process to the college culture, and furthermore, to gain awareness about the connection between academic success and career opportunities upon degree completion.

A recent study looked at informal mentoring and its impact on the academic life of under-prepared students at a community college (Ramirez, 2009). The study aimed to address the issues that under-prepared students face upon entering and while attending
the community college with respect to their need for informal mentors. The mixed methods study employed the phenomenological framework. Two-hundred students from a Southern California Community College participated in the study and completed surveys. The group of 200 was comprised of students who were ready to graduate or transfer but who started their college career taking remedial courses. From the group of 200, 50 students representative of the group were selected for semi-structured interviews conducted by trained interviewers. Additionally, a written narrative was collected from each student after the interview.

Inductive content analysis was also used as part of the quantitative analysis. The study results revealed that 51 percent of participants identified a college faculty member as their mentor followed by 21 percent of participants who identified a family member as their mentor (Ramirez, 2009). Data analysis was also conducted and seven themes were identified to include intensive transformative mentoring, nurturing of internal locus of control, impact attitude toward learning, emergence of self-identity, shift in academic expectations and academic confidence, increase in self-efficacy, and construct a vision of the future and positive future self.

Two limitations in this study included the focus on only one community college and the focus on under-prepared students. Aside from the limitations, the study indicated that mentoring programs do impact student success through their contribution to a student’s socialization to the college culture process, especially when the students are the first in their families to attend college, lack academic preparation, and do not experience a sense of belonging in the college environment.
Mentoring can take many forms from career and job related, to informal mentoring from family or significant adults, to formal mentoring from college faculty and staff. All aforementioned forms of mentoring share the common goal of supporting the success of students in college. Faculty, as subject matter experts are becoming more involved as formal mentors in guiding students toward success thereby contributing to student retention. Research indicates that faculty-student interaction impacts student academic success (Bharath, 2009). Some studies suggest a direct correlation between direct faculty-student interaction and persistence. Bharath (2009) studied whether or not faculty mentoring programs designed to increase student-faculty interaction had any impact on retention for under-prepared students in the community college. More specifically, the study aimed to investigate to what extent faculty interactions with students predict persistence and also what is the impact of the different types of interactions. The study included 1,719 students from a community college in South Florida who upon taking the assessment test, showed needs for remediation in reading, writing and math. The instrument used for the study was a coaching data-sheet specifically developed to quantify faculty-student interactions. Eight domains were considered for the study and they included education planning, academic concerns, career counseling, time management, personal family childcare concerns, health concerns, and other.

Using Tinto’s (1997) model of student departure as the framework, this quantitative study determined that the frequency and content of the contacts between faculty and students was a predictor of student persistence. The domains with the highest impact on student persistence were education planning and personal family concerns.
The time management and academic concerns domains were not as significant. The study did exhibit some limitations including the inability to control for the quality of faculty-student interactions. Additionally, the 2-year college where the study took place was considered a minority-serving institution, so generalizing to all community colleges would be inappropriate. However, given that CCCs attract and enroll ethnic minorities and academically under-prepared students, the study seems to apply not only to the CCCs in general but to the Puente Project in particular where the mentoring component is considered formal rather than informal.

**Puente Project and Student Socialization to the College Culture**

Limited literature exists regarding the impact of the Puente Project as an integrated program on the population it serves. Extensive literature does exist on each of the three components: writing, counseling, and mentoring as separate components. One study focusing on the programs overall effectiveness on student success aimed to identify the long-term outcomes of the Puente Project.

As an academic preparation program focused on supporting the success of underrepresented students, identifying the impact of Puente on student success, and the long term outcomes in particular, was important. Moreno’s (2002) study was based on 31 matched paired interviews of Puente and non-Puente students that started in the Puente High School program and continued on to college. The 31 matched pairs were identified from a prior study conducted by Gandara (2002) where 75 matched pairs were used. The matched control group was determined appropriate for the study as it had identified 75 Puente students and 75 non-Puente students with identical academic and personal backgrounds.
Moreno (2002) discussed the results of his study that focused on whether or not Puente students had a higher level of college participation, persistence, and preparedness in comparison to non-Puente students. Among other findings, Moreno’s (2002) study indicated that Puente made the greatest difference in students’ overall college persistence with 75 percent of Puente students from high school attending college compared to 65 percent of non-Puente students. The author emphasized the impact institutional agents had on student academic expectations as well as cultural capital which he described as academic, structural, and personal knowledge (Moreno, 2002).

Moreno (2002) added that Puente was especially effective at both validating and improving the cultural capital because of its three components, writing, counseling, and mentoring that combine the efforts of the writing instruction, the student services counselor, and the mentor (Moreno, 2002). The counselor was identified by the study as a significant institutional agent. Some of the implications offered by the study include the need to develop closer relationships between university, community college, and high school outreach programs. Additionally, teaching college survival skills to students was vital so that they would know what to do when they found themselves in need of help. The study had significant limitations in that the sample used was very small. However, the differences in persistence rates when comparing the Puente cohort and the non-Puente cohort suggest that there is a relationship between participating in the program and higher success outcomes for student participants.

Additional evidence exists to suggest that collaborative and intentional efforts between a counselor and a discipline-specific instructor positively impact the academic outcomes of students particularly when the intervention takes place early in the student’s
college experience. One particular study (Coll & Stewart, 2002) that explored the impact of collaborative early intervention on student’s academic and social integration into the college environment further described the relationship between faculty intervention and the socialization process. While the study was not directly related to the Puente Project, the variables studied shared many similarities with Puente in the sense that they included the interactions between students and a counselor and English instructor team.

The study addressed this issue and attempted to validate early collaborative intervention that included counseling and an academic program. More specifically, the authors aimed to answer whether or not integrated intervention comprised of a counselor and an instructor, impact student academic and social integration into the college environment. The study focused on one college and a series of introductory education courses to identify participants. The participants selected were students identified as those with low engagement or low performance or both. Prior to selecting the students, the course sections received an orientation explaining counseling services available to students. Throughout a period of three semesters, as students fell behind either because they missed class, missed homework, or failed a quiz, they received a phone call by the instructor and were offered the option to write a paper to make up points or enroll in a minimum of three counseling sessions.

This quantitative study involved a pre and post questionnaire and attempted to measure gains in academic and social integration to the college environment. The study found that the group of students that only received a phone call had little to no gain in academic and social integration in comparison to the students who received no intervention. However, the students who received counseling were identified as having
made significant gains in the integration to college process. Some of the implications discussed included the importance of teaching-faculty and counselors working together to significantly support the academic and social integration of students into college.

The study did have significant limitations in the sense that it was only conducted at one institution. Additionally, when students were contacted for an intervention, they were given the choice of either receiving counseling or not. Because motivation was not one of the variables considered, the study mentions that some students may have had the motivation already to receive counseling services regardless of the intervention. The study bears significance with regard to Puente not only because the counseling model and process is similar in both programs. Both programs entail intensive counseling that is of particular importance because under represented students are said to have lower social and cultural capital as it relates to higher education, intensive and intrusive counseling support has been found to have a relationship to higher levels of student retention and graduation.

