

College of Marin Summer Bridge Program Effect on Student Progress

Executive Summary

College of Marin (COM), with the support of 10,000 Degrees, implemented a Summer Bridge program in 2014. This three-week program was designed to help underserved low-income students entering COM prepare to enter college. To examine the impact of the program, records from the student information system were accessed for the 23 Summer Bridge participants, and compared with a matched control group of similar students that did not participate in the program. These groups' progress was compared using fall term credits attempted versus credits earned, fall term GPA, enrollment in the next term (spring 2015), course withdrawals in fall 2014 and course incompletes in fall 2014.

On all five of the outcome measures, the differences between groups were in the direction one would expect to see: all favoring the Summer Bridge program participants. In raw numbers, compared to the matched group of students not in the program, the Summer Bridge students had a higher fall term GPA, higher percentage of fall credits earned versus attempted, and all of the Summer Bridge participants enrolled for classes in the spring. Fewer of the Summer Bridge students withdrew from courses in the fall, and none had grades of incomplete. However, none of these differences were statistically significant, meaning they could have occurred by chance.

It is possible, however, that the lack of statistical significance is due to the small number of students in the program since statistical significance is influenced by sample size. Currently, plans exist to increase the number of students participating in Summer Bridge in 2015. Conducting this research on this larger group will provide a more definitive answer regarding the actual impact of Summer Bridge on students' progress in college.

In addition, one finding that should be examined further in planning the second iteration of Summer Bridge is the fact that only three Summer Bridge participants earned 100% of the units in which they enrolled in fall semester. Some enrolled for a very large number of units and completed very few. While this pattern was similar for the matched comparison group, it is reasonable to expect that a college success preparation program would result in a closer match between enrolled and earned units.

Introduction

College of Marin (COM), with the support of 10,000 Degrees, implemented a Summer Bridge program in 2014. This three-week program was designed to help underserved low-income students entering COM prepare to enter college. The program focuses on English and math skill building, college success skills, and group bonding. Although COM and 10,000 Degrees have had a relationship in the past, this is the first time a Summer Bridge program has been implemented.

The COM Summer Bridge program included 23 students. According to program staff, due to the late nature of the request for participants in the first year, in order to include more students, this first class also included some students that were not affiliated with the 10,000 Degrees program. These students came from the college access non-profits continuation schools.

Methods

To examine the impact of the program, records from the student information system were accessed with respect to Summer Bridge participation, enrollment in fall 2014 and spring 2015, courses attempted, GPA, and other academic outcomes. Although 23 students completed the Summer Bridge program, only 21 enrolled in fall 2014 courses. One student did not register at all and another registered but dropped all courses in August. Thus, this analysis is based on the 21 Summer Bridge students who did register for fall classes.

In order to provide a point of comparison, a matched set of students was drawn who did not participate in the Summer Bridge program. For each existing Summer Bridge participant, the individual most closely matching selected criteria (sex, race, age, and enrollment status) was chosen as that individual's match. For instance, a Summer Bridge participant who was female, Hispanic, 18 years old, and a continuing student would be matched with a non-Summer Bridge student on these criteria first. From that subset of students, the second set of criteria was to match as closely as possible to the highest level English and math classes in which they were placed. The set of 21 non-participant students matches exactly one-to-one with the participants on race and sex, and very closely with age and enrollment status. Every effort was made to match on English and math placement as well, with most of the sample matching exactly on at least one of the classes if not both. The analysis was then conducted comparing the two matched groups. The table below provides comparisons on these factors:

Number of Students in Matched Groups by Key Demographics

		Summer Bridge	Non Summer Bridge
Sex	Female	11	11
	Male	10	10
Race	Asian	1	1
	Black or African American	3	3
	Hispanic	17	17
Age	17	2	2
	18	11	11
	19	5	7
	20	2	1
	21	1	0

Number of Students in Matched Groups by Highest Class Placed

		Summer Bridge	Non Summer Bridge
English	062	3	3
	092	8	6
	098	1	3
	120	4	3
	120AC	4	4
	150	1	2
Math	085	3	3
	095	2	4
	101	1	4
	103	15	9
	104-121	0	1

Results

The outcome variables used for comparison of progress in this study are fall semester GPA, course withdrawals, courses incomplete, and spring enrollment. First, these variables were examined descriptively for the Summer Bridge and matched group (see table below). As is evident from the results, in each outcome measure the Summer Bridge students scored more favorably than the matched comparison group.

