

WISE SCHOOLING

Abstract

“Wise Schooling”: A Commentary on Steele’s (1997) “Existence Proof” for the Effect of Stereotype Vulnerability on the Academic Achievement of Black College Students -- and an Alternative

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Abstract

Steele's (1997) "existence proof" for his model of "wise schooling" for black college students is examined using the most recent class. Black students in distinct programs designed to promote academic achievement were found to be differently prepared for college based on standardized test scores. However, the groups did not differ significantly on the criterion measure of First Semester Grade Point Average (FGPA). Analysis of covariance and computation of least squares means estimates resulted in findings which fail to replicate those reported by Steele. Steele's "existence proof" for a model of wise schooling for black college students based on a theory of stereotype vulnerability is found to be lacking and susceptible to misinterpretation. A more parsimonious explanation and an alternative model for promoting academic achievement in black college students are offered.

“Wise Schooling”: A Commentary on Steele’s (1997) “Existence Proof” for the Effect of Stereotype Vulnerability on the Academic Achievement of Black College Students -- and an Alternative

Claude Steele deserves praise for directing attention to the problem of black student academic achievement in college and for raising the level of discussion on this important topic (Steele, 1992, 1997). But the “existence proof” he offered for the effect of his version of “wise schooling” on academic achievement is not only lacking, but easily misinterpreted as well. I must point out that I am no disinterested reader of his article; rather I am the director of the University of Michigan program which Steele referred to as remedial in his article. So this commentary runs the risk of being dismissed as the mere “sour-grapes” rantings of a disgruntled party. However, I trust that the substance itself of this commentary will prove otherwise. Moreover, the issue of black student academic progress at the college level is much too important for the nation as a whole to be cast as a disagreement between individuals or theories and instead requires the kind of considered analysis Steele attempts to provide.

Steele has maintained that a “wise schooling” approach based on his theory of stereotype vulnerability can be effective in promoting the academic achievement of college students in comparison to other approaches. Specifically, the model he and his colleagues developed at Michigan and which is called the 21st Century Program (21CP) was compared to another program (not mentioned by name in the article), the Comprehensive Studies Program (CSP), and to a control group of students who were not subject to intervention. Steele offered a graph in his article (Figure 5 in the June 1997 American Psychologist article) which he argues provided an existence proof

“that an intervention derived from the [stereotype vulnerability] theory could stop or reverse a tenacious negative trajectory in the school performance of stereotype-threatened students” (Steele, 1997). I suggest that there is an alternative and more plausible explanation for the effect shown in Steele’s Figure 5 than stereotype vulnerability and the intervention derived from it; that explanation is preparation for college work as indexed by standardized test score. An unfortunate feature of Steele’s Figure 5 is that it provides the reader with no sense of the distribution of standardized test scores within groups. In fact, it suggests a distribution that may well not exist. I do not have access to Steele’s data, but provide here a similar analysis as it applies to the most recent year in which the two intervention programs were offered and in a fashion that allows the reader to understand the character of the distributions of standardized test scores for the different groups.

To begin, 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 for our analyses. The 21st Century Program 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 development 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. The Summer Bridge Program (SB) is 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. The Summer Bridge Program is a subset of the Comprehensive Studies Program and represents about ten percent of all CSP students. Students may elect to participate in any combination of the three programs described. 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 to apply by staff via telephone.

Steele refers to CSP as a “remedial” program, which probably is not an appropriate description; rather CSP embodies a comprehensive model for facilitating academic achievement, which emphasizes intensive instruction, regularly scheduled active advising opportunities, and student development through such efforts as collaborative learning, peer advising, and freshman interest groups. It is unfortunate that the term “remedial” has developed a pejorative cachet because, whether used appropriately or inappropriately, it serves to deflect attention from any true benefits that may result from special efforts to promote student success, remedial or otherwise. Nevertheless, to the extent that the term “remedial” encompasses a focus on the development of good study habits and concern for improved academic competence,

then clearly all three programs qualify. To the extent that “remedial” means correcting deficiencies, then none of the programs qualifies, although I would not quibble with one who insisted on such a label for the Summer Bridge Program due to the large differences in standardized test scores its students exhibit in comparison to others in the competitive Michigan context.