In essence, students gain access to information, knowledge and understanding of the educational system, thereby gaining the social and cultural capital that supports their success. Finally, the study is further applicable because it also shares similarities with Puente in the sense that both models are based on the early and sustained integrated intervention by both the counselor and the English instructor.

Conclusion

Higher education in the United States has expanded its focus beyond issues of access to include issues of accountability. Government officials and educational institutions, both four-year universities and community colleges, are now focusing their
efforts on student academic success and retention. As open-door institutions offering associate degree, transfer preparation, workforce readiness, and lifelong learning opportunities, community colleges serve their local residents providing the convenience of proximity, low cost, and open access. As such, community colleges attract a higher number of underrepresented, first generation, lower income, and academically under-prepared students in comparison to four-year universities. Lack of student academic progress in addition to low student retention rates are particularly challenging to the community college establishment, especially when dealing with basic skills students and ethnic minority students. Latino students in California community colleges make up about 30 percent of the general student population; however, Latino students also make up for about 41 percent of basic skills students. Grade point averages, retention rates, transfer and graduation rates are lower for Latino students than they are for the general student population (CCCCO, 2010).

A number of intervention strategies have emerged and have been implemented in the past two decades in an effort to address the retention and lack of academic progress issues in the community college. Some examples of such efforts include Learning Communities, First Year Experience Programs, and the Puente Project that is particular to the state of California. The research suggests that such programs are succeeding in closing the academic achievement gap and in increasing retention, transfer, and graduation rates. Research also suggests that the effectiveness of such programs is in part due to their ability to positively impact student validation, socialization to the college culture, and a sense of belonging and community. Counselors, instructors, and mentors, as is the case in the Puente Project, provide coordinated support in the form of intensive
writing support, sustained counseling, and mentoring that enhance academic preparations and the social capital necessary to increase the likelihood of success.

**Gaps in Research**

Extensive research has been conducted regarding first-year programs and learning communities that share many characteristics with the Puente Project. However, such research has been conducted at the four-year institution level. Additional research is needed at the community college level and regarding the Puente Project in particular. The research is necessary in order to identify the relationship or impact that the program is having on the academic performance of its student participants. Abundant research exists about each of the three components of the program separately: writing support, counseling, and mentoring; however, little research has been conducted on the program as a whole at the community college level.

**Areas for Future Research**

As a program open to all students, Puente serves students from many different backgrounds. Because the instructional theme of the program is based on Latino literature, most of the research related to Puente is generalized to the Latino student population. Future Puente-specific research could focus on the outcomes for non-Latino students participating in the Puente Project. Additionally, not enough research has been conducted regarding attitudinal measures of student participants in terms of the three components of the program. In other words, attitudes and perceptions regarding Puente counseling, writing support, and mentoring should be further explored. Finally, because Puente focuses on providing services to basic skills students particularly with regard to students in need of improving their writing skills, the existing research also focuses on
outcomes related to academic progress in English and not in another area of basic skills in need of attention such as mathematics. Therefore, researching the relationship between services offered by the Puente Project and student academic outcomes related to mathematics is another area worthy of exploration.
CHAPTER 3 – RESEARCH METHODOLOGY

Introduction

The purpose of this study was to identify the relationship between services offered through the Puente Program at North County College and the academic success that student participants experience. Furthermore, the study compared the academic success outcomes of a Puente Program cohort to a demographically matched group over a six-semester time span. The study focused on the processes of intensive counseling, comprehensive writing support, and mentoring that Puente participants receive in the program and the relationship of these services to student academic success. The specific academic success outcomes that this study examined included grade point average at the end of the first semester in the program as well as overall GPA at the end of the second year. Additional academic success outcomes that this study examined included the number of units in which students enrolled, number of units completed, persistence and retention rates, transfer readiness and transfer rates, and number of awards received. The conceptual basis for this study was the theory of validation developed by Laura Rendon (1993). Rendon (2002) defined validation as a process that is supportive and cultivates academic and personal growth.

Research Questions

To what extent is participation in the Puente Program and receipt of its three core services, counseling, writing, and mentoring, associated with grades earned, units completed, retention, persistence, transfer readiness, transfer rates and number of awards received? The following list of research questions suggests a means of assessing the effectiveness of the cluster of services offered through the Puente Program. Given a
group of non-Puente students who are matched on their level of readiness to take English courses (pre transfer English 803), age, gender, ethnicity, and socioeconomic status, what differences, if any, are there in the following areas:

Research Question One: Is there a difference between the Puente group and the comparison group in terms of GPAs earned?

Research Question Two: Is there a difference between the Puente group and the comparison group in terms of number of units enrolled?

Research Question Three: Is there a difference between the Puente group and the comparison group in terms of number of units completed?

Research Question Four: Is there a difference between the Puente group and the comparison group in terms of retention rates?

Research Question Five: Is there a difference between the Puente group and the comparison group in terms of persistence rates?

Research Question Six: Is there a difference between the Puente group and the comparison group in terms of transfer readiness rates?

Research Question Seven: Is there a difference between the Puente group and the comparison group in terms of transfer rates?

Research Question Eight: Is there a difference between the Puente group and the comparison group in terms of number of awards received (certificates of proficiency, certificates of achievement, and Associate of Arts degrees)?

**Research Design**

A review of the current literature suggests that research pertaining to the Puente Program across California includes a preponderance of qualitative approaches. This
suggests that there is a need to increase the application of quantitative methods to investigate this issue. For this reason, a quantitative, causal comparative research methodology was used in this dissertation study. Not enough quantitative studies on the subject of Puente and the relationship between services and academic outcomes have been conducted. A quantitative study specific to the Puente Project that compares the academic success outcomes of a Puente cohort to that of a comparable group might provide a more comprehensive understanding of the relationship between Puente services and the measurable academic outcomes that Puente Project participants experience. Since the two groups examined in this study were predefined prior to the outset of the investigation and the outcome data to be analyzed was in extant form, this study was classified as a causal-comparative or ex-post-facto investigation. Furthermore, using validation theory as the theoretical framework for this study allowed for a relevant explanation of differences, if any, when comparing both groups.

**Description of the Population**

The participants in this study were current and former students at North County College (NCC, 2010). NCC is a community college in the Southwest region of the United States and serves nearly 17,000 students, 21 percent Latino compared to 19 percent of the general population who come from a Latino background (NCC, 2009). By contrast, only nine percent of the Associate Faculty and 17 percent of full time faculty come from a Latino background. The success rate for Latino students is 64 percent while the success rate for their white counterpart is 71 percent (NCC, 2009). It is important to address discrepancies in persistence, retention, and completion rates among different
student groups within NCC. It is also important to assess the effectiveness of existing programs that intend to address such discrepancies in academic outcomes.

Furthermore, given the challenging financial situation that the state of California is currently facing, it is important to research the relationship between program services and student academic outcomes. The Puente Project began at NCC in 1990. Since its inception, no study addressing the relationship between the services offered by the program and the academic outcomes that students experience had been conducted. Additionally, Puente cohorts had never been compared to similar cohorts of non-participants in terms of academic outcomes.