**Descriptive Statistics Comparing
Summer Bridge and Matched Non Summer-Bridge Students**

	Summer Bridge	Non Summer Bridge
Mean GPA Fall 2014	2.41	1.92
Percentage of Fall Credits Attempted/Earned	63%	55%
Percentage Withdrawing From One or More Fall Courses	57%	62%
Percentage Receiving Incomplete For One or More Fall Courses	4.8%	9.5%
Spring Enrollment		
<i>Enrolled versus Not Enrolled</i>	100%	81%
<i>Mean Credits Enrolled</i>	11.7	8.9

Then, paired t-tests were used to determine whether the observed differences were likely due to Summer Bridge participation or chance using the standard p value of less than or equal to .05 for statistical significance. None of the differences were statistically significant, suggesting the results occurred by chance. However, statistically significant differences might not be obtained because of the small size of the group exposed to the Summer Bridge program and registering for fall courses (n=21). Statistical significance is strongly influenced by the number of people in the data pool.

Fall 2014 GPA

For the first analysis, fall 2014 GPA was compared between the Summer Bridge group and the matched pairs sample. As seen in the above table, the mean GPA for fall 2014 courses was 2.41 for the Summer Bridge program and 1.92 for the comparison group. When subjected to significance testing, however, this difference failed to be statistically significant ($t = 1.193(20)$, $p = .247$). Therefore, the observed difference could be due to chance.

Fall credits earned

The percentage of credits earned of credits attempted was 63% for the Summer Bridge participants and 55% for the comparison group. As seen below, only three of the Summer Bridge students earned 100% of credits they attempted. This difference again failed to achieve statistical significance, $t(20) = .841$, $p = .410$. [For further information, see appendix A for tables detailing the number of credits attempted, credits earned, and the percentage of attempted/earned credits for both groups of students.]

Course withdraws

Very similar numbers of students in both groups had at least one course from which they withdrew in fall 2014. Thirteen (62%) students in the comparison group withdrew from at least one course compared to 12 (57%) of the Summer Bridge students. This was not a statistically significant difference ($t[20] = -.586$, $p = .576$).

Grades of Incomplete

Two students in the comparison group (9.5%) and one student in the Summer Bridge group (4.8%) received incompletes. This was not a statistically significant difference ($t[20] = -.849$, $p = .406$).

Spring Enrollment

Enrollment for the next (spring 2015) term is a desirable outcome of the Summer Bridge program. The analysis was run two ways, first just examining the number of students that enrolled for any credits in the spring (Summer Bridge, 100%; comparison group, 81%) and then the actual number of enrolled credits (Summer Bridge mean = 11.7; comparison group mean = 8.9). In both cases the results were not statistically significant as seen in the table below, although when considering the actual number of credits enrolled, the p value approached significance ($p = .052$).

	t-statistic (degrees of freedom)	p-value
Mean GPA Fall 2014	1.193(20)	.247
Percentage of Fall Credits Attempted/Earned	.841(20)	.410
Percentage Withdrawing From One or More Fall Courses	-.586	.576
Percentage Receiving Incomplete For One or More Fall Courses	-.849	.406
Spring Enrollment		
<i>Enrolled versus Not Enrolled</i>	-.849	.406
<i>Mean Credits Enrolled</i>	2.064	.052

Discussion & Conclusion

On all five of the outcome measures, the differences between groups were in the direction one would expect to see: all favoring the Summer Bridge program participants. In raw numbers, compared to the matched group of students not in the program, the Summer Bridge students had a higher fall term GPA, higher percentage of fall credits earned versus attempted, and all of the Summer Bridge participants enrolled for classes in the spring. Fewer of the Summer Bridge students withdrew from courses in the fall, and none had grades of incomplete. However, none of these differences were statistically significant, meaning they could have occurred by chance rather than as a result of the college success program.

