Generating Momentum for College Academic Success in Promising African American Students.

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Abstract

The academic achievement of African American students who participated in an intensive academic development program during the summer prior to college matriculation was compared to that of students who did not participate in the program in each of six years (1991 through 1996). A total of 258 students participated in the summer program while 671 students who did not participate comprised the comparison groups. Variables examined included students' High School Grade Point Average (HSGPA) and Scholastic Assessment Test (SAT) scores which were employed in a Multiple Regression Analysis to predict first semester college grades (FGPA) and assess the effect of program participation. Participation in the summer program was found to have a significant effect on FGPA *(t=2.37; p< .02)*; significant effects were also found for *HSGPA (t=5.84; p< .001)*, for SAT *(t=7.39; p< .001)*, and for gender (female: *t=2.09; p<.05*). The value of the summer intervention program as a means of generating momentum for academic success is discussed.

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Considerable national interest has been focused on questions of diversity in higher education and in particular on affirmative action programs and the role of standardized testing in college admissions (Bowser, et al, 1993; Thernstrom and Thernstrom, 1997; Bowen and Bok, 1998; Jencks and Philips, 1998;. Neisser, 1998; Orfield and Miller, 1998; College Board 1999a). Many of these reports detail differences between blacks and whites on standardized test scores or other measures of academic achievement such as grade-point averages. Numerous strategies have been implemented in efforts to close the "achievement gap" or to bolster academic achievement in minority college students. Most such efforts are designed to take place during the standard academic year (e. g., September through May) when such activities as tutoring, study groups, mastery learning sessions, or mentoring can provide useful adjuncts to the student's regular slate of courses.

An alternative approach, described in this report, is to generate momentum for academic success prior to the start of fall term courses through an intensive summer developmental program. A number of such "bridge" programs are in place around the country and they generally are highly regarded by student participant-alumni, by the staff who work in them and by university administrators. Relatively few rigorous studies of such programs have been done, however.

The current study offers a detailed examination of a Summer Bridge Program that has been in existence for 25 years at a major university. The study examines six classes

of students, those entering in the years 1991 through 1996 inclusive, and compares their academic achievement and progress toward graduation to cohorts of students who entered college at the same time, but who did not participate in the Summer Bridge Program.

Program Description

The Summer Bridge Program is an intensive academic experience of seven weeks duration. About 80 students participate each year; of these, approximately two-thirds are African American students. Summer Bridge students enroll in credit-bearing courses in Mathematics and English. In addition, students enroll in an introduction to computing course, and a seminar on adjustment to college, which includes a focus on study strategies. Students are selected for Summer Bridge by admissions office staff whose review of applicants identifies students with promising, but uneven credentials. A typical case might be a student from an urban high school who has an excellent academic record, but mediocre standardized test scores. Similarly, a student who attended a private school and earned good, but not excellent grades, and who performed exceptionally well on standardized tests, might be offered the opportunity to attend Summer Bridge. In each case, other factors, such as leadership or extra-curricular involvement, are also taken into consideration when determining that a given applicant has promise for success in the competitive college environment.

The "promising" students identified for Summer Bridge have all demonstrated that they have the potential to succeed academically, but in the eyes of an admissions officer they would benefit from additional development prior to the start of fall term. An alternative and perhaps more pragmatic view is that the very traits that lead to selection for Summer Bridge also impose a competitive hurdle for participants relative to other

students who are even more exceptional in terms of academic credentials. That is, in the fall term, Summer Bridge students will find themselves in competition academically with classmates with high scores for both HSGPA and SAT while also sharing the same kinds of personal characteristics that so impress admissions officers. The fact that Summer Bridge students must successfully complete the program in order to enroll in the fall term provides added incentive.

Summer Bridge also includes a student development component which emphasizes both personal and social growth over the seven-week period. This is deemed important because the large campus can seem quite impersonal and socially overwhelming during the regular fall and winter terms. In summary, the Summer Bridge Program is an intensive academic and personal growth effort that allows students the following opportunities:

- To develop academic abilities in specific content (e.g., Mathematics)
- To develop knowledge about college faculty expectations
- To develop insights about one's self (e.g., goals, strengths and weaknesses)
- To develop familiarity with the campus physical environment
- To develop a support network

Previous studies (Collins, 1996; Collins, 1998) have demonstrated that the specific objectives of Summer Bridge participation such as those mentioned above have been met quite well. The more general issue of the effect of Summer Bridge participation on academic achievement in comparison to non-Summer Bridge students is addressed by the

