

Effects of Participation in a Summer Bridge Program on the
Academic Achievement of African American College Students.

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October, 1998

Abstract

African American college students who participated in a Summer Bridge Program to develop academic skills were compared to a Control Group to assess the effects of the summer intervention program. A total of 44 students who participated in a "Summer Bridge Program" prior to enrollment as fall term first-year students were compared to 64 students randomly selected as the Control Group. T-tests revealed significant differences in preparation for college as measured by such measures as HSPGA or standardized test score. No differences were found between Summer Bridge and Control Groups on FGPA. ANCOVA was used to construct a regression model that illustrates the effect of Summer Bridge Program.

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of African American College Students.

Since 1975, The University of Michigan's College of Literature, Science and the Arts annually has offered a Summer Bridge Program for students whose academic credentials are marginal or uneven, but who show promise for success in the rigorous Michigan academic environment. Summer Bridge is a conditional admission program, meaning that students admitted through it must successfully complete the Bridge experience in order to enroll as regular full-time students in the fall term. Most Summer Bridge students are members of racial/ethnic minority groups that historically have been underrepresented in higher education relative to their numbers in the population at-large; that is, most Summer Bridge students are African American, Hispanic, or American Indian. Summer Bridge students are required to participate in an intensive seven-week summer academic experience in which they work to develop their abilities in preparation for fall term coursework. Bridge students enroll in four courses during the summer: Mathematics, English, Introduction to Computers, and Academic Socialization. The latter course covers issues related to college adjustment including effective study skills and personal growth topics. The "uneven" credentials of Summer Bridge students is illustrated by the common example of a student whose high school record reveals both exceptional grades (e.g., a high grade point average), and mediocre standardized test scores. For the first twenty years of the Summer Bridge Program, about 50 students per year enrolled; in recent years about 80 students per year undergo the Summer Bridge experience. Over 1,200 students have participated in Summer Bridge since its inception.

The Summer Bridge Program represents an effort to improve the preparation of a select group of students for rigorous college-level work at The University of Michigan. The Summer Bridge Program is designed to improve basic skills in Math and writing as well as to provide an extended orientation experience for its participants. Collins (1996) has shown that participation in Summer Bridge produced statistically significant improvement in mathematics and English skills. Moreover, Collins also found that while neither standardized test score nor high school grade-point average correlated with fall term college grades for Summer Bridge students, there was a significant correlation between achievement (i.e., GPA) in

Summer Bridge and first term college grades. Collins concluded that participation in the Summer Bridge Program generally had a positive effect on student academic achievement as measured by fall term grades.

This report will focus on the academic achievement of students who participated in the Summer Bridge Program and will give particular attention to African American students. Although students from all racial/ethnic groups have participated in Summer Bridge, African Americans form the largest group of Summer Bridge students (historically about 75% of Summer Bridge students are African American). In addition, sufficiently large numbers of non-Summer Bridge African American students can be identified for statistical comparison purposes. Thus, the report findings are based on data for African American students only, but such findings are considered representative of the experiences of all Summer Bridge students.

For a variety of reasons black students nationwide evidence an “achievement gap” in the academic arena relative to whites. A confluence of poverty and race seems to contribute greatly to the disparities noted in school achievement. Poor children often lack the proper materials and supplies to demonstrate their knowledge; teachers in poor school districts are less qualified than teachers in wealthier districts; and poorer schools tend not to have the most up-to-date textbooks, technology, and curricula available to students. The educational pattern of poverty is exacerbated by racial isolation of schools; over two-thirds of black children in the United States attend predominantly minority schools. Teachers in racially isolated schools have less education as measured by certification in fields of study; students in racially isolated schools have available to them and elect fewer courses in math and science; such students are less likely to enroll in college preparatory courses and more likely to enroll in vocational courses. Not surprisingly students who complete more math and science courses score higher on standardized tests such as the SAT or ACT (Education Trust, 1996). A high percentage of Summer Bridge students have attended urban schools that tend to be racially isolated or located in economically impoverished areas. It is universally recognized that future academic success is built upon prior academic success, so addressing the black-white achievement gap as early as possible is the fundamental goal to be achieved. The Summer Bridge experience is a means of addressing this problem for talented students whose aspirations include the attainment of a college education. The goal is to help such students perform as well as or better than their peers who may have more impressive academic credentials.