While the descriptive results appear promising, they cannot predict future success of the program with different students, and that is why significance testing was employed in the group comparisons. However, it is also the case that statistical significance is influenced by sample size. In this study, the sample was small, only 21 students in each group. Currently, plans exist to substantially increase the number of students participating in Summer Bridge in 2015. Conducting this research on this larger group should provide a more definitive answer regarding the actual impact of Summer Bridge on students' progress in college, especially if more students apply to the program than can be accepted, and yet they enroll, such that a natural control group would exist.

The first several years of a program are often marked by lessons learned and programmatic improvements. Therefore, another reason for assessing new programs is to offer information that can be used to help improve the program in subsequent offerings. In that light, two additional observations from this study are worth considering. First, it is important to recall that two Summer Bridge students are not represented in this analysis because they did not enroll for fall term of 2014. Just as returning for spring term classes is an outcome measure, enrolling for fall term should also be a positive outcome.

The second finding that should be examined further in planning the second iteration of Summer Bridge is the fact that only three Summer Bridge participants earned 100% of the units in which they enrolled in fall semester. Some enrolled for a very large number of units and completed very few. (See Appendix A for detail.) While this pattern was similar for the matched comparison group, it is reasonable to expect that a college success preparation program would result in a closer match between enrolled and earned units.

Another consideration in planning for the 2015 Summer Bridge is that it is often useful for new programs to implement a formative component, rather than solely the summative analysis that was the purpose of this study. Formative evaluation is focused on determining how the process of the program might be improved. These types of information can be obtained through surveys and focus groups of program

participants and staff. It is very possible that the program as it exists now does have some positive impact on students, but would benefit from systematic improvement that could be determined through formative evaluation.

In summary, the descriptive differences between the Summer Bridge group and the matched comparison group of COM students is promising. Enrolling more students in this program in the future and building evaluation into the program at the start would help determine the actual impact of the intervention.

Appendix A

Fall Term Credits Attempted and Earned for the 21 Summer Bridge Students

Credits Attempted	Credits Earned	Percentage Earned
30.00	9.00	30.0%
29.00	7.00	24.1%
24.00	14.00	58.3%
21.00	15.00	71.4%
19.00	1.00	5.3%
18.00	13.00	72.2%
17.00	17.00	100.0%
15.00	12.00	80.0%
14.50	8.50	58.6%
14.00	14.00	100.0%
14.00	9.00	64.3%
13.00	13.00	100.0%
13.00	11.00	84.6%
13.00	10.50	80.8%
13.00	10.00	76.9%
13.00	10.00	76.9%
13.00	8.00	61.5%
11.00	5.00	45.5%
10.00	9.00	90.0%
8.00	1.00	12.5%
5.00	1.00	20.0%
Mean = 11.3	Mean = 7.5	Mean = 63.3%

**Fall Term Credits Attempted and Earned for the
21 Matched Non Summer Bridge Students**

Credits Attempted	Credits Earned	Percentage Earned
21.0	21.0	100.0%
17.5	14.5	82.9%
16.0	16.0	100.0%
14.0	4.0	28.6%
13.5	9.5	70.4%
13.0	5.0	38.5%
13.0	9.0	69.2%
13.0	4.0	30.8%
13.0	12.0	92.3%
13.0	13.0	100.0%
12.0	12.0	100.0%
12.0	3.0	25.0%
12.0	8.0	66.7%
12.0	9.0	75.0%
12.0	7.0	58.3%
11.0	.0	.0%
11.0	.0	.0%
10.0	7.0	70.0%
6.0	3.0	50.0%
4.0	.0	.0%
3.0	.0	.0%
Mean = 12.0	Mean = 7.5	Mean = 55.1%