present study. The opportunity for additional academic development may be particularly important for students whose prior academic experiences may prove limiting in the competitive college environment. An ideal study would randomly assign subjects to treatment conditions; that is, students would be assigned to Summer Bridge or not on a random basis to provide experimental control. In this real-world context, such a study is not feasible because the very purpose of Summer Bridge is to provide higher educational opportunity to students who would not otherwise attend the selective college. Yet, it is abundantly clear from the history of education that educational progress is built upon prior experience. In fact, this is the main principle at work in selective colleges as they make admissions decisions largely on the basis of prior good academic work. Doing so is no accident of history, as the best predictor of future academic success is widely recognized to be prior academic success. Thus, it would be unethical to use a random assignment basis to place some students, without intervention, into a competitive situation in which the likelihood for failure is known to be high. Similarly, it would be a waste of resources and good will to use random assignment to place students into an intervention program when it is known that they do not need it. This educational setting is categorically different from medical research, for example, in which treatment effects are unknown or in which subjects have nothing to lose, which together make double-blind random assignment to conditions useful. In the present situation, there exists very good evidence of the effects of prior schooling on future academic achievement; moreover, the students in our investigation have much to lose: they could attend school elsewhere, they could take summer jobs to earn money for college, or they could forego college completely. Those of us who have benefited from college readily recognize its benefits

and even extol them, but we must remember that only about 25% of the 25-29 year-old age cohort in the United States has earned at least a bachelor's degree. These considerations make our comparisons of student groups, even without random assignment, not unreasonable.

METHOD

Subjects

A total of 929 African American students who enrolled as freshmen in the years 1991 through 1996, inclusive, served as the subjects of this study. 258 of these students participated in the Summer Bridge Programs offered each year, while 671 "at-large" African American students serve as a comparison group. The "at-large" students were not participants in other special (i.e., affirmative action) programs available to minority students. The Summer Bridge students were required to participate as a condition of admission to a selective university.

Data

The data were provided by the university registrar's office and consisted of official records for each student reflecting pre-college and college academic achievement variables including:

High school grade point average

SAT scores (where appropriate converted from ACT scores; and for each student standardized based on national data provided by the testing agency))

First semester college grade point average

In addition, demographic data such as race or gender were part of the dataset.

Analysis

Multiple regression analysis was used to assess the effect of variables of interest on the dependent variable, First Semester Grade Point Average (FGPA).

RESULTS

Table 1 shows descriptive statistics for the predictor variables for each group. The At-Large group demonstrates substantially higher achievement on the predictor variables and this is especially true for SAT Scores. Yet, there is considerable overlap in scores across the groups as demonstrated by Figure 1 which is a set of box-plots for the academic achievement variables for each group. Table 2 shows the intercorrelations among the variables. There are highly significant positive correlations among all the variables for the At-Large group, but only one significant correlation for the Summer Bridge group, that between HSGPA and Test Score, which is negative. For the At-Large group, the higher one's HSGPA or one's SAT score, the higher the attained FGPA. Also, HSGPA and SAT were highly positively correlated ($r=.51$; $p<01$) indicating that high scores on one measure were associated with high scores on the other measure. In contrast, for Summer Bridge students essentially no relationship was found between FGPA and either HSGPA or SAT score. In addition, there was a negative correlation between HSGPA and SAT score for Summer Bridge students indicating that high scores on one measure were associated with low scores on the other measure. These findings are consistent with the selection protocols for each group. The students in the At-Large group were selected based on strong performance on both HSGPA and SAT score. The Summer Bridge students, however, were selected because of the promise associated with high

achievement on one measure and despite a relatively low score on the other measure. (It should also be noted that for both groups the same set of other non-cognitive factors were considered in making admissions decisions as well; for example, students in both groups would have been evaluated for extracurricular involvement in high school).

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Insert Tables 1 and 2 about here
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Table 3 summarizes the results of the Multiple Regression Analysis entering HSGPA, Test Score, and a dummy variable for group (Summer Bridge vs. At-Large) as predictors of the criterion variable FGPA. This analysis shows that the model was statistically significant R^2 = .153; F(df: 4 and 924) = 41.77, $p<.001$ and that, in addition to the expected predictive effects for HSGPA and test score, participation in the Summer Bridge Program had a significant effect ($t=2.37$; $p<.02$), as did being female ($t=2.09$, $p<.05$). The regression summary table shows that FGPA increased about .29 of a full grade point for every point increase in HSGPA, while FGPA increased about .24 of a full grade point for every one standard deviation increase in SAT. Participation in Summer Bridge increased FGPA by about .14 of a full grade point, while being female increased FGPA by about .10 of a grade point in comparison to males. In practical terms, the mean difference in HSGPA of .3 between the At-Large and Summer Bridge groups, can be said to contribute less than .10 of a full grade point in differential achievement between the groups. Similarly, the mean difference of almost a full standard deviation in SAT score between the At-Large and Summer Bridge groups, can be said to contribute about .18 of a full grade point in differential achievement between the groups. Thus, participation in Summer Bridge, which contributes .14 of a grade point, can be said to essentially close

the gap in achievement that is attributable to higher HSGPA or SAT scores of the At-Large group.

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Table 4 summarizes retention data for the two groups and reveals that graduation and retention statistics for the two groups are essentially the same.

