

Comparison of Student Success Outcomes: Puente Program and Non-Puente Students

Executive Summary

College of Marin's Strategic Plan includes an objective to measure and assess factors impacting student success. Evaluation of student success intervention programs such as Puente is one way the College uses data and research for decision-making, program planning and improvement. The [Puente program](#) was started at COM in academic year 2008-2009. Puente provides academic support and mentorship to improve retention and student success. The goal of the program is to support and mentor students to transfer. In this evaluation we compare several student success outcomes among Puente students to a similar group of students who did not participate in the program. The results demonstrate the impact of Puente on student success at COM and areas where the program may want to focus going forward.

We used logistic regression analysis to compare Puente and comparison group students on several success outcomes: success in English 120, persistence to English 150, and success in English 150 the first time or any time taken. We also looked at several completion outcomes: transfer to a 4-year institution, achievement of transfer-prepared status, and completion of AA/AS/AA-T/AS-T degree. Students in the comparison group were those who identified as Hispanic/Latino, had an educational goal of AA/AS degree or transfer, and enrolled in English 120 during the same terms as Puente students.

Main Findings

The regression models showed that compared to students in the comparison group, Puente students were twice as likely to:

- complete English 120 with a C or higher;
- enroll in English 150;
- succeed in English 150 the first time taken; and
- achieve transfer-prepared status at COM (60 CSU/UC transferable units with GPA \geq 2.0).

Puente did not have a significant impact on COM degree completion or transferring to a 4-year institution. However, tracking transfer rates for Puente students may miss some students who actually transferred because Puente students are more likely than other COM students, including those in the comparison group, to enroll without reporting a Social Security number.

Follow-up analyses requested by Puente staff showed that a greater proportion of Puente students than those in the comparison group enroll in Math courses during the same year as English 120. Puente students are also more likely to enroll in English 151 or 155, the last courses in the CSU/UC transfer sequence, but do not successfully complete those courses at a higher rate.

These results suggest that student success programs like Puente can improve the College's progress toward achieving its student equity and student success goals, including reducing disproportionate impact among lower achieving groups such as Hispanic students.

Background

College of Marin's Strategic Plan includes an objective to measure and assess factors impacting student success. Evaluation of student success intervention programs such as Puente is one way the College uses data and research for decision-making, program planning and improvement. In this evaluation we compare several student success outcomes among Puente students to a similar group of students who did not participate in the program. The results demonstrate the impact of Puente on student success at COM and areas where the program may want to focus going forward.

The [Puente program](#) was started at COM in academic year 2008-2009. Puente provides academic support and mentorship to improve retention and student success. Although the program is available to all students, it was established nationally to serve primarily Hispanic students and the vast majority of COM's program participants identify as Hispanic. Students joining the Puente program begin with their respective cohort in a counseling course and a Puente-specific section of English 120, the English writing course one level below transfer-level English. The course provides "an intense focus on writing and on the Chicano/Latino experience in literature." Taken concurrently with English 120, the Puente counseling course provides college survival skills such as study habits and time management. Puente students typically enroll in the counseling and English 120 course during their first semester in the program, and enroll in English 150 during their second Puente semester. This may not be their first semester enrolled at the College, however, since many become Puente students after having completed one or more semesters. In addition, Puente students are assigned a mentor from the community. Students continue to work closely with their mentors, receive counseling services, and participate in Puente cohort activities throughout their enrollment at COM. Though the program does not explicitly require students to have an educational goal of transferring to a 4-year institution, the goal of the program is to support and mentor students to transfer.

Methods

For this evaluation, we used logistic regression analysis to compare students participating in the Puente program to students in a similar comparison group on several success outcomes that would likely be affected by participation in the program. Given Puente's focus on writing, we examined several success outcomes in the English course sequence leading to transfer and/or degree:

- Success in English 120¹
- Persistence to English 150 (transfer-level English)
- Success in English 150 the first time taken
- Success in English 150 at any time taken

Success rates are defined as the proportion of students in the course earning a C or higher, of all students enrolled past the last drop date.

In addition, given the broader focus on college success and transfer, we looked at several completion outcomes:

- Transferred to a 4-year institution
- Achieved transfer-prepared status (completed 60 UC/CSU transferable units with a GPA \geq 2.0)

¹ Students successfully completing a course received a passing grade of A, B, C, or P at the end of the semester. Success rate is the number of A, B, C, and P (Pass) grades divided by A, B, C, P, D, F, FW, NP, and W grades.

