

Wise Schooling: Beyond Preliminary Findings

William Collins
University of Michigan

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Claude Steele's theory of stereotype threat (1992) has focused attention on the academic achievement of African American students and attracting renewed interest from distinct quarters in the matter. However, closer examination of the preliminary findings he reported as an "existence proof" (Steele, 1997) for an intervention program based on his theory does not support his thesis. A more detailed look at his data is required to make the case. (I want to thank Claude Steele and his colleague Steve Spencer for providing their data for this analysis.) Steele has ventured to establish in a real-world context a program that is based on laboratory findings. In real world settings there are always a multiplicity of factors at work, while the controls common to the laboratory are not available, including random assignment of subjects and control of extraneous variables which may confound results. Such matters are cause for concern in assessing the preliminary findings reported for his "wise schooling" intervention program.

Steele (1997) has diagnosed the problem of academic achievement among African American college students as one that may be explained largely by a theory of stereotype vulnerability, particularly for students who are identified with the relevant schooling domain. Such vulnerability, he argues, can lead to disidentification with schooling resulting in poor school achievement. Further, he proposes that strategies derived from the theory can lead to improved academic performance in a real-world context. As a prescription for the problem he has suggested a modification of the situational factors in schooling that can lead African American students to "be held under a suspicion of negative stereotypes about their group." The modification of situational factors he described entailed the implementation of a "wise-schooling" intervention for first-year students at the University of Michigan "aimed at the

underachievement and low retention rates of African American students.” His subsequent analyses of first-semester grades over the first two years of the project were taken as “a reliable picture of the program’s initial impact.” To illustrate the program’s effect on students at different levels of preparation he offered a graph showing the relationship between predicted first-semester grades and standardized tests scores controlling for high school grade point average (Figure 5 in the 1997 article). But Steele did not discuss characteristics of students prior to their entering college and this renders the graph itself easily misinterpreted and therefore misleading, both with respect to the picture it portrays and the conclusions that are drawn from it.

To gain a more accurate sense of what Steele’s Figure 5 represents, some consideration must be given to the local picture at the University of Michigan within which Steele’s model was tested. Michigan is a large university with over 36,000 students; in reality a number of intervention strategies exist to promote student success at Michigan, but three distinct programs include minority student retention among other objectives and form the comparison groups that were used in Steele’s analysis. The 21st Century Program (21CP) is a retention program that is based on Steele’s theory of stereotype vulnerability and which attempts to lessen or eliminate vulnerability among participants. The Comprehensive Studies Program (CSP) is a student retention program that emphasizes an intensive instructional and advising model; that is, it stresses the importance of a proper work ethic as well as academic skill building among students and provides the opportunity for more contact with teachers and advisors than is typically the case. CSP serves to facilitate entry into a new academic environment by stressing personal adjustments that are necessary. The third program is actually a subset of CSP and is called the Summer Bridge Program (SB), a conditional admission program that allows a select group of students to begin their university studies in the summer preceding the freshman year and to develop skills in such areas as mathematics or writing prior to fall semester enrollment. It is important to note that

students selected for the Summer Bridge Program typically are chosen precisely because they have relatively low standardized test scores, yet exhibit outstanding potential for college success in other ways, for example, through good grades or leadership activities in high school. It also should be noted that, except for the conditional admission program, these students would not otherwise have the opportunity to enroll at Michigan.

Students in the Summer Bridge Program are a distinct group and represent about ten percent of all CSP students. Steele's analysis does not take note of such differences in student groups and, for example, combines SB with other CSP students as a single comparison group. Students may elect to participate in any combination of the three programs described. Thus, some students may participate in both CSP and 21CP. Students are normally selected for CSP and for Summer Bridge by the admissions office. Prospective students in the 21st Century Program are identified by its staff through a separate application process for admission to a "Residential Learning Community" and includes assignment to a specific residence hall; students may also be encouraged by staff to apply via telephone. Thus, students were recruited "honorifically" for the 21CP, while students in SB and in CSP were recruited in the same manner as is usual at Michigan, including referrals by advisors to programs and services that may be appropriate. Such referrals are not limited to CSP options and may include advice about the commitment and effort expected of students.

A review of Steele's data on which his analysis is based, reveal that in fact there are substantial differences between the groups in terms of mean standardized test scores; that is, there are wide discrepancies among them in terms of preparation for college work. Students in the 21CP had significantly higher standard test scores than students in either CSP or SB. But first-semester grade point averages (FGPA) achieved in college for the different groups are rather comparable. All the groups occupy a narrow band of mean FGPA achievement between about 2.5 and 3.0. It is important to

note as well that on a national scale, none of the groups has a mean standardized test score that is more than one standard deviation below the national mean; in fact, very few individual students at Michigan are to be found there. When test scores are standardized based on the local population of exceptional students at Michigan, the range of scores is necessarily restricted and as a result black students are seen to cluster more in the lower strata, consistent with national trends.