The Puente Project recruits and accepts a new cohort of between 24 and 28 students each year. Students are identified after they take the English assessment test. Because one of the requirements to participate in the Puente program is to be eligible to enroll in a pre-transfer basic skills English course, students scoring below transfer level become candidates for the program. The word “Puente” means “bridge” in Spanish. While the program is open to all students who meet the English eligibility criteria, the program attracts mainly basic skills students who possess academic skills below college level in terms of math and English, and who come from a Latino background. The Puente program is advertised through flyers, brochures, the college’s web page, the class schedule, and the college catalog. Additional recruitment efforts involve letters and telephone calls to students who meet the eligibility criteria for the program and who also indicate having a Latino background on the college’s admissions application (NCC, 2009).
The overwhelming majority of Puente Project participants come from a Latino background. From the year 2002 to 2009, the program has always had one to two non-Latino students in each of its cohorts. The majority of program participants are first generation college students, low income, and many of them are considered AB 540 students (NCC, 2009). The term AB 540 refers to a California Law – Assembly Bill 540 – which allows undocumented students to pay in-state tuition while attending a higher education public institution in California (Rojas, 2006). The program attracts a small number of returning students with at least one student enrolled in each cohort for the years 2002 to 2009. A returning student is someone who attended college in the past, withdrew, and subsequently reenrolled in college. The population used in the study was identified from the student records database (NCC, 2009). All students who enrolled in the Puente Program courses between the years 2002 and 2009 make up the population in this study. The Puente Project courses include English 803, the pre-transfer level English course and Counseling 110, the personal development course both offered in the fall semester. Additionally, English 100, the transfer level English Composition course, is the third and last Puente course offered each spring semester.

**Description of the Comparison Group**

The Office of Research and Planning took on the task of identifying a comparable group of students with demographic characteristics similar to the Puente Project cohorts (NCC, 2009). The target comparison group included the following characteristics: Latino background, who self-identified on the admissions application; eligibility to participate in the Puente Program as defined by student eligibility to take the English pre-transfer level course; enrollment in pre-transfer English course between the years 2002 and 2009.
(NCC, 2010). In essence, the pool of students from which the Puente cohorts were formed was the same pool of students from which the comparison group was identified. In other words, students in the comparison group were comprised of those students who took the assessment test, scored into the pre transfer English course, and met the eligibility to participate in the Puente Project.

The process of identifying the comparison group, securing the necessary information, and providing the information needed for this study followed the procedures outlined in Board Policy and were approved by the NCC Institutional Review Board. The process of identifying all data used in this project met the requirements of the SDSU IRB. Therefore, student confidentiality was maintained at all times and FERPA rules were followed throughout this research study.

**Data Collection Procedures**

The PeopleSoft database used by the Office of Institutional Research, Planning and Grants were instrumental in obtaining the data required by the study (NCC, 2009). The PeopleSoft database contained enrollment rosters, grade point averages, units completed, and other data elements such as persistence and retention rates and number of awards earned relevant to the study. A programmer from the Office of Institutional Research and Planning wrote the program designed to extract the necessary data elements from the database for both the Puente Project cohorts and for the comparison group. The reports that were generated using the Microsoft Excel software program were exported to the SPSS Statistics GradPack (SPSS Statistics GradPack [SPSS], 2012) software program, henceforth referred to as SPSS where the necessary reports such as descriptive statistics, summative reports, and statistical reports were generated.
Data Analysis

All data included in this study was provided by the Office of Institutional Research and Planning (NCC, 2009). The data file was constructed using a program written by a programmer from said office. A spreadsheet was created using the Microsoft Excel software program. Data review and validation procedures were employed to clean the data that was subsequently exported to SPSS. This statistics software program was used to conduct the statistical analysis necessary to make comparisons between the Puente cohort and the comparable group. Differences identified between the two groups were tabulated and comparative graphs were created. Further analysis was conducted to identify trends relevant to the study and in order to draw conclusions.

Limitations

A study’s flaws and potential weaknesses are considered limitations of such study (Creswell, 2009). The following limitations were identified for this study:

- The study was based on a single community college located in the coastal area of Southern California representing a confined geographical area. Findings of this study therefore cannot be assumed to generalize to the broad array of community college campuses.
- The Puente Project is unique to the state of California and while the study focused on a community college the results may not be applicable to community colleges outside California.
- The number of Puente professional staff and service providers is small and may therefore not be representative of the mode of service delivery in Puente
Projects across the state of California. Additionally, the levels of skill and commitment by staff may not be replicated in other settings.

- The study focused on 1st semester, 1st year, and 2nd year academic student outcomes which represent a relatively small time frame; therefore, the long-term effects of the program were not looked at in the study.

- The researcher in this study served as counselor for the Puente Project for the years 2005 to 2010 and this period is part of this study. Although the decision to pursue the Puente Project as the topic for this dissertation study did not take place until after the year 2009 that was the last year included in this study, which represents a potential researcher bias. However, such bias is likely controlled by the causal-comparative research design of this study that looks at outcomes in which the researcher had no active role.

**Delimitations**

- The study focuses specifically on only these performance related student learning outcomes; units enrolled, units completed, GPA, retention, persistence, transfer readiness rates, transfer rates and awards received. It does not attempt to assess attitudinal measures related to student participants in the Puente Project.

- When looking at academic performance measures related to basic skills, the study focuses on the subject of English and not on mathematics. Developing writing skills early in a student’s college career plays an important role in the success students experience subsequently and writing instruction is one of the main components of the Puente Project.
• The study focuses on Latino students. The overwhelming majority of Puente student participants come from a Latino background. The community college system in the state of California attracts a large number of Latino students. Latino students enter the community college at the basic skills level and become eligible to participate in the Puente Project at higher rates than the general student population.
CHAPTER 4 – DATA ANALYSIS

Introduction

This chapter is organized in two separate sections. The first section provides a series of descriptive statistics that yield pertinent details about the characteristics of the research subjects that comprise the Puente group and the comparison group. The second section of this chapter covers the results of the inferential statistical analyses that were used to address the eight research questions of this study. The chapter concludes with a summary of the findings.

Descriptive Statistics

Data used in this study were extracted from student records database (NCC, 2009). Using a Microsoft Excel spreadsheet, the Director of Office of Institutional Research and Planning compiled the necessary data elements from cases pertaining to students attending NCC from Academic Year 2002-2003 to 2008-2009. Data review and validation procedures were carried out and a final dataset containing 818 valid cases was exported from Microsoft Excel to SPSS to generate descriptive statistics. The number of students by cohort year is presented in Table 1 below.

Table 1

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>96</td>
<td>11.7</td>
</tr>
<tr>
<td>2003</td>
<td>84</td>
<td>10.3</td>
</tr>
<tr>
<td>2004</td>
<td>79</td>
<td>9.7</td>
</tr>
<tr>
<td>2005</td>
<td>115</td>
<td>14.1</td>
</tr>
<tr>
<td>2006</td>
<td>96</td>
<td>11.7</td>
</tr>
<tr>
<td>2007</td>
<td>133</td>
<td>16.3</td>
</tr>
<tr>
<td>2008</td>
<td>98</td>
<td>12.0</td>
</tr>
<tr>
<td>2009</td>
<td>117</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>818</td>
<td>100.00</td>
</tr>
</tbody>
</table>
In accordance with a stated delimitation of this study, all of the 818 students included in the study were of Latino background. Of the total population included in the study, 208 (25.4%) were from the Puente cohorts while 610 (75.6%) were from the comparison group. In terms of gender, 342 (41.8%) students were male and 476 (58.2%) were female. Table 2 below indicates the gender distribution by group. Females in the Puente group comprised 141 (68%) of the total number of Puente students and 67 (32%) were males. In the comparison group, 335 (55%) were female and 275 (45%) were male. This constitutes a significant difference between the two groups in terms of gender; chi-square (1, N=818) = 10.56, p<.001.

