

# Racial Differences in Test Preparation Strategies

*A comment on Claudia Buchmann, Dennis Condron and Vincent Roscigno's "Shadow Education, American Style: Test Preparation, the SAT and College Enrollment"*

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## Racial Differences in Test Preparation Strategies

Claudia Buchmann, Dennis Condron and Vincent Roscigno's study, titled "Shadow Education, American Style: Test Preparation, the SAT and College Enrollment," demonstrates that vigorous use of expensive test preparation tools, such as private classes and tutors, significantly boosts scores on standardized exams such as the SAT or ACT. This preparation, in turn, promotes access to more selective institutions. Because access to preparation varies according to social class, it turned out to be a key lever in the social transmission of privilege. One of the noteworthy findings in the BCR study is the racial and ethnic differences in the use of test preparation: blacks and Hispanics are more likely than whites from comparable backgrounds to utilize test preparation. The black-white gap is especially pronounced in the use of high school courses, private courses and private tutors. The Hispanic-white gap is more modest, and is limited to the use of private tutors.

The black-white gap in test prep is surprising given blacks' lower levels of social and financial capital and the well-documented test score gap. In 2006, for example, the black-white test score gap was about 200 points, a decline from a gap of 250 points three decades ago (The College Board 2006). Consequently, in this comment, I wish to delve into the black-white variation in test preparation strategies in order to better understand its patterns and consider its relation to the edge black applicants receive in admissions at selective colleges and universities with affirmative action policies. My main objective is to outline a theoretical framework that will shed light on the racial and ethnic disparity in test preparation. In the interest of parsimony, I focus here on the pronounced black-white differences, yet the data indicates that the patterns for Hispanics and Asians are similar to those for blacks and whites, respectively, which strengthens the generalizability and relevance of the proposed framework.

The analytical strategy I use conforms to the BCR study in terms of the dataset, multiple imputation, analytical weight, and sample.<sup>1</sup> Like BCR I use an indicator of highest-level test preparation but also constructed a variable that counts multiple test preparation activities. Unlike BCR, a distinction is made between private (private courses and tutors) and public (books, videos, software and high school courses) types of test preparation. This distinction is theoretically important because private preparation is not only more effective

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**Table 1: Test Preparation by Race**

	Restricted Sample - Test Takes <sup>1</sup>		Full Sample - All High School Graduates	
	White	Black	White	Black
<b>Use of Test Preparation</b>				
Total	68.0	83.8	57.6	73.2
N of test preparation activities (users)	1.62	2.02	1.64	2.09
<b>Highest-Level Test Preparation</b>				
No preparation	32.0	16.2	42.5	26.8
Books/ Videos/ Software	40.4	37.3	34.1	31.1
High school course	13.6	22.6	11.4	19.9
Private course	8.9	11.3	7.4	10.1
Private tutor	5.3	12.8	5.0	12.5
N	5,764	801	7,741	1,092

Source: NELS Data

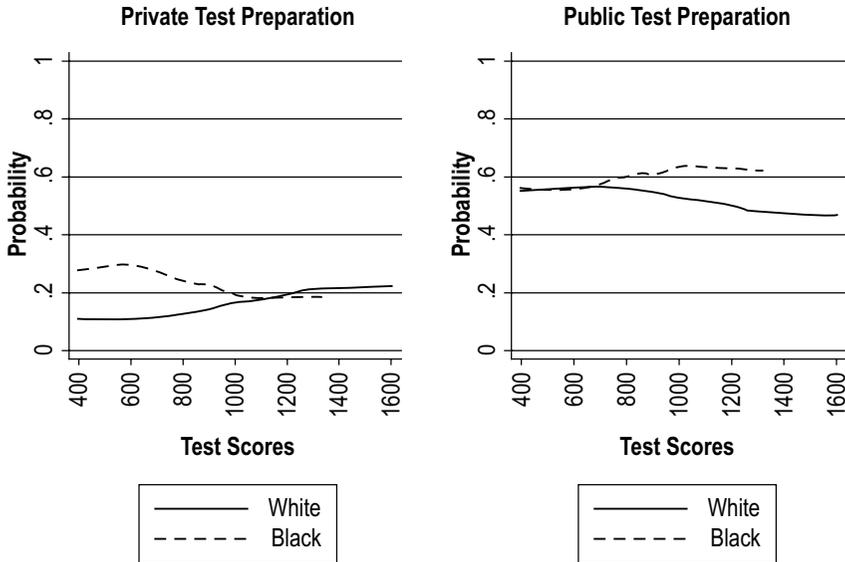
Notes: The sample is restricted to respondents who, in their senior year of high school, reported that they either already took or were planning to take the SAT or ACT.

in raising test scores but also more expensive than publicly available resources. Private preparation explicitly captures the notion of shadow education.

### Racial Differences in Test Preparation

BCR demonstrated an advantage for blacks in test preparation, conditional on an array of background characteristics. The results in Table 1 show that this advantage exists even when we do not control for family and academic background. Blacks used test preparation more than all other groups: 84 percent of blacks used at least one form of preparation compared to only 68 percent of whites, and were also more likely than whites to be engaged in multiple test preparation activities. The black advantage is notable in regard to all forms of test preparation except in the use of self-preparation materials such as books, videos and software. The black-white gap, therefore, is mostly incurred by the utilization of private preparation (private courses and tutors). In that light the gap is even more fascinating because blacks are generally a more financially disadvantaged population than whites. This puzzle raises questions about the financial resources, educational expectations, and commitment to preparation and higher education of black high school students.