The Summer Bridge Model

The Summer Bridge Model relies upon three fundamental principles that are intended to create academic momentum for fall term success:

- Intensive Instruction in core subject matter areas such as Mathematics and English
- Academic Socialization to the rigorous intellectual environment of college
- Establishment of new habits and perspectives

Intensive Instruction. Intensive instruction in Summer Bridge emphasizes “time on task” as the basis for improving skills, insights and abilities with subject matter. Students have a full day of classes supplemented by evening workshops and study groups. Emphasis is placed on the “doing” of coursework and assignments so that students can develop realistic ideas about the amount of effort required to gain mastery of course content.

Academic Socialization. The college environment is often a novel one for students who have attended high school in racially isolated or poor communities. An important effort is to help such students to understand the different expectations of the college environment and to achieve an appropriate level of acculturation to it. Such acculturation is intended to be at once challenging with respect to developing the commitment to success that is required, while also being helpful with respect to feeling comfortable about one’s place within it the intellectual community.

Establishment of New Habits and Perspectives. The college environment, particularly on a residential campus, is full of new opportunities and challenges, many of which are not at all academic in nature. Rather they have more to do with such matters as independence and the exercise of good judgement. But in almost all colleges, the new student has to disengage from old habits, including old friendships, as they establish new habits, new friendships and new associations. The extended orientation aspect of Summer Bridge emphasizes the development of a open attitude, an appreciation for different viewpoints and perspectives, and curiosity about other cultures.

The Effect of Participation in Summer Bridge on Student Academic Achievement

The remainder of this report is concerned with the effect of participation in the Summer Bridge Program on student academic achievement. The focus will be on students who participated in the 1996 Summer Bridge Program. Although the 1996 cohort will be the focus of this report, a review of data for the last several years (1992 through 1997) reveals much about the characteristics of Summer Bridge students and the impact of participation in the Summer Bridge Program. Thus, for benchmarking purposes, this report will be supplemented with analyses that examine additional years of data to compare Summer Bridge Program participants with other students who did not participate in Summer Bridge, but who may have been in other programs recognized for their success in promoting academic achievement. In addition, Summer Bridge Program participants are compared to control groups of students who did not participate in any program to promote academic achievement.

Subjects

Although the Summer bridge Program includes students from diverse backgrounds, the analyses which follow are based on African American students who were in Summer Bridge or who were selected for the Control Group. African American students are the largest group within Summer Bridge and have been historically. A total of 44 African American students participated in Summer Bridge in 1996. A Control Group was comprised of 64 African American students randomly selected from among those who did not participate in Summer Bridge or other support programs.

Analyses

Student's T was used to assess characteristics of Summer Bridge and Control Group students. In addition, ANCOVA was employed to construct a model for predicting academic achievement in college. First semester grade point average in college (FGPA) was used as the dependent variable. Independent variables used were high school grade point average (HSGPA), high school percentile rank (HSPR), and standardized test score (Test Score). Some students took the SAT, while others took the ACT, so a conversion table was used to put standardized scores on a common scale. Regression analyses were used to predict achievement and to control for differences on the predictor variables.

Results

Table 1 summarizes student characteristics on academic achievement variables for Summer Bridge and for the Control Group. Significant differences were noted between the groups on standardized test score, HSGPA, and HSPR, but there was not difference between the groups on FGPA.

Insert Table 1 about here

Steele (1997) has argued that when assessing the academic achievement of African American students, it is the slope of the regression line for FGPA as plotted against test score that is really the thing of importance. Employing the technique used by Steele in this case produced Figure 1 which shows two roughly parallel regression lines, but with the line for Summer Bridge being higher at every point along the *x-axis* (i.e., the predictor variable).

Insert Figure 1 about here

Discussion

College students do not all begin their studies with the same level of preparation. There are a number of reasons for this, including the quality of high school, caliber of teachers, rigor of curriculum, and effort on the part of the student. The students selected to participate in the Summer Bridge Program all demonstrate good academic records and exceptional motivation, but as is clear from Table 1, there is a substantial gap between Summer Bridge and other University of Michigan students, represented by the Control Group, on such variables as HSGPA, HSPR and standardized test score. But there is no difference between the groups on the key variable of importance, that of FGPA in college. The use of the ANCOVA allows for the construction of a regression model for estimating FGPA from predictor variables that provides a good way of appreciating just what the differences in preparation imply. Basically the model allows one to control for differences in preparation by calculating an adjusted least squares mean for

FGPA. Such a model calculates the FGPA that would be expected if the two groups had comparable scores on the predictor variables. Using this model results in a predicted FGPA of 3.13 for Summer Bridge vs. a predicted FGPA of 2.58 for the Control Group. Such a finding suggests that participation in Summer Bridge can help motivated, but marginally prepared students to perform as well or better than other students who may have enjoyed the advantages of more rigorous pre-college training.