Table 2

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>67 (32%)</td>
<td>141 (68%)</td>
<td>208 (100%)</td>
</tr>
<tr>
<td>Comparison</td>
<td>275 (45%)</td>
<td>335 (55%)</td>
<td>610 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>342 (42%)</td>
<td>476 (58%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

In terms of age, the average age for the Puente group was 19.68 years. For the comparison group, the average age was 20.03. The youngest was 15 while the oldest was 55 years. In terms of financial aid, the total number of students who received financial aid was 410, or 50.1 percent. The percentage of students receiving financial aid was significantly higher for the Puente group. Of this group, 142 (68.3%) received financial aid compared to 43.9 percent or 268 for the comparison group; chi-square (1, N = 818) = 35.78, p<.001. See Table 3 below.
Table 3

*Number and Percent of Students Receiving Financial Aid by Group*

<table>
<thead>
<tr>
<th>Financial Aid</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient</td>
<td>142 (68.3%)</td>
<td>268 (43.9%)</td>
<td>410 (50.1%)</td>
</tr>
<tr>
<td>Non-Recipient</td>
<td>66 (31.7%)</td>
<td>342 (56.1%)</td>
<td>408 (49.9%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208 (100%)</strong></td>
<td><strong>610 (100%)</strong></td>
<td><strong>818 (100%)</strong></td>
</tr>
</tbody>
</table>

The majority of students in the study remained in good academic standing at 81 percent. For the Puente group, the percentage of students who remained in good academic standing was 85.0 percent compared to 79.6 percent for the comparison group.

Table 4 below further illustrates differences in academic standing by group. It also differentiates between progress probation due to less than 50 percent of units completed from the total number of units attempted, and academic probation that is due to GPA below 2.0 on a 4.0 scale.

Table 4

*Academic Standing by Group: Fall 2002 – Fall 2009*

<table>
<thead>
<tr>
<th>Academic Status</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Standing</td>
<td>177 (85.0%)</td>
<td>486 (79.6%)</td>
<td>660 (81.0%)</td>
</tr>
<tr>
<td>Progress Probation</td>
<td>18 (8.7%)</td>
<td>76 (12.5%)</td>
<td>94 (11.5%)</td>
</tr>
<tr>
<td>Academic Probation</td>
<td>7 (3.4%)</td>
<td>27 (4.4%)</td>
<td>34 (4.2%)</td>
</tr>
<tr>
<td>Progress and Academic Probation</td>
<td>1 (0.5%)</td>
<td>2 (0.3%)</td>
<td>3 (0.4%)</td>
</tr>
<tr>
<td>Progress Dismissal</td>
<td>2 (1.0%)</td>
<td>4 (0.7%)</td>
<td>6 (0.7%)</td>
</tr>
<tr>
<td>Academic Dismissal</td>
<td>3 (1.4%)</td>
<td>15 (2.5%)</td>
<td>18 (2.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208 (100%)</strong></td>
<td><strong>610 (100%)</strong></td>
<td><strong>815 (100%)</strong></td>
</tr>
</tbody>
</table>

Regarding educational goals, students have the option to select among thirteen educational goals that pertain to their reason for attending college (NCC, 2010). For the purposes of this study, the four most relevant categories are listed below.

1. Obtain an Associate of Arts degree and also transfer to a four-year university.
2. Transfer to a university without having earned an Associate of Arts degree.

3. Obtain an Associate of Arts degree only without the intent to transfer in the future.

4. Undecided about which academic objective to select in the present.

The remaining nine categories were combined into an “Other” category. Table 5 below indicates the number and percentage of students selecting an educational goal by group.

Table 5

_Educational Goal Choice by Group: Fall 2002 – Fall 2009_

<table>
<thead>
<tr>
<th>Educational Goal</th>
<th>Puente</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA and Transfer</td>
<td>130 (62.5%)</td>
<td>355 (58.2%)</td>
</tr>
<tr>
<td>Transfer with no AA</td>
<td>22 (10.6%)</td>
<td>76 (12.5%)</td>
</tr>
<tr>
<td>AA no Transfer</td>
<td>13 (6.2%)</td>
<td>49 (7.9%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>17 (8.2%)</td>
<td>56 (9.2%)</td>
</tr>
<tr>
<td>Other</td>
<td>26 (12.5%)</td>
<td>74 (12.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208 (100%)</strong></td>
<td><strong>610 (100%)</strong></td>
</tr>
</tbody>
</table>

As can be seen from Table 5, the Puente group selected option 1: Obtain an Associate of Arts degree and also transfer to a four-year university, at a higher rate than the comparison group.

The description of participant characteristics provided above, including participant numbers by cohort, gender, financial aid status, academic standing, and educational interests is intended to provide a context in which to evaluate the results of analyses presented in the following section.
Findings Related to the Research Questions of this Study

Eight research questions were identified as a means of assessing the effectiveness of the services offered through the Puente Program. The findings related to each research question are presented in this section of the study as follows:

Research Question One: Is there a difference between the Puente group and the comparison group in terms of GPAs earned?
Research Question Two: Is there a difference between the Puente group and the comparison group in terms of number of units enrolled?
Research Question Three: Is there a difference between the Puente group and the comparison group in terms of number of units completed?
Research Question Four: Is there a difference between the Puente group and the comparison group in terms of retention rates?
Research Question Five: Is there a difference between the Puente group and the comparison group in terms of persistence rates?
Research Question Six: Is there a difference between the Puente group and the comparison group in terms of transfer readiness rates?
Research Question Seven: Is there a difference between the Puente group and the comparison group in terms of transfer rates?
Research Question Eight: Is there a difference between the Puente group and the comparison group in terms of number of awards received (certificates of proficiency, certificates of achievement, and Associate of Arts degrees)?

Regarding Research Question 1: Is there a difference between the Puente group and the comparison group in terms of GPAs earned?
A one-tailed *t*-test for independent samples was used to determine if the Puente group earned a higher average GPA than the comparison group. Results of the data analysis revealed that the Puente group earned a significantly higher GPA than the comparison group for the first semester $t(417.556) = 6.926, p < .001$.

Descriptive statistics for both groups are shown in Table 6 below.

**Table 6**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>195</td>
<td>2.73</td>
<td>1.06</td>
</tr>
<tr>
<td>Comparison</td>
<td>476</td>
<td>2.07</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Furthermore, there were differences between groups in terms of their cumulative grade point average. As can be seen in Table 7 below, the Puente group earned a significantly higher cumulative GPA than the comparison group $t(724) = 7.014, p < .001$.