Given this overall local picture, at least six groupings of black students are possible. In establishing comparison groups, all black students in the 21CP and in the Summer Bridge Program were selected; a random selection was made of black students in CSP and from black students in neither 21CP nor CSP in order to produce groups roughly comparable in size to the numbers of black students in the 21st Century Program and the Summer Bridge Program. Thus, the subjects for this analysis were students who participated in one or more programs as follows:

- 21st Century only (n=14)
- 21st Century and Summer Bridge (n=5)
- 21st Century and CSP (n=42)
- CSP only (i.e., not Summer Bridge) (n=43)
- Summer Bridge (a subset of CSP; but not in 21CP) (n=44)
- Control (black students in neither 21CP nor CSP) (n=64)

In these six groups, how do students compare in terms of academic achievement?

 Insert Figure 1 about here.

Figure 1 shows mean levels of academic achievement as measured by First-

Semester Grade Point Average (FGPA) and standardized standard test score for these groups for the most recent year (Fall 1996) where the standardization was based on nationwide means and standard deviations reported by the testing agencies. One sees immediately that there are substantial differences between the groups in terms of mean standardized standard test scores, which are distributed between -1 and 1 for the six groups; that is, there are wide discrepancies among them in terms of preparation for college work. But one also sees that the first-semester GPAs for the different groups are rather comparable. Only one group appears to deviate substantially from the others, and that group (21CP and Summer Bridge) is small ($n=5$) and also is seen to have a low mean standard test score. All the other groups occupy a narrow band of FGPA achievement between about 2.5 and 3.0. Observe that 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. Figure 1 further shows that for students who participated in the 21st Century Program, FGPA follows the pattern for standardized test score. That is, for 21st Century students, high test scores appear to result in high FGPA, while low test scores result in a lower GPA. In contrast, for CSP students not in 21st Century, FGPA does not appear to be associated with test score. Thus, a more detailed examination is provided for this most recent group of students.

Although these data suggest that the academic achievement of students in the 21st Century Program and the comprehensive 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 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 first-semester grade-point average (GPA) as a function of program and race controlling for high school GPA. 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 1996 group, the mean standardized test score for black students who participated in the 21st Century only was well above the national mean (indeed no students were below it), while in contrast the mean standardized test score for participants in the Summer Bridge Program was below the national mean. This same pattern was true for years 1993, 1994, and 1995 as well. In other words, for the 1996 groups and 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 chosen for that program precisely because they were not so well prepared. The 1996 data show that 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 may exist in the distributions of students along the dimension of standardized test score. If this is also true of the data from the earlier years (1991 and 1992) which apparently form the basis of Steele's report, then an inaccurate impression is created of the relationship between FGPA and test score by program and race.

Insert Figure 2 about here.

Figure 2 shows the regression of First-Semester Grade Point Average (FGPA) on standardized test scores for five of the comparison groups of black students, as well as a random sample of white students who participated in the 21CP. (The Summer Bridge students who participated in 21CP are omitted due to their small n of 5; but I should point out that their slope was the only one that was negative.) It is clear from Figure 2 that the slopes for all groups are positive, indicating a positive effect for students in each program, but more telling are the locations of the test score distributions for the various groups. The distributions indicate that the different groups do not start their college careers at the same point as measured by standardized test score. If standardized test score is a measure of preparation, then 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.

Figure 2 illustrates that for the 1996 data there is no obvious evidence that the regressions within the black groups differ from one another; but to the extent that we can speak of a group with the "flattest" slope, it is seen to be for the control group, and that slope is clearly positive. Thus, what we really see are groups that differ in their levels on the predictor variable, from which differences in FGPA should follow. The calculation of adjusted mean GPA estimates provides a good way of appreciating what this implies. To illustrate the point, I constructed an FGPA-HSGPA-test score regression model for black students in three groups: all those who participated in the 21CP; those who participated in CSP, but not 21CP; and those who participated in neither 21CP nor CSP. The homogeneity of slopes assumption for this model was met

as there were no significant interactions between the treatment (i.e., Group) and covariates. This model yielded a significant treatment effect, $F(2, 207) = 5.99$; $p < .01$, and adjusted mean FGPA estimates of 2.58, 2.94, and 2.47 for the 21CP, CSP, and control groups, respectively. Effectively, these are estimates of what mean first-semester GPAs for the groups would have been if each had had a common standardized test score and common HSGPA identical to the actual means across all groups.

The analysis of the most recent class of 21st Century students in comparison to other programs suggests that the existence proof for Steele's theory is lacking. What the analysis of the most recent data actually suggests is that, although the concept of stereotype vulnerability is intellectually appealing, its impact on black student achievement in a real school context is questionable. More importantly, there appears to be a more parsimonious explanation for the differences that do exist: students who are better prepared tend to perform better academically; and programs that help students improve their preparation for academic work or which pointedly seek to develop their academic abilities lead to improved performance. A complex theory of stereotype vulnerability simply is not needed to account for the differences in academic achievement that have been observed.