- Earned an AA/AS/AA-T/AS-T degree

We included other factors in the regression model that we know may affect student success, from the literature and from previous research using COM student data. We also included factors to control for demographics and the level of college experience prior to joining Puente or taking English 120. These factors included:

- Gender
- Age at the Fall term of the Puente program (for the comparison group, at the term enrolling in English 120)
- First generation status
- Lowest level of English or ESL taken at COM
- Number of units earned at COM before the Fall term of the Puente program (for the comparison group, before enrolling in English 120)

Selection of a Comparison Group

In order to determine whether the Puente program has a positive, independent effect on the success outcomes, we needed to compare students in the Puente program to other students who are similar in important characteristics—that is, have an equal likelihood of succeeding as the Puente students, the only difference being that they did not participate in Puente.

Puente students begin the program in an English 120 course, and the program is intended to support students wanting to transfer. Therefore, to select an appropriate comparison group, we began by comparing Puente students to COM students who enrolled in English 120 during the same time period as the Puente program was in effect (Fall 2009 through Fall 2015), and had a stated educational goal of earning an AA/AS degree or transferring to a 4-year institution. Though Puente students had various educational goals, the program recruits students whose intent is to transfer.

Our demographic comparison of the two groups led us to further restrict the comparison group to students identifying as Hispanic/Latino. Most Puente students—91%—identified as Hispanic/Latino or Hispanic/Latino and another race/ethnicity. The 19 students who did not identify as Hispanic/Latino were omitted from the Puente group in the regression analysis to ensure a direct comparison (though the models were run first including all Puente students and the results were the same). Puente students were more likely to be female, as is typical of student support programs. They were also more likely to be first-generation students, and slightly younger than those in the comparison group. Therefore we controlled for gender, age and first-generation status in the regression models. See Appendix A for a comparison of Puente students, students in the Hispanic/Latino comparison group (referred to as the Comparison Group), and all students enrolled in English 120 with an educational goal of AA/AS degree or transfer (referred to as “All Eng120 Students”).

Many of the comparison group students, like Puente students, were enrolled at COM before enrolling in English 120. To see whether Puente students were different than others enrolling in English 120 in terms of prior academic success, experience in college, and preparedness for college English, we also compared the number of units earned at COM, their average course success, GPA, and the level of the first English or ESL course taken at COM. These comparisons can also be found in Appendix A under “Academic Characteristics.” These tables show that at the time they enter the Puente program, Puente students typically had completed more units at COM, had a slightly higher course success rate, and a

higher average GPA than comparison group students. Looking at the lowest level of English or ESL students took at COM, Puente students were more likely than comparison group students to have started at more than one level below English 120. Since the Puente program recruits from developmental English courses, particularly English 92 and English 98, we would expect to see more students from Puente having started at those levels, and also more units accumulated by the time they're ready to enroll in English 120. Puente students also have a slightly higher mean unit load during their first term in Puente. The slightly higher average GPA among entering Puente students suggests a small self-selection bias.

Results

Table 1 is a summary of the descriptive statistics and result of regression analysis for each of the success outcomes we examined for Puente and comparison group students. Our analysis shows that Puente students were more likely to complete English 120 successfully, enroll in English 150 (transfer-level English), succeed in English 150 the first time enrolled, and achieve transfer-prepared status at COM. Puente students were equally likely as those in the comparison group to succeed in English 150 at any time taken, earn an AA/AS degree at COM, and transfer to a 4-year institution (see Table 1). All of the success outcomes below were tracked from the term students started Puente or from when the students in the comparison group first took English 120, through the Spring 2016 semester. Therefore some students who joined Puente or took English 120 in more recent semesters may yet achieve these outcomes.

The regression models used in this study have pseudo-R² values ranging from .02-.11. In general, such low R² values mean that factors not included in the model largely predict the outcome. However, the purpose of this analysis was to assess whether the Puente program has a significant influence on the outcomes relative to other factors included in the models, not to predict the overall probability of the outcomes themselves. Therefore, the R² statistics in this research are less useful in answering our research questions and low R² values are not of particular concern.