Descriptive statistics for both groups are shown in Table 7 below.

**Table 7**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>201</td>
<td>2.77</td>
<td>0.98</td>
</tr>
<tr>
<td>Comparison</td>
<td>525</td>
<td>2.14</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Regarding Research Question 2: Is there a difference between the Puente group and the comparison group in terms of number of units enrolled?

A one-tailed *t*-test for independent samples was used to determine if the Puente group enrolled in a higher number of units than the comparison group spanning the two year period covered by this study. As can be seen in Table 8 below, the Puente group
enrolled in a significantly higher number of units than the comparison group \( t(416) = 5.750, p < .001 \).

Descriptive statistics for both groups are show in Table 8 below.

Table 8

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>208</td>
<td>37.79</td>
<td>16.56</td>
</tr>
<tr>
<td>Comparison</td>
<td>610</td>
<td>29.83</td>
<td>17.47</td>
</tr>
</tbody>
</table>

Regarding Research Question 3: Is there a difference between the Puente group and the comparison group in terms of number of units completed?

A one-tailed t-test for independent samples was used to determine if the Puente group completed a higher number of units than the comparison group during the two year period covered by this study. Table 9 below indicates that the Puente group completed a significantly higher number of units than the comparison group \( t(816) = 5.861, p < .001 \).

Descriptive statistics for both groups pertaining to the number of units each of the two groups successfully completed are show in Table 9 below.

Table 9

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>208</td>
<td>26.46</td>
<td>17.30</td>
</tr>
<tr>
<td>Comparison</td>
<td>610</td>
<td>18.57</td>
<td>16.59</td>
</tr>
</tbody>
</table>

Further analysis of units completed by both groups examined the percentage of units completed in relationship to the number of units enrolled. This figure is represented as a percent and is calculated by dividing the number of units completed by the number
of units enrolled. This allowed a comparison between groups on percentage of units completed. A one-tailed t-test for independent samples was used to determine if the Puente group successfully completed a higher percentage of units than the comparison group. Table 10 below indicates that Puente group successfully completed a significantly higher percentage of units than the comparison group $t(447.25) = 3.628, p < .001$.

Descriptive statistics for both groups pertaining to the percentage of units completed by the two groups are show in Table 10 below.

Table 10

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean Percent</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>208</td>
<td>64%</td>
<td>.29</td>
</tr>
<tr>
<td>Comparison</td>
<td>610</td>
<td>55%</td>
<td>.37</td>
</tr>
</tbody>
</table>

Regarding Research Question 4: Is there a difference between the Puente group and the comparison group in terms of retention rates?

The academic outcome of retention requires an examination on a semester-by-semester basis. For this reason, data for each of the six semesters included in this study were analyzed to determine what number and percentage of students in each of the two groups were retained in each semester. For the purpose of this study, retention is defined as students enrolled in units for any given semester and completing at least one unit for that semester. Given that the typical progression of study for a Puente student is six semesters, what follows is the results of a series of analyses results for each of the six semesters.

Regarding semester one, a chi-square analysis revealed a significant finding regarding the retention rates of the Puente group and the comparison group for the; chi-
square \( (1, N = 818) = 14.038, p<.001 \). Descriptive statistics regarding this analysis appear in Table 11 below.

Table 11

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>188 (90.4%)</td>
<td>478 (78.4%)</td>
<td>666 (81.4%)</td>
</tr>
<tr>
<td>No</td>
<td>20 (9.6%)</td>
<td>132 (21.6%)</td>
<td>152 (18.6%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>208 (100%)</td>
<td>610 (100%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

As can be seen from the table above, the retention rate for the Puente group was 90.4 percent as opposed to 78.4 percent for the comparison group.

In terms of second semester retention (first spring), a chi-square analysis showed a difference in retention rates between the two groups. The analysis indicated that the second semester retention rate for the Puente group was 86.4 percent compared to an 80 percent retention rate for the comparison group. While the retention rate for the Puente group was higher, the analysis showed that the difference in rates between the two groups was not significant; chi-square \( (1, N = 625) = 3.554, p=.059 \). Descriptive statistics regarding this analysis are presented in Table 12 below.

Table 12

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>159 (86.4%)</td>
<td>353 (80.0%)</td>
<td>512 (81.9%)</td>
</tr>
<tr>
<td>No</td>
<td>25 (13.6%)</td>
<td>88 (20.0%)</td>
<td>113 (18.1%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>184 (100%)</td>
<td>441 (100%)</td>
<td>625 (100%)</td>
</tr>
</tbody>
</table>

A chi-square analysis of retention rates for the third semester (first summer) indicated differences in retention rates between the two groups. While the comparison group showed a higher retention rate than the Puente group, the analysis showed that the
difference in rates between the two groups was not significant; chi-square (1, N = 201) = 2.059, p=.151. Descriptive statistics regarding this analysis appear in Table 13 below.

Table 13

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51 (75.0%)</td>
<td>111 (83.5%)</td>
<td>162 (80.6%)</td>
</tr>
<tr>
<td>No</td>
<td>17 (25.0%)</td>
<td>22 (16.5%)</td>
<td>39 (19.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>68 (100%)</td>
<td>133 (100%)</td>
<td>201 (100%)</td>
</tr>
</tbody>
</table>

As can be seen in Table 13 above, the Puente group showed a 75 percent retention rate compared to an 83.5 percent retention rate for the comparison group.

The retention analysis for the fourth semester (second fall) in the program revealed that during the second fall, the comparison group experienced higher retention rates. The chi-square analysis indicated that such a difference was significant; chi-square (1, N = 465) = 3.386, p=.049. The comparison group showed an 84.5 percent retention rate compared to a 77 percent retention rate for the Puente group. Descriptive statistics regarding this analysis appear in Table 14 below.

Table 14

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>114 (77.0%)</td>
<td>268 (84.5%)</td>
<td>382 (82.2%)</td>
</tr>
<tr>
<td>No</td>
<td>34 (23.0%)</td>
<td>49 (15.5%)</td>
<td>83 (17.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>148 (100%)</td>
<td>317 (100%)</td>
<td>465 (100%)</td>
</tr>
</tbody>
</table>

The analysis of retention for the fifth semester (second spring) in the program indicated that the Puente group had a higher retention rate than the comparison group. However, the chi-square analysis revealed that such difference was not significant; chi-
square (1, N = 369) = 1.050, p=.306. Descriptive statistics regarding this analysis are shown in Table 15 below.

Table 15

Retention Rates by Group for the Fifth Semester (Second Spring)

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>108 (85.7%)</td>
<td>198 (81.5%)</td>
<td>306 (82.9%)</td>
</tr>
<tr>
<td>No</td>
<td>18 (14.3%)</td>
<td>45 (18.5%)</td>
<td>63 (17.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>126 (100%)</td>
<td>243 (100%)</td>
<td>369 (100%)</td>
</tr>
</tbody>
</table>

As can be seen in Table 15 above, the Puente group showed a retention rate of 85.7 percent compared to an 81.5 percent retention rate for the comparison group.