An alternative to a student success model based on overcoming stereotype vulnerability is the comprehensive model described here and for which the present data ironically provide an effectiveness existence proof. The comprehensive approach acknowledges the different circumstances from which students may emerge as they seek to realize their potential through higher education. Steele (1997) is almost certainly correct in his assumption that sustaining success in school requires identification with school achievement and that one must perceive good prospects for

achievement in the schooling domain as well. Likewise, those who pursue higher education clearly identify with schooling. But realizing one's potential in the face of substantial disparities in preparation is a daunting task; it is rather like running a footrace but starting many meters behind the other runners. To win the race, you must first close the gap. The comprehensive model emphasizes doing so early and places a positive focus on such effort while being honest with students about what is required of them in terms of commitment to their goals. The comprehensive model includes intensive instruction, both academic and personal advising, the development of sound study habits, and active involvement in the total university community. Many programs adhering to similar models exist nationwide and they are unabashedly eclectic, welcoming --indeed, even seeking out-- effective concepts and approaches wherever they may arise. A notion like stereotype vulnerability is certainly worthy of consideration as the basis for one among many tools these programs have shown are required for meeting the challenges they face. But the true practical significance of the concept remains to be demonstrated.

References

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

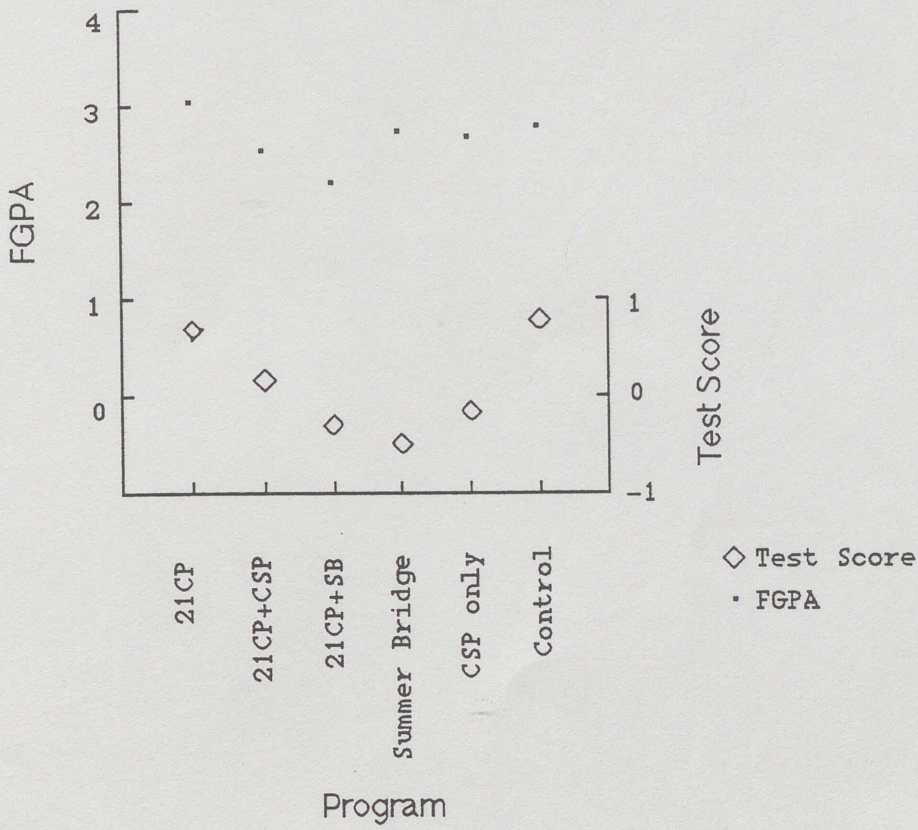
Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. American Psychologist, 52 (6), 613-629.

List of figure captions.

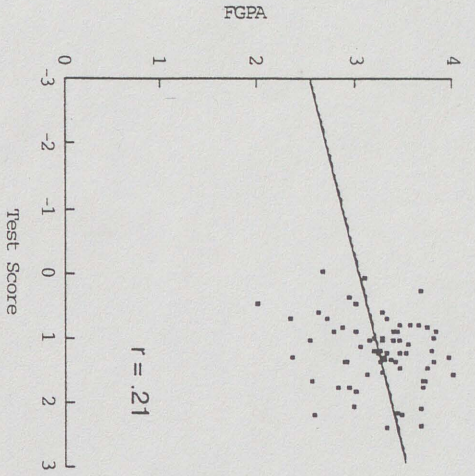
Figure 1. Mean FGPA and standardized test scores for black college students.