Table 1. Descriptive Statistics and Regression Model Results for Success Outcomes, Puente Students and Comparison Group

	Descriptive Statistics		Regression Model	
	Puente Students (n=184)	Comparison Group (n=458)	Odds ratio- Puente students	Model significant ≤ 0.05
Succeeded in English 120	88%	64%	4.3	Yes
Persisted to English 150	75%	58%	2.1	Yes
Succeeded in English 150 the first time taken*	79%	66%	1.9	Yes
Succeeded in English 150 at any time**	85%	77%	1.4	No
Achieved transfer prepared	21%	14%	1.9	Yes
Transferred to a 4-year institution	9%	14%	.74	No
Earned an AA/AS/AA-T/AS-T degree at COM	13%	10%	1.4	No

Note: This table includes only Puente students included in the regression models. Nineteen Puente students not identifying as Hispanic/Latino were omitted.

**Of those who persisted to English 150*

***Of those who repeated English 150*

Success in English 120

The success rate in English 120 among Puente students was 88%, and 64% for students in the comparison group. The regression model shows that holding all other factors in the model constant, Puente students are 4.3 times as likely as those in the comparison group to succeed in the course.

In the model, each level of English below English 120 was compared to those who had started in English 120. Regardless of Puente status, those who started at the level below English 120—English 98 or 98SL—were 2.1 times as likely to succeed as those starting in English 120, and females were 1.5 times as likely as males to succeed. No other factors in the model were statistically significant. See page 11 for the full regression model.

Persistence to English 150

Seventy-five percent of Puente students went on to take college-level English (English 150), and 58% of those in the comparison group. The regression model showed that Puente students were 2.1 times as likely as those in the comparison group to enroll in English 150 holding all other factors constant.

The only other statistically significant factor in the model was being a first-generation student. Regardless of Puente status, first generation students were less likely (.67 times or about two-thirds as likely) to persist to English 150. See page 12 for the full regression model.

Success in English 150 (first time taken)

Puente students' success rate the first time taking English 150 is 79%, compared to 66% for those in the comparison group. Holding all other factors in the model constant, Puente students were twice as likely to succeed. No other factors in the model were statistically significant influences on success in English 150. See page 13 for the full regression model.

Success in English 150 (at any time)

One-third of the students in the comparison group and 19% of Puente students took English 150 more than once before successfully completing. Of these students, 85% of those in Puente and 77% of those in the comparison group eventually succeeded. The regression model showed a similar pattern as the previous models, with Puente students 1.4 times as likely to succeed as those in the comparison group. However, the model was not statistically significant, meaning that the difference could have occurred by chance. See page 14 for the full regression model.

Transfer Prepared

Twenty-one percent of Puente students entering the program since 2009-2010, and 14% of students in the comparison group, reached transfer-prepared status as of Spring 2016. The regression model showed that Puente students were 1.9 times as likely as those in the comparison group to reach transfer-prepared status.

Whether or not students enrolled in Puente, the total number of units earned before enrolling in English 120 had a very small but positive impact. For each additional unit earned, the odds of reaching transfer-prepared status increased 4%. First generation students were .39 times as likely as non-first generation students to achieve transfer-prepared. Students beginning at 4 levels below college level (English 62 or ESL 66/73) were just .22 times as likely as those starting in English 120 to make it to transfer-prepared. See page 15 for the full regression model.

Transferred

The regression model showed Puente as having no statistically significant impact on transfer.

Regardless of Puente status, first-generation students were only .29 times as likely as non-first generation students to transfer. Students taking English 92 (3 levels below college level) as their lowest level COM English course were less likely (just .37 times as likely) to transfer as those starting in English 120. See page 16 for the full regression model.

These results may have been affected by an issue in tracking transfer students. For students attending any California Community College, the Chancellor's Office tracks transfer to 4-year institutions using the National Student Clearinghouse (NCS) Student Tracker data. These data show 9% of Hispanic-identifying Puente students and 14% of those in the comparison group as having transferred to a 4-year institution. However, the CO tracks transfers using the NCS, which relies on names and Social Security numbers for tracking, and has warned that international or undocumented students are [more difficult to track](#) if they change institutions, i.e., transfer. About 12% of all students at COM are enrolled without reporting a Social Security number. Among the comparison group it's 14%, and for Puente students it's 27%. Therefore it's likely that some Puente students transferred and were not able to be tracked and counted as transfers, and the proportion of untracked transfer students may be higher than in the comparison group.

Earned AA/AS/AA-T/AS-T Degree

Puente students earned an AA/AS degree at COM at slightly higher rates than those in the comparison group (13.4% compared to 9.6%). However, the regression model showed that Puente had no impact on degree attainment when controlling for all other factors. Females were twice as likely to earn a degree, and no other factors were significant. See page 17 for the full regression model.