One question that some may ask is whether or not the results of this study are limited to the year in question. Figures 2, 3, and 4 are provided to address this issue from a benchmarking perspective. The University of Michigan offers a number of special programs that are designed to facilitate transition to college and academic excellence and two such programs, the Comprehensive Studies Program and the 21st Century Program, may serve as “benchmarks” for comparing the effects of the Summer Bridge Program. Summer Bridge is itself a subset of students who participate in the Comprehensive Studies Program (CSP) which offers advising, intensive instruction, and general support to students during the academic year. Summer Bridge students represent about 10-15% of the annual CSP entering cohort. The 21st Century Program (21CP) is a freshman-year residential “living-learning” program “aimed at the underachievement and low retention rates of African American students” (Steele, 1997). Some students participate in both CSP and the 21st Century Program. The Control Groups used in the construction of these figures participated in neither Summer Bridge, CSP, nor the 21st Century Program. For years 1995 and 1996, the Control Groups were comprised of student cohorts randomly selected from all African American students who were not in either of the programs described; for years prior to 1995, the Control Groups include all African American student cohorts who were not in the programs described. Thus, for each year in the following analyses, five distinct groups can be identified:

- Summer Bridge students
- Summer Bridge and Comprehensive Studies students
- Comprehensive Studies and 21st Century students
- 21st Century students
- Control Group

Figures 2 and 3 show that the pattern of significant differences in pre-college measures for Summer Bridge vs. other groups exists for each year between 1991 and 1996 (in all cases, $p < .01$). In addition, Figure 3 shows clearly that Summer Bridge students perform as well as or better than other groups of students who present more impressive credentials upon entry to college.

Insert Figures 2, 3, and 4 about here

References

- Collins, W. (1996) Correlates of Academic Achievement among College Students in a Developmental Summer Program. Unpublished report. Ann Arbor, MI: Comprehensive Studies Program, The University of Michigan.
- Steele, C. M. (1997) A threat in the air: How stereotypes shape intellectual identity and performance. American Psychologist, 52 (6), 613-629.

Table 1. Student Characteristics on Selected Academic Achievement Variables
 For Summer Bridge and Control Groups (1996).

	Summer		Student's	
	<u>Bridge (n=44)</u>	<u>Control (n=64)</u>	<u>T (df=106)</u>	<u>p.</u>
SAT score	911	1173	10.7	<.001
HSGPA	3.03	3.55	6.5	<.001
HSPR	80	86.5	2.54	<.02
FGPA	2.73	2.78	.39	n.s.