DISCUSSION

Prior research has shown that participation in a Summer Bridge intervention program can achieve the goal of improving knowledge and academic skills. The current research findings show that participation in a Summer Bridge program also can close the achievement gap attributable to higher scores on HSGPA or standardized test scores. Programs that reduce the effects of differences in preparation for college are especially important in the light of lingering racial and economic inequality. Education Trust (1996) reports that about two-thirds of African American students attend high schools that are predominantly minority and that nearly one in four central city schools reported in 1991 that they had vacancies that they could not fill with a qualified teacher. The result was that principals used substitutes, hired less qualified teachers, or cancelled courses. In the same report, Education Trust mentioned that inner city schools were hampered by continuing inequities in instructional resources, such as the availability of fewer advanced placement courses or fewer computers per student than at suburban schools. In addition, the "1999 Profile of College-Bound Seniors National Report" of the College Board shows the continuation of a ten-year trend in which the "SAT scores of large-city and rural

students have fallen further below those of suburban students" (The College Board, 1999b).

Such conditions create a school environment in which even talented, motivated students face a challenge of expectations once they get to college. The challenge of expectations is caused by inaccurate ability self-appraisals, relative to the level of competition they face in college, sanctioned by their prior schooling. To illustrate, consider that across the nation students who have excelled in high school have every right to feel proud of their accomplishments, especially in comparison to their classmates who did not do as well in the same courses. Yet, at every college in America, admissions officers recognize that a high school grade point average of, say, 3.8 from a high poverty school district school does not mean the same thing as it means for a student from a suburban or private school. Thus, particularly at selective colleges, high school "quality" often leads to discounting the grade point average from school "A" while assigning a premium to the same grade point average from school "B." However, if you are a student from school "A" you may reasonably conclude that your high school experience was generally comparable to that of students from school "B." Thus, your expectations about such matters as the amount of reading required per course, about how hard one has to study in college, or about the number of hours one can work at a part-time job and still remain academically competitive, may be inaccurate relative to those of a student from school "B."

Now, perhaps the most fundamental principle in psychology is that people are likely to repeat behaviors that were rewarded in the past. This means that in the academic context just described, students from both school "A" and school "B" are highly likely to

believe that the approaches that worked for them in high school will also work in college. This is the basis for the challenge of expectations because what worked in high school, particularly high schools with fewer instructional resources, often will prove inadequate in college, particularly at selective colleges. If not properly confronted, the challenge of expectations can become a crisis of confidence. The term "crisis" is not used here in the narrow sense of the word which is often intended to convey distress or disordered function; rather it is used in the more fundamental sense meaning a crucial turning point or a situation in which decisive change is impending. Another way to think of "crisis" as used here is in terms of the Chinese cuneiform symbol for it, which means a challenge and an opportunity. For new college students in particular, achieving the promise of their aspirations often entails the challenge of making decisive changes from academic habits that worked in the past, but are inadequate in college, while seizing the opportunity to develop new and different approaches to success.

How, then, can talented, motivated, promising students, who are likely to experience a crisis of expectations, develop more accurate self-appraisals and improve their prospects for academic achievement in competition with the even more talented students they will encounter in college? A variety of options have been identified in the literature including institutional intervention programs (Kulik, Kulik and Scwalb, 1983), involvement in research as an undergraduate, or interaction with faculty (Pascarella, 1985). The present study suggests that an intensive summer academic experience prior to fall term enrollment can effectively generate momentum for sustained academic achievement. The intensive program provides a realistic basis for assessing one's skills and expectations, while also generating confidence based on a committed work ethic and

its consequent achievement. The result demonstrated by the intensive summer program is that students with promise can compete academically as well as, an in some cases better than, their better prepared peers.

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Table 1. Means and standard deviations for academic achievement variables.

	Summer Bridge			At-Large		
	M	*SD*	*N*	*M*	*SD*	*N*
HSGPA	3.0	.40	258	3.3	.51	671
SAT Score	-.49	.56	258	.62	.77	671
FGPA	2.52	.71	258	2.72	.70	671

HSGPA: High School Grade Point Average

FGPA: First Semester College Grade Point Average

Table 2. Variable Intercorrelations

	HSGPA	Test Score	FGPA
HSGPA	1.0	-.387**	.043
SAT Score	.508**	1.0	.078
FGPA	.371**	.376**	1.0

HSGPA: High School Grade Point Average

FGPA: First Semester College Grade Point Average

Correlations for Summer Bridge students (n=258) are above the diagonal, while those for At-Large students (n=671) are below the diagonal.

***p<.001*

Table 3. Summary of Multiple Regression Analysis

Measure	*B*	SE	t
HSGPA	.288	.049	5.84***
SAT Score	.238	.032	7.39***
Summer Bridge	.14	.059	2.37**
Gender	.095	.045	2.09*

HSGPA: High School Grade Point Average

R=.391 R^2 = .153 df (4, 928) SE=.657

F = 41.77

**p<.05*

***p<.02*

****p<.001*

Table 4. Graduation and Retention Statistics

	Summer Bridge	**At-Large**
Graduation/ Retention [1]	182 (71%)	480 (72%)
Drop-outs [2]	76 (29%)	191 (28%)
N	258	671

1/ represents students who had graduated or were currently enrolled in good academic standing.

2/ represents students who were not currently enrolled and had not been enrolled for at least two consecutive semesters.

Figure 1. Box Plots of Performance on Academic Achievement Variables by Group.