Conclusions and Considerations

Clearly Puente had a positive and significant impact on English course success (English 120 and English 150) and persistence into the English transfer-level course sequence (English 150) as we would expect to see if the program was having its intended effect.

The program also had a positive impact on achieving transfer preparedness. At 21%, Puente students had a higher rate of achieving transfer-prepared status than the comparison group of other Hispanic/Latino students (14%).

While the program's positive impact on transfer preparedness is clear, the results showing actual transfer rates to 4-year institutions are unclear. Because Puente students are more likely to enroll without reporting a Social Security number, we cannot conclude whether transfer rates are actually lower or whether they are simply underreported. Finding out whether more Puente students actually transferred who weren't tracked through the NCS would require commitment of resources to personally follow up with these students after they leave COM.

Support programs structured to provide at-risk students with intense engagement have been shown in the literature to positively impact student success and completion. Puente is this type of program. However, without data on the amount of time and intensity of students' involvement in program activities such as mentoring and group study, we cannot directly determine the impact of these activities. Further, we would need data showing the level of involvement for students in comparison

groups who are not part of these types of support programs. The Community College Survey of Student Engagement (CCSSE) results may be useful for this purpose. COM may also be able to take advantage of matriculation tools such as the EPS Navigator to collect data on students' involvement in college activities.

The results of this study suggest that student success programs such as Puente can improve the College's progress toward achieving its student equity and student success goals. In terms of student equity, these programs can help reduce disproportionate impact among lower achieving groups, including Hispanic students.

Addendum

After discussing the results of this study with Puente staff from Counseling and the English Department, they requested two areas of additional analysis. First, they wanted us to look into whether Puente students were more likely than those in the comparison group to enroll in Math during their first year in Puente, and what level of Math they took. Second, they asked us to look at persistence to English 151 or 155, one of which must be completed successfully to transfer to a UC or CSU.

Puente students were significantly more likely than the comparison group to enroll in a Math course during their first year in Puente/English 120 (78% of Puente students and 62% of those in the comparison group). Among those who did take math during the year they started Puente/took English 120, the level of math taken did not differ significantly for Puente/non-Puente students. Most students in both groups took basic skills-level Math (Math 101 or lower). See Table 2.

Table 2. Level of Math Taken by Puente Students during First Year of Puente and Comparison Group within One Term of Taking English 120

	Puente Students		Comparison Group	
	N	%	N	%
Basic skills math	130	79.8	233	84.7
Basic skills and college level	17	10.4	24	8.7
College level only	16	9.8	18	6.6
Total	163	100.0	275	100.0

Puente students also persisted to English 151/155 at higher rates than those in the comparison group (51.6% of Puente students compared to 32.5% of those in the comparison group). However, for those who did take 151/155, there was not a significant difference in the success rate among the two groups (76.3% of Puente students and 81.3% of comparison group students).

Appendix A: Puente Students and Comparison Group Descriptive Statistics

Group Definitions:

Puente = Students enrolled in the Puente program

Comparison Group = All students enrolled in English 120, identifying as Hispanic/Latino, and with an educational goal of AA/AS degree or transfer

All Eng120 Students = All students enrolled in English 120 with an educational goal of AA/AS degree or transfer

Demographics

Ethnicity

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
Hispanic/Latino	167	82.3	317	69.2	317	20.9
Asian	4	2.0	-	-	124	8.2
Black/African American	4	2.0	-	-	130	8.6
American Indian/Alaska Native	0	0.0	-	-	8	0.5
Pacific Islander	3	1.5	-	-	9	0.6
White	8	3.9	-	-	677	44.6
More than one race	17	8.37	141	30.8	253	16.7
Total	203	100.0	458	100.0	1,518	100.0

Gender

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
Female	127	61.7	239	52.8	764	47.2
Male	79	38.4	214	47.2	855	52.8
Total	206	100.0	100.0	100.0	1,619	100.0

Age at Fall term of Puente cohort/first term enrolled in Eng120

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
Under 20	114	54.8	283	66.7	956	64.4
20-24	72	34.6	89	20.9	315	21.2
25-34	17	8.2	32	7.5	128	8.6
35-44	4	1.9	15	3.5	45	3.0
45-59	1	0.5	6	1.4	37	2.5
60 and older	0	0.0	0	0.0	3	0.2
Total	208	100.0	425	100.0	1,484	100.0
Mean	21.2		20.9		21.4	
Median	19.9		18.6		18.7	