Figure 1. FGPA as a function of Test Score for Summer Bridge and Control Group

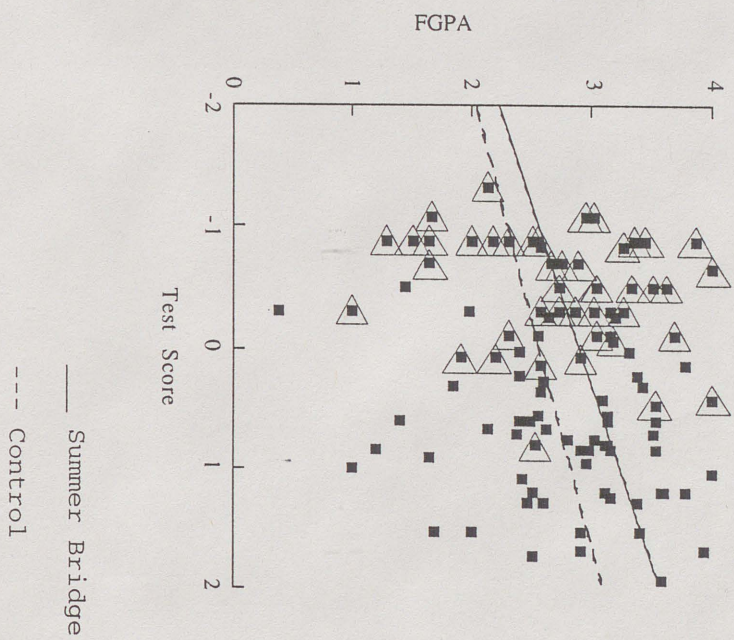


Figure 2 - Mean HSGPA for Selected Groups

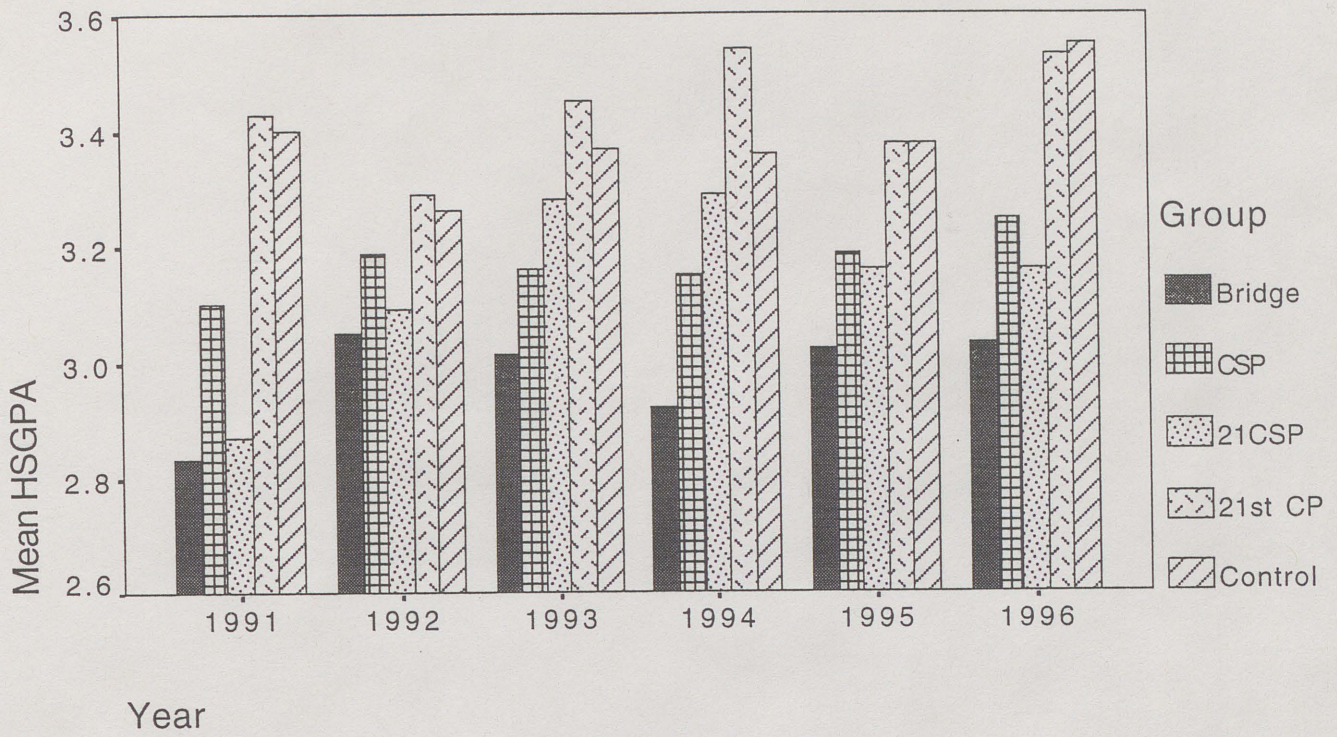


Figure 3 - Mean Standardized Test Score
for Selected Groups by Year.