A chi-square analysis revealed that differences in retention rates between the two groups for the sixth semester (second summer) in the program were not significant; chi-square (1, N = 137) = 0.581, p=.446. The Puente group showed an 80 percent retention rate compared to an 85.1 percent retention rate for the comparison group. Table 16 below shows descriptive statistics regarding this analysis.

Table 16

Retention Rates by Group for the Sixth Semester (Second Summer)

<table>
<thead>
<tr>
<th>Retention Rates by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40 (80.0%)</td>
<td>74 (85.1%)</td>
<td>114 (83.2%)</td>
</tr>
<tr>
<td>No</td>
<td>10 (20.0%)</td>
<td>13 (14.9%)</td>
<td>23 (16.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>50 (100%)</td>
<td>87 (100%)</td>
<td>137 (100%)</td>
</tr>
</tbody>
</table>

Overall, the Puente group showed higher retention rates in three of the six semesters included in the study. Similarly, the study revealed that the comparison group experienced higher retention rates in three of the six semesters. However, most of the differences in retention rates in the semester-by-semester comparison between the two
groups were not significant. The study revealed that there were significant differences in the first and fourth semesters. In the first semester, the Puente group showed a 90.4 percent retention rate compared to a 78.4 percent rate for the comparison group; chi-square \((1, N = 818) = 14.038, p<.001\). In the fourth semester, the comparison group showed an 84.5 percent retention rate compared to a 77 percent retention rate for the Puente group; chi-square \((1, N = 465) = 3.386, p=.049\).

A follow up analysis examined the two groups by assessing possible group differences in the total number of semesters retained. Values could therefore range between 0 and 6 semesters. A one-tailed t-test for independent samples was used to determine if there were significant differences between the two groups in terms of the number of semesters in which participants were retained. In terms of overall number of semesters retained, the analysis revealed a significant finding. The analysis showed that the Puente group was retained for a significantly higher number of semesters than the comparison groups \(t(816) = 5.326, p= .001\).

Table 17 below shows descriptive statistics regarding this analysis.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>208</td>
<td>3.17</td>
<td>1.676</td>
</tr>
<tr>
<td>Comparison</td>
<td>610</td>
<td>2.43</td>
<td>1.760</td>
</tr>
</tbody>
</table>

Regarding Research Question 5: Is there a difference between the Puente group and the comparison group in terms of persistence rates?

Data for each semester were analyzed to determine what number and percentage of students in each of the two groups continued from one semester to the next. For the
purpose of this study, persistence is defined as students enrolled in units for any given
semester and continuing on to a second semester either sequentially or non-sequentially.

In terms of persistence from fall to spring semester during the first year, the
persistence rate of the Puente group was 88.5 percent. Of the 208 students who began in
the program the first fall, 184 continued on to the spring semester. The study indicated
that, for the comparison group, the persistence rate from fall to spring of the first year for
was 72.3 percent. Of the 610 students who enrolled in classes during the first fall, 441
continued to the spring semester.

Further analysis of persistence showed significant differences between the two
groups. A chi-square analysis revealed that the Puente group persisted for two or more
semesters at a significantly higher rate than the comparison group; chi-square (1, N =
818) = 30.028, p<.001.

Descriptive statistics regarding this analysis are presented in Table 18 below.

Table 18

<table>
<thead>
<tr>
<th>Persistence by Group</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>173 (83.2%)</td>
<td>382 (62.6%)</td>
<td>555 (67.8%)</td>
</tr>
<tr>
<td>No</td>
<td>35 (16.8%)</td>
<td>228 (37.4%)</td>
<td>263 (32.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>208 (100%)</td>
<td>610 (100%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

Regarding Research Question 6: Is there a difference between the Puente group
and the comparison group in terms of transfer readiness rates?

For this study, transfer readiness is defined as having earned a minimum of 60
college units necessary to obtain eligibility to transfer. This study examined the total
number of units completed to determine transfer readiness. It did not differentiate
between degree applicable units, basic skills units, and transferable units because such data were not available. For this same reason, the study did not take into account grade point averages in determining transfer readiness as there was no option to differentiate between overall grade point average and transferable grade point average (the grade point average from transferable units only). The data analysis revealed that a small number of students in this study completed the minimum of 60 college units typically required for eligibility to transfer from a two-year college to a four-year university. Of the 818 students in the study, 16 earned 60 or more units over a period of two years. Of the 16 students, 7 came from the Puente group and 9 came from the comparison group. This represents a 3.37 percent rate or 7 out of 208 for the Puente group. For the comparison group the rate was a 1.48 percent or 9 out of 610. While these figures do point to group differences, it would be inappropriate to conduct tests of significance on such small group numbers.

Regarding Research Question 7: Is there a difference between the Puente group and the comparison group in terms of transfer rates?

A request was made to the Office of Institutional Research and Planning (NCC, 2009) for data pertaining to transfer rates for the Puente group and the comparison group. Unfortunately, this request was not granted. However, transfer data for NCC and other community colleges in the state of California may soon be available through the California Partnership for Achieving Student Success [Cal-PASS] (2012). The Cal-PASS initiative includes educational institutions in the state of California from public elementary schools through public universities. The initiative’s main objective is to
collect and analyze such data for the purpose of tracking student performance and
developing new strategies to improve student academic outcomes (Cal-PASS, 2012).

Regarding Research Question 8: Is there a difference between the Puente group
and the comparison group in terms of number of awards received?

Students have the option to pursue multiple academic objectives (NCC, 2009).
For example, a student may opt to first pursue a certificate of achievement that requires
less than 18 units. After completing the first certificate, a student may decide to continue
to earn a certificate of competence that requires more than 18 units. Similarly, the same
student, upon completion of the second certificate, may decide to complete additional
general education units to fulfill the requirements for an Associate of Arts degree. If the
students complete the Associate of Arts degree as described in the example above, they
could potentially earn three awards, one for each of the two certificates and a third for the
A.A. degree. A student could potentially earn up to four awards if they decide to
complete the two certificates, the Associate of Arts and the Associate of Science degrees.

The number of awards students received during the two-year period covered in
this study differed significantly between the two groups. Table 19 below shows the type
and number of awards earned by each of the two groups.

Table 19

<table>
<thead>
<tr>
<th>Group</th>
<th>Certificate of Competence</th>
<th>Certificate of Achievement</th>
<th>Associate of Arts Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>5</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>Comparison</td>
<td>16</td>
<td>18</td>
<td>43</td>
</tr>
</tbody>
</table>

A one-tailed t-test for independent samples was used to determine if the Puente
group earned a higher average number of awards than the comparison group. The
analysis showed that the Puente group received a significantly higher number of awards than the comparison group; \( t(816) = 2.208, p < .003 \).

Descriptive statistics pertaining to this analysis are presented in Table 20 below.

Table 20

*Average Number of Awards Earned by Group*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puente</td>
<td>208</td>
<td>0.20</td>
<td>.49</td>
</tr>
<tr>
<td>Comparison</td>
<td>610</td>
<td>0.13</td>
<td>.40</td>
</tr>
</tbody>
</table>

A follow-up analysis regarding total number of awards revealed that among the Puente group, 35 (16.8%) received awards while 63 (10.3%) of the comparison group received awards.