Figure 2. Regression of FGPA on standardized test score for each of six groups of college students.

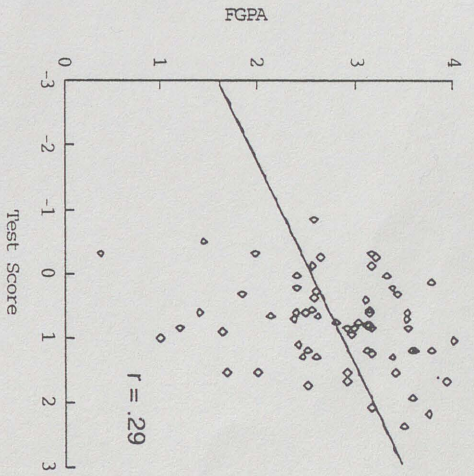
Figure 1. Mean FGPA and standardized test scores for black college students in selected programs.



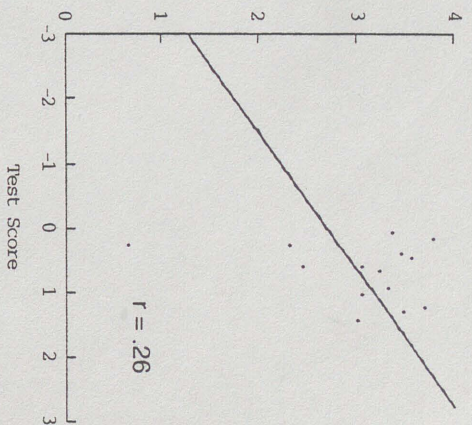
White 21CP (n=70)



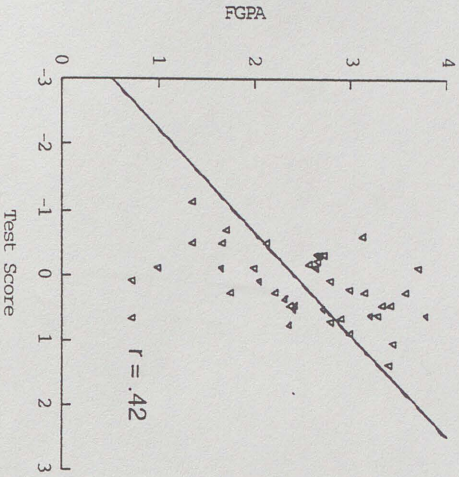
Black Control (n=64)



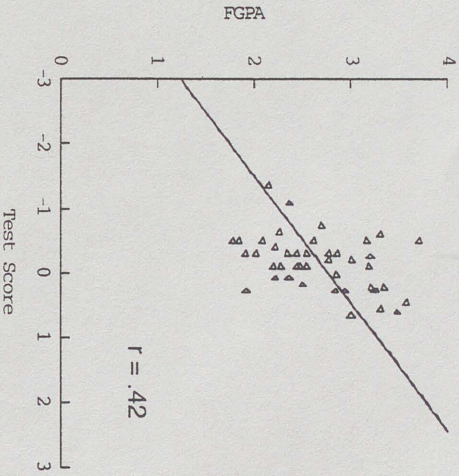
Black 21CP (n=14)



Black 21CP+CSP (n=42)



Black CSP (n=43)



Black Summer Bridge (n=44)

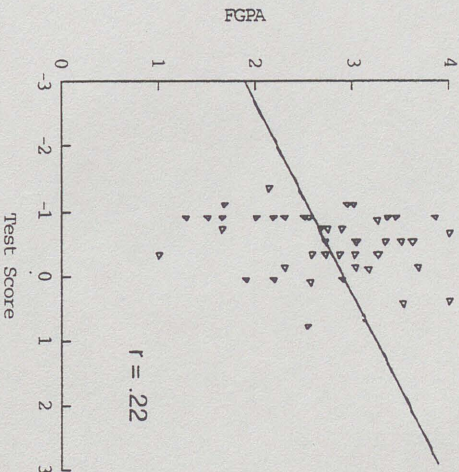


Figure 2. Regression of FGPA on standardized test score for each of six groups of black college students.