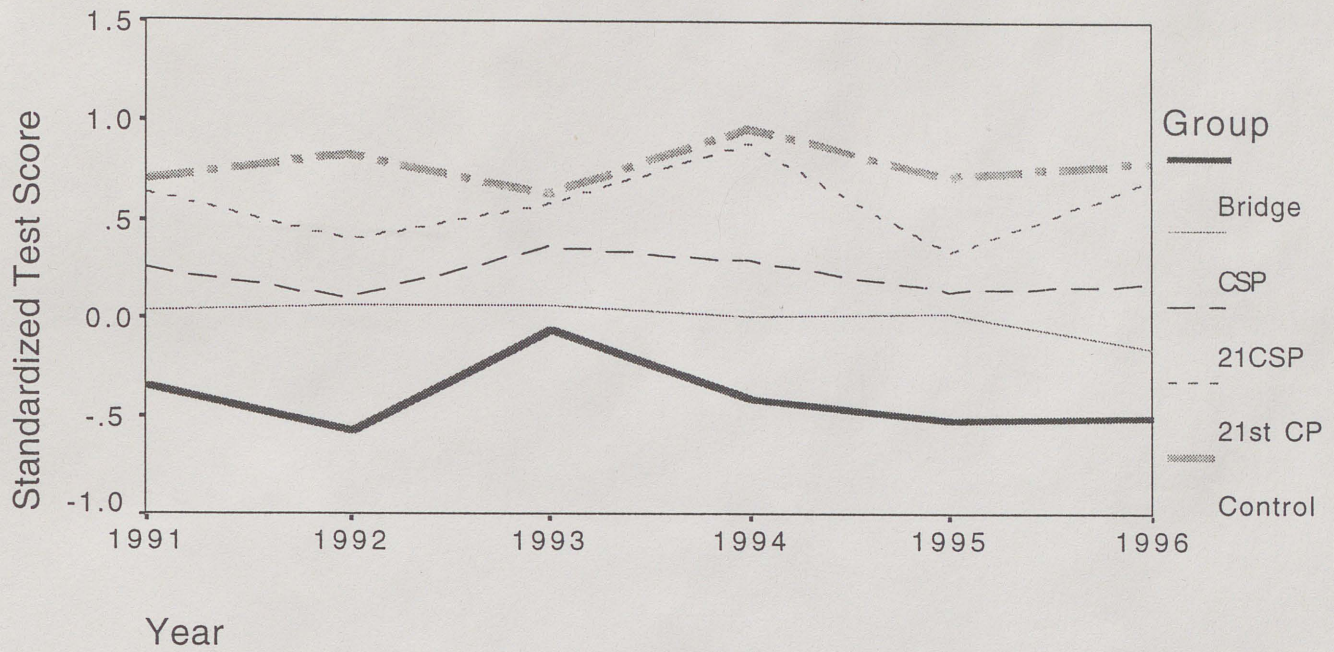
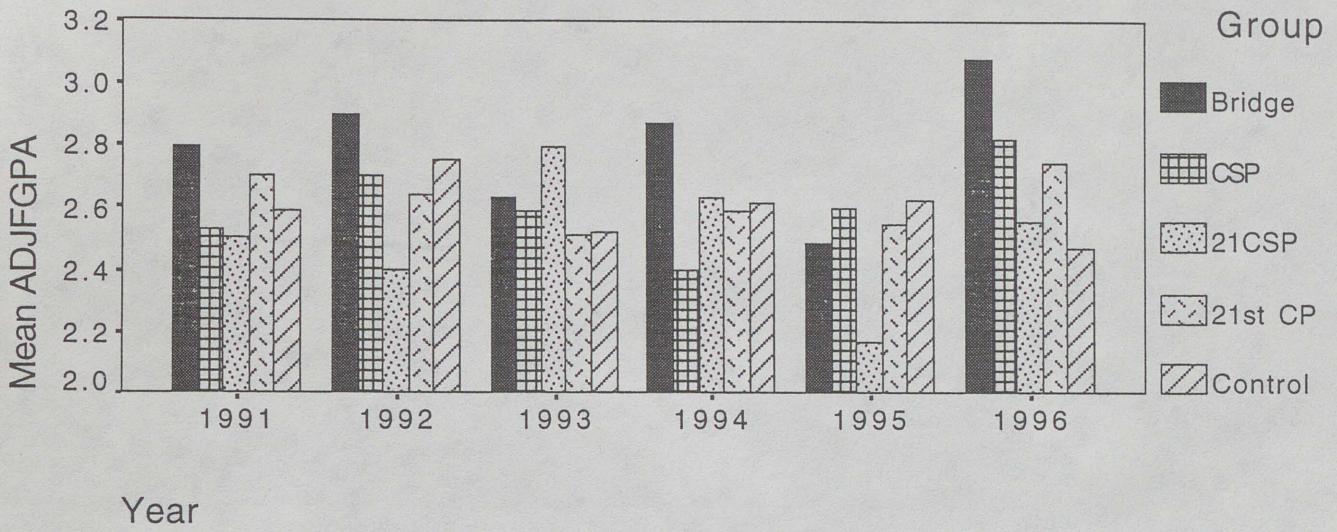


Figure 4 - Mean FGPA for selected groups adjusted for HSGPA & Test Score for each of six years.



Covariate 1: HSGPA

Covariate 2: Standardized Test Score