Regarding the Associate of Arts degree, a chi-square analysis showed that the Puente group earned Associate of Arts degrees at a significantly higher rate than the comparison group; chi-square (1, \( N = 818 \)) = 5.967, \( p = .015 \). Descriptive statistics pertaining to this analysis are presented in Table 21 below.

Table 21

*Associate of Arts Degree Earned by Group*

<table>
<thead>
<tr>
<th>AA Degree Earned</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26 (12.5%)</td>
<td>43 (7%)</td>
<td>69 (8.4%)</td>
</tr>
<tr>
<td>No</td>
<td>182 (87.5%)</td>
<td>567 (93%)</td>
<td>749 (91.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>208 (100%)</td>
<td>610 (100%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

The analysis of the number of awards earned showed that no participant earned an Associate of Science degree. This finding is attributed to the lack of availability of Associate of Science degree options at the time of the student when the only Associate of Science option was in Nursing (NCC, 2009). In terms of differences in rates of certificates earned, the study showed that the Puente group earned a higher percentage of
certificates of achievement. However, the chi-square analysis revealed that such a
difference was not significant; chi-square (1, N = 818) = 2.479, p=.115.

Descriptive statistics pertaining to this analysis are shown in Table 22 below.

Table 22

<table>
<thead>
<tr>
<th>Certificate of A. Earned</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11 (5.3%)</td>
<td>18 (3%)</td>
<td>29 (3.5%)</td>
</tr>
<tr>
<td>No</td>
<td>197 (94.7%)</td>
<td>592 (97%)</td>
<td>789 (96.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>208 (100%)</td>
<td>610 (100%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

Regarding certificates of competency, the study showed that the comparison
group earned a slightly higher percentage of certificates of competence. However, the
chi-square analysis revealed that such difference was not significant; chi-square (1, N =
818) = 0.030, p=.863.

Descriptive statistics pertaining to this analysis are shown in Table 23 below.

Table 23

<table>
<thead>
<tr>
<th>Certificate of C. Earned</th>
<th>Puente</th>
<th>Comparison</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5 (2.4%)</td>
<td>16 (2.6%)</td>
<td>21 (2.6%)</td>
</tr>
<tr>
<td>No</td>
<td>203 (97.6%)</td>
<td>594 (97.4%)</td>
<td>797 (97.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>208 (100%)</td>
<td>610 (100%)</td>
<td>818 (100%)</td>
</tr>
</tbody>
</table>

Summary

In summary, the analysis revealed significant findings for seven out of the eight
research questions examined in this study. In terms of grade point average, the Puente
group showed a higher first semester GPA and a higher overall GPA and this finding was
significant. The Puente group enrolled in a significantly higher number of units than the comparison group. Similarly, the Puente group completed units at a significantly higher rate than their counterpart. Additionally, the study showed a significant finding in terms of retention. Of the six semesters included in the study, a significant difference was revealed for the first and fourth semesters. In the first semester, the Puente group showed a higher retention rate than the comparison group. Conversely, the comparison group showed a higher retention rate in the fourth semester. Furthermore, the analysis revealed that the Puente group had significantly higher persistence and transfer readiness rates.

No data was available to answer the research question concerning differences in transfer rates between the two groups. Finally, in terms of the number of awards received, the Puente group showed receipt of a significantly higher number of awards. A follow up analysis of Associate of Arts degrees earned showed that the Puente group earned A.A. degrees at a significantly higher rate than the comparison group.

Further discussion regarding the results from this research study and their significance to Puente at NCC will follow in Chapter Five. Chapter Five will also include recommendations for future research resulting from this study.
CHAPTER 5 – CONCLUSION

Introduction

The purpose of this research study was to examine the effectiveness of services offered through the Puente Program (NCC, 2009). The conceptual basis for this study was the theory of validation developed by Laura Rendon (1993, 2002) who defined validation as a process that is supported by various entities to foster the academic and personal growth of individuals.

The study included 818 students all of whom came from a Latino background. Of the total population included in the study, 208 (25.4%) were from the Puente cohorts while 610 (75.6%) were from the comparison group. In order to achieve this study’s purpose, the academic outcomes of the Puente group and a comparison group were compared using eight research questions. Each of the eight research questions focused on a measure of academic performance including grade point average, number of units enrolled, number of units completed, retention rates, persistence rates, transfer readiness, transfer rates, and number of awards earned.

Chapter Five is organized into three sections. The first section presents the findings resulting from the data analysis. The data was analyzed using descriptive statistics, one-tailed t-tests, and chi-square statistical tools. The second section discusses the significance of the findings as they relate to student academic success and the development of programs intended to improve the academic success of specific student populations. The third section provides recommendations for future research.
Research Findings

The first research question in this study examined differences between the Puente group and the comparison group in terms of grade point average. The analysis indicated that the Puente group had significantly higher grade point averages both during the first semester and over a period of six semesters (two academic years).

The second research question focused on the number of units that students enrolled in each of the six semesters covered by the study. The analysis showed that the Puente group enrolled in a significantly higher number of units than the comparison group. The number of units that students completed was another measure of academic performance identified in the study. In analyzing data related to research question three, the study indicated that the Puente group completed a higher number of units than the comparison group and this finding was determined to be significant.

The study examined retention rates by semester. The analysis showed that, of the six semesters included in the study, only the first semester (first fall) showed significant differences in retention rate between the two groups. In the first fall, the Puente group was retained at a significantly higher rate than the comparison group. The study further examined participant retention in two or more of the six semesters. The analysis indicated that the Puente group had a significantly higher multiple-semester retention rate than the comparison group. Similarly, the analysis of persistence rates showed that the Puente group had higher persistence than the comparison group.

Transfer readiness and transfer rates, also considered important measures of academic performance, were examined in this study. While transfer rate data were not available, transfer readiness data were examined. The study indicated that a higher
number of participants in the Puente group completed 60 or more units during their two-year course of study.

Data pertaining to the number of awards received by each of the two groups was also analyzed. The analysis revealed that the Puente group received a significantly higher number of awards. The analyses further indicated that the percentage of Associate of Arts degree received was significantly higher for the Puente group.

Other research findings indicated that a significantly higher percent of students in the Puente group were financial aid recipients. An interesting finding pertaining to differences within the Puente group revealed that the Puente group had a significantly higher number of female students than males. The study showed that female students in both groups had higher grade point averages than males.

**Significance of Findings**

The Puente Program was founded over thirty years ago for the purpose of addressing the lack of academic success of Latino students at Chabot Community College. Based upon an analysis of hundreds of student records, the Puente founders implemented the program with its three core services model: writing support, counseling, and mentoring. The same Puente model was first adopted at NCC twenty years ago, but since its inception, no study had examined the effectiveness of Puente program services.

The findings from this research study indicate that the services offered through the Puente program at NCC are having a significant impact on student academic success. The next few paragraphs further describe the impact that the findings from this study might have on the Puente program and also on future support for the development of new strategies aiming to improve Latino student academic success.
**Significance for Puente at NCC**

The Puente Program at North County College has had consistent financial and administrative support over its twenty year existence. Up to the time of this study, evidence of Puente’s impact on participant academic success was anecdotal with students expressing gratitude for services received during graduation ceremonies. Puente can now complement anecdotal evidence with quantitative results indicating that the program significantly impacts students’ GPA. Grade point averages have relevance to student completion of academic objectives such as obtaining certificates, A.A. degrees, and transfer as each of the three have a minimum GPA requirement. Grade point averages are also relevant when it comes to maintaining eligibility to receive financial aid and qualifying for merit based scholarships. At NCC, students are required to maintain a 2.0 GPA in order to be eligible to receive financial aid, and the grade point average required for most scholarships is 3.0.