First generation status

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
First-generation	83	39.9	142	33.4	277	18.7
Not first-generation	22	10.6	125	29.4	614	41.4
Unknown/Unreported	103	49.5	158	37.2	591	39.9
Total	208	100.0	425	100.0	1,482	100.0

Academic Characteristics

Levels below college-level English (first course taken at COM)

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
1 level below (ENGL120)	82	40.8	242	54.4	1,047	65.6
2 levels below (ENGL98)	35	17.4	130	29.2	343	21.5
3 levels below (ENGL92)	53	26.4	55	12.4	147	9.2
4 levels below (ENGL62, ESL66/73)	13	6.5	13	2.9	44	2.8
5 levels below (ESL53/56)	3	1.5	2	0.5	3	0.2
6 levels below (ESL63/76/86)	15	7.5	3	0.7	12	0.8
Total	201	100.0	445	100.0	1,596	100.0

Units earned at COM before Fall term of Puente cohort

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
None	71	34.0	187	40.8	769	47.0
0.5 to 6 units	24	11.5	64	14.0	220	13.5
7 to 12 units	23	11.0	77	16.8	222	13.6
13 to 24 units	43	20.6	80	17.5	244	14.9
More than 24 units	48	23.0	50	10.9	180	11.0
Total	209	100.0	458	100.0	1,635	100.0
Mean	14.6		9.4		8.7	
Median	9		5.3		3	

Unit load at COM at Fall term of Puente cohort/first term enrolled in English 120

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
0.5 to 6 units	19	9.2	92	20.4	320	20.0
7 to 12 units	110	53.1	218	48.4	736	46.0
13 or more	78	37.7	140	31.1	545	34.0
Total	207	100.0	450	100.0	1,601	100.0
Mean	11.3		10.2		10.5	
Median	12		11		11	

Course success at COM before Fall term of Puente cohort

	Puente		Comparison Group		All Eng120 Students	
	N	%	N	%	N	%
0%	7	4.8	14	4.9	62	6.7
1% to 50%	24	15.6	61	21.4	168	18.2
51% to 70%	21	14.5	55	19.3	127	13.8
71% to 85%	42	29.0	57	20.0	173	18.8
86% or higher	51	35.2	98	34.4	391	42.5
Total	145	100.0	285	100.0	921	100.0
Mean	70.7		69.9		72.2	
Median	76.9		75.0		80.0	

GPA at COM before Fall term of Puente cohort

	Puente (n=131)	Comparison Group (n=273)	All Eng120 Students (n=864)
Mean	2.95	2.40	2.53
Median	2.91	2.47	2.67

Appendix B: Logistic Regression Models

Success in English 120

Number of obs = 565
LR chi2(9) = 54.03
Prob > chi2 = 0.0000
Pseudo R2 = 0.0784
Log likelihood = -317.699

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	4.31	1.159809	5.42	0.000
Female	1.46	0.284175	1.94	0.052
Total units earned before enrolling in Puente/English 120	0.99	0.009543	-1.09	0.278
First level of English taken at COM (reference=English 120)				
English 98	2.09	0.531689	2.9	0.004
English 92	1.60	0.528103	1.42	0.155
English 62	2.01	1.161234	1.21	0.227
ESL 56/53	1.00	(empty)		
ESL 76/86	3.79	4.250193	1.19	0.236
Age when enrolling in Puente/English 120	1.01	0.019456	0.56	0.578
First generation student	0.74	0.150311	-1.49	0.136
Constant	1.02	0.43397	0.05	0.961

Persistence to English 150

Number of obs = 584
 LR chi2(10) = 23.11
 Prob > chi2 = 0.0103
 Pseudo R2 = 0.0299
 Log likelihood = -375.30396

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	2.13	0.445817	3.63	0.000
Female	1.27	0.22543	1.35	0.177
Total units earned before enrolling in Puente/English 120	1.00	0.00808	-0.26	0.795
First level of English taken at COM (reference=English 120)				
English 98	1.26	0.286402	1.03	0.302
English 92	1.13	0.325126	0.43	0.666
English 62	1.07	0.520952	0.14	0.888
ESL 56/53	1.66	2.024469	0.42	0.677
ESL 76/86	1.86	1.316289	0.88	0.381
Age when enrolling in Puente/English 120	0.99	0.017322	-0.37	0.714
First generation student	0.67	0.123681	-2.15	0.031
Constant	1.44	0.563364	0.94	0.346

Success in English 150 the first time taken

Number of obs = 340
 LR chi2(9) = 13.92
 Prob > chi2 = 0.1251
 Pseudo R2 = 0.0335