Although these data suggest that the academic achievement of students in the 21st Century Program and the Comprehensive Studies Program is mediated by levels of pre-college preparation, Steele emphasizes the difference in slopes of the regression lines for GPA vs. standardized test score as the really important issue and this question requires closer attention. At base, Steele asserts that stereotype vulnerability depresses the academic performance of black students and also that programs designed to address specific academic needs, such as the Comprehensive Studies Program described here, can have the effect of accentuating both stereotype vulnerability and its depressive effects on achievement. As proof he offered a graph, his Figure 5, depicting predicted college first-semester grade point average (FGPA) as a function of program and race controlling for high school grade point average (HSGPA). The graph depicts a linear relationship between variables, reflecting the assumption of the ordinary least squares regression analysis; the graph also suggests a wide distribution of subjects along the entire regression line, which would mean that there were large numbers of subjects from each group at the extremes (that is, two standard deviations beyond the mean in Steele's Figure 5).

However, for the 1991 and 1992 groups, the mean standardized test score for black students who participated in the 21CP-only was well above the national mean, while students in Summer Bridge, for example, were below the mean and precisely as a function of their selection. In other words, for whatever reason, the students who elected to join the 21st Century Program tended to be exceptionally well prepared

before entering college, while the Summer Bridge participants, for example, were selected because they exhibited qualities of interest *other* than high test scores. Thus, 21st Century students were concentrated above the national mean, while Summer Bridge students were concentrated below it. Steele's analysis, illustrated by the graph in his Figure 5, obscures any group differences that exist in the distributions of students along the dimension of standardized test score, creating an inaccurate impression of the relationship between FGPA and test score by program and race.

The distributions actually indicate that the different groups do not start their college careers at the same point as measured by standardized test score and are not comparably represented along the *x-axis* depicting test score in Steele's Figure 5. (Table 1 summarizes student characteristics for the different groups.) If standardized test score is a measure of preparation, then for Steele's data some groups are decidedly better prepared than others as they enter the first year of college study. Such differences in preparation undoubtedly contribute to differences in achievement. The point may be illustrated by the application of an analysis of covariance to the data used by Steele. For purposes of this commentary the analysis is limited to African American students in the different groups of which five "Treatment" groups may be defined:

Summer Bridge (n=101)

CSP-only (n=359)

21CSP (students in both 21CP and CSP; n=35)

21CP-only (n=27)

Control (n=313)

The analysis of covariance was structured using test score and high school grade point average as covariates with college first-semester grade point average as the dependent variable. Using the ANCOVA to remove the sources of confounding variance resulted in a significant treatment effect, $F(4,767)=3.15, p.02$, but in a direction different from that found by Steele. The group with the largest gain in FGPA was found to be the Summer

Bridge students, while those in the 21CP-only group were in the middle of the five groups. The actual adjusted FGPA's were 2.78, 2.57, 2.46, 2.66, and 2.68 for the Summer Bridge, CSP-only, 21CSP, 21CP-only, and Control groups, respectively. Steele has argued both that his intervention program is effective and that it produces better results than other programs based on first-semester grade-point average. The data reported here do not support such a thesis. Rather, momentum attributable to good preparation seems a more plausible explanation for academic achievement by students with higher test scores. In contrast, and more importantly, students in the alternative program which, according to Steele's theory, is likely to heighten most a threat of stereotype vulnerability, are found to outperform students in Steele's program when confounding sources of variance are controlled.

It is well-established that the best predictor of future academic success is past academic success and also that those who are better prepared academically tend to outperform others at subsequent levels of increasing difficulty. Although promoting academic achievement in all students is worthy, the really important issue facing the nation is how to promote educational parity. In the case of African American students, this means working to increase achievement and retention among those students likely to underachieve. That is, students who identify with schooling, such as those who aspire to college, but whose preparation, though commendable given their circumstances, places them at a competitive disadvantage relative to their peers. Finally, a key point I wish to emphasize is not which program has the greater effect, although these findings may lead some to make it their focus. Rather the key point is that structured programs of support and learning can improve adjustment to college as well as academic achievement for students who might otherwise find such a prospect daunting. Both Steele's intervention program and the Comprehensive Studies Program, and surely many others, have had such a focus as their goal. The findings here underscore that such a goal is quite attainable.

References

Steele, C. M. (1992, April). Race and the schooling of black Americans. The Atlantic Monthly, 69-79.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. American Psychologist, 52 (6), 613-629.

Table 1. Mean academic achievement attained for selected groups.

<u>GROUP</u>	High School GPA	Standardized Test Score*	FGPA	Adjusted FGPA
Summer Bridge	2.94	-2.31/- .45	2.60	2.78
CSP	3.14	-1.60/ .18	2.56	2.57
21CSP	2.98	-1.47/ .15	2.40	2.46
21CP	3.35	- .57/ .77	2.81	2.66
Control	3.32	- .89/ .55	2.77	2.68

*first number is test score standardized to local population;
second number is test score standardized to national population