The recent national shift in priority from access to higher education to completion of academic objectives, led by President Obama, emphasizes the importance of retaining and graduating more community college students. The results in this study indicate that Puente services have a significant impact on the number of units in which students enroll. The study further indicates that Puente students complete units at a significantly higher rate. Given that certificate, A.A. degree, and transfer programs have a minimum number of units as a requirement, one can infer from the study results that the Puente program could serve as a model to emulate in the efforts to retain and graduate a higher number of community college students.
The results of the study indicated that the Puente services significantly influence the retention and persistence rates of its participants. Additionally, the results indicated that Puente also had a significant impact on Associate of Arts degree completion. The results of this study strengthen the argument that Puente could serve as a model of academic success for students not only in terms of short-term measures of academic success (higher semester GPA, units enrolled, and units completed), but also regarding long-term measures of academic success such as overall GPA, graduation rates, and transfer rates.

The economic difficulties that the country has been facing over the past decade have created a difficult financial climate at the state level. The state of California has been operating in an environment of diminishing resources for a number of years. This has resulted in a trend characterized by shrinking budgets at each of the 112 California Community Colleges. NCC has been experiencing yearly budget reductions resulting in decreases in services to students. As NCC assesses how it will balance its budget, programs such as Puente could be asked to justify the funding they receive. These findings provide data-driven evidence for such a justification. The results from this study could benefit Puente significantly in its efforts to demonstrate how the program impacts the academic success of its student participants who come primarily from a Latino background.

**Significance for Program Development**

North County College (2009) serves nearly 20,000 students from its district and over 4,000 students come from a Latino background. The Puente Program serves a new cohort of about 25 students each year. The number of students who potentially qualify
for the program every year is potentially three times higher than the number currently served. Additionally, NCC has two campuses where the bulk of the courses offered are for academic credit. The Puente Program is only present at the larger campus located in the North part of the district. The results of the study could serve as justification to expand the Puente program to serve more students at its current location. Furthermore, NCC could consider instituting a new Puente program at its South campus.

The focus of Puente is to improve the academic success rate of academically under-prepared students. Puente emphasizes the importance of developing writing skills that contribute to the completion of the writing course sequence from basic skills English to transfer level composition. The counseling and mentoring services that are also part of the Puente model complement the writing instruction and, as the study results indicate, the program is successful in achieving its intended purpose. Students begin their first semester in the Puente program by enrolling in a basic-skills writing course and a college level counseling course. As such, Puente can be characterized as a program that addresses the needs of basic skills students. However, other foundation courses such as mathematics and reading are also considered vital to the success of basic skills students. The results of the study support the creation of programs similar to Puente but with the intent to address the lack of academic success in basic skills math courses. Current efforts are underway at NCC with programs that somewhat emulate the Puente model. None of these programs, however, focus on a specific target population such as Puente currently does.
Recommendations for Future Research

It is clear from looking at the results from the study that the Puente program is having a significant impact on the academic outcomes of its participants. The evidence suggests that the program as a whole seems to be achieving its main objective. A topic for further research could include the examination of each of the three core components of Puente. Such analysis could reveal to what extent each of the three services is associated with student success. The study results may prove helpful as NCC develops new student support services that include writing support, counseling, and mentoring. One of the concerns with developing new programs is the cost associated with their implementation, especially in this current challenging financial climate. Understanding how each of the three components impacts student academic success alone or in combination with the other two, may prove helpful in efforts to implement a model that is most cost-effective.

The majority of students attending community college take longer than two years to graduate or to transfer to a four-year university. This is often attributed to the lack of readiness to take college level courses upon entry into the community college. Additionally, high-demand foundation courses such as basic skills English and math, considered important to the development of academic skills, often fill-up quickly and are not available to all students who need them. As a result, students often enroll in courses for which they are not ready and therefore have to repeat such courses. Students also take longer to graduate or transfer because they attend college part time due to their need to work. Students participating in the Puente program are considered basic-skills students and the majority will take longer than two years to complete their academic goal.
It is important to study the academic outcomes of students participating in the Puente program beyond the two-year time frame covered in this study. The findings could prove helpful in developing support services for students beyond the first or second year of participation in the program.

In terms of instruction, the curriculum used to teach the Puente writing courses is developed using Latino-based Literature. However, each instructor selects the text books to be used from a number of choices. Similarly, the instructor teaching the counseling course chooses from a number of personal development and college success skills books. The methods used to teach both courses vary depending on the instructor teaching the courses. An analysis of student academic performance by cohort year could reveal significant findings about student academic success associated with the type of curriculum, teaching strategies and methods employed during any given cohort year.

The study revealed significant differences in Puente program participation rates by gender. A significantly higher number of female students participate in the program than males. A study that examines the reasons for higher female participation rates could help enhance recruitment practices aiming to serve a more gender-balanced population. This is especially important since the evidence indicates that Latino males seem to be performing lower academically than their female counterparts. Further differences in academic success indicators by gender may reveal significant findings that could be used to develop curriculum and teaching practices intended to improve the academic achievement of Latino male students.

In addition to enrolling in the required Puente courses during Phase I and II in the program, Puente students also enroll in other courses. An examination of academic
performance in the other courses, especially math, in which Puente students enroll could reveal significant findings. Such findings could help develop strategies to enhance Puente student success rates in such other courses. The findings could also help the Puente counselor in advising students regarding the effective combinations of course enrollment plans and course unit load management.

One of the main objectives of the Puente program is to help students successfully transfer to four-year universities. Most Puente students who transfer from community college tend to pursue the CSU and UC public university systems. In order for a student to transfer, the student must complete a minimum of 60 transferable units, attain a competitive transfer GPA (grade point average based only on transfer level units), and complete the majority, if not all, lower division major preparation courses at the community college. This is particularly important for students pursuing impacted majors or planning to transfer to universities that are considered impacted institutions. Cal-PASS (2012) is currently working with community colleges and universities across the state for the purpose of collecting and analyzing data on student academic success including transfer data. If successful, Cal-PASS could generate transfer data helpful to individual community colleges in figuring out transfer rates.

The Puente Program was initially created to serve the needs of Latino students. The program is now open to all students (regardless of gender, race, or ethnicity). Further analysis of data on the academic success of non-Latino students who participate in Puente could prove useful in enhancing current program services. Such analysis could also help determine if the findings from the current study can be generalized to a wider population of students who participate in the program.
The theoretical foundation of this project was Laura Rendon’s (1993) theory of validation. Puente operations and program activities were developed based on the theory that validating a student’s academic experiences and cultural background impacts their academic success. Additional examination of how validation is perceived by Puente participants may help implement programmatic changes and enhance the current methods of service delivery used by the Puente Program.
REFERENCES