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	1.96	0.546682	2.43	0.015
Female	1.41	0.348297	1.39	0.164
Total units earned before enrolling in Puente/English 120	1.02	0.014325	1.15	0.248
First level of English taken at COM (reference=English 120)				
English 98	1.23	0.408287	0.63	0.529
English 92	0.80	0.343062	-0.53	0.598
English 62	1.50	1.278175	0.47	0.636
ESL 56/53	0.52	0.698321	-0.48	0.628
ESL 76/86	1.00	(empty)		
Age when enrolling in Puente/English 120	1.00	0.023342	-0.04	0.97
First generation student	1.11	0.291915	0.39	0.696
Constant	1.30	0.679952	0.5	0.615

Success in English 150 (first time taken or repeated)

Number of obs = 346
 LR chi2(9) = 11.32
 Prob > chi2 = 0.2547
 Pseudo R2 = 0.0320
 Log likelihood = -171.29268

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	1.39	0.421743	1.09	0.276
Female	1.52	0.419036	1.53	0.126
Total units earned before enrolling in Puente/English 120	1.02	0.017437	1.39	0.165
First level of English taken at COM (reference=English 120)				
English 98	1.28	0.488186	0.65	0.515
English 92	0.70	0.332991	-0.75	0.453
English 62	2.18	2.443933	0.7	0.486
ESL 56/53	0.27	0.363972	-0.97	0.332
ESL 76/86	1.00	(empty)		
Age when enrolling in Puente/English 120	0.98	0.023987	-0.76	0.447
First generation student	0.85	0.242922	-0.58	0.561
Constant	3.45	1.927643	2.22	0.026

Transfer-Prepared

Number of obs = 580
 LR chi2(9) = 54.37
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.1109
 Log likelihood = -217.98505

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	1.87	0.506659	2.3	0.021
Female	1.27	0.320654	0.93	0.352
Total units earned before enrolling in Puente/English 120	1.05	0.010996	4.26	0.000
First level of English taken at COM (reference=English 120)				
English 98	0.98	0.321164	-0.07	0.947
English 92	0.87	0.331402	-0.37	0.714
English 62	0.22	0.1704	-1.95	0.051
ESL 56/53	1.00	(empty)		
ESL 76/86	0.57	0.408031	-0.79	0.43
Age when enrolling in Puente/English 120	1.00	0.025267	0.17	0.863
First generation student	0.39	0.115193	-3.19	0.001
Constant	0.10	0.055382	-4.08	0.000

Transferred to a 4-year college

Number of obs = 565
 LR chi2(8) = 27.99
 Prob > chi2 = 0.0005
 Pseudo R2 = 0.0655
 Log likelihood = -199.60912

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	0.74	0.242839	-0.91	0.364
Female	1.48	0.394083	1.47	0.141
Total units earned before enrolling in Puente/English 120	1.02	0.010297	1.89	0.059
First level of English taken at COM (reference=English 120)				
English 98	0.79	0.254876	-0.72	0.471
English 92	0.37	0.176724	-2.08	0.037
English 62	0.35	0.287739	-1.28	0.202
ESL 56/53	1.00	(empty)		
ESL 76/86	1.00	(empty)		
Age when enrolling in Puente/English 120	0.99	0.025453	-0.26	0.794
First generation student	0.29	0.099185	-3.61	0.000
Constant	0.21	0.119012	-2.75	0.006

Earned AA/AS/AA-T/AS-T degree at COM

Number of obs = 580

LR chi2(9) = 21.88

Prob > chi2 = 0.0093

Pseudo R2 = 0.0555

Log likelihood = -186.24491

Variables in the Equation	Odds Ratio	Std. Err.	z	Sig.
Puente student	1.37	0.413776	1.06	0.291
Female	2.24	0.664768	2.71	0.007
Total units earned before enrolling in Puente/English 120	1.02	0.010133	1.56	0.12
First level of English taken at COM (reference=English 120)				
English 98	1.08	0.383821	0.22	0.827
English 92	1.62	0.625624	1.24	0.214
English 62	0.21	0.226127	-1.44	0.149
ESL 56/53	1.00	(empty)		
ESL 76/86	0.69	0.58701	-0.43	0.664
Age when enrolling in Puente/English 120	1.03	0.02507	1.25	0.213
First generation student	0.78	0.233282	-0.82	0.415
Constant	0.03	0.017913	-5.82	0.000