Before proceeding it is important to assess whether the black advantage is an artifact that results from the use of a sample of test takers who either already took a standardized exam or were planning to do so, which is the case in both the current and the BCR study. These samples naturally select for more ambitious students with relatively high academic achievements, aspirations and motivation. Given the group differences in educational attainment, it is possible that the blacks in the restricted sample account for a more selective group of students than do the whites, which may explain their greater utilization of test preparation. However,

**Figure 1. Type of Test Preparation – By Test Scores**

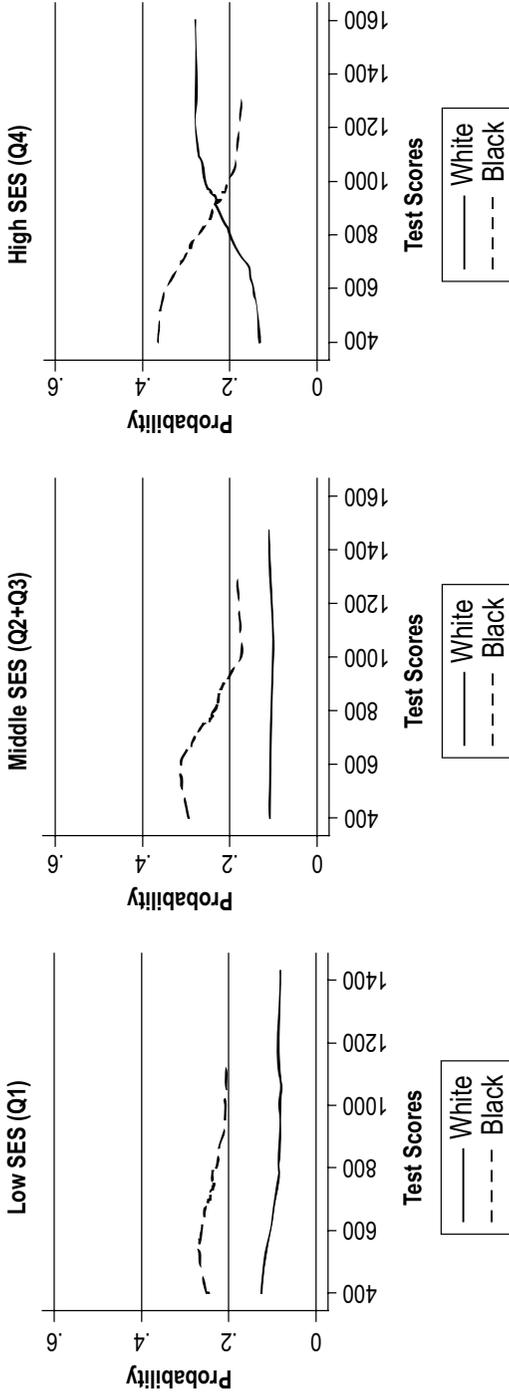
the evidence in Table 1 indicates that the gap also exists among all NELS high school graduates.<sup>2</sup> Furthermore, given that the black-white gap is quite substantial, follows the same pattern in both samples, and is also found using a different dataset (Devine-Eller 2004), it is reasonable to assume that the selection process is similar for blacks and whites and is therefore not the main underlying cause of the race differences in test preparation.

### Test Preparation and Test Scores

Given the persistent racial gaps in student test scores, the relationship between test scores and the types of preparation chosen by students is critical in conceptualizing the racial differences in preparation strategies. On the whole, the black-white preparation gap is maintained throughout all test score levels.<sup>3</sup> A closer look at the use of private vs. public test prep, however, reveals considerable racial disparities in preparation strategies. Figure 1 shows that for whites, the use of private test prep rises monotonically with the level of their scores. However, the opposite pattern is observed for blacks: students with low test scores utilize private preparation more than those with high scores. In other words, the black advantage in the utilization of private preparation diminishes as test scores rise. An assessment of the relationship between student test scores and public types of preparation reveals yet another pattern. For whites, the use of high school courses and self-preparation declines with increasing test scores, while for blacks it increases.

From this analysis, an interesting picture of the different test preparation strategies employed by whites and blacks begins to emerge. Among low-scoring students, both groups make similar use of public types of preparation, yet blacks rely

Figure 2. Private Test Preparation – By Test Scores and SES



on private courses and tutors more so than whites. Among high-scoring students, white students rely on private preparation more than their black counterparts, while blacks use public preparation more than whites. The black-white gap in private preparation persists in multivariate analyses (accounting for the non-linear pattern of test preparation by test scores and including an array of control variables),<sup>4</sup> while the parallel gap in the use of public modes of preparation is embedded in differences in background characteristics (results not shown).

The next intriguing question, given that private preparation is the more costly option, is whether the black-white gap in the use of private preparation exists within all socio-economic strata. Figure 2 depicts the relationship between race, test scores and private preparation by quartiles of socio-economic status. Evidently, the black advantage among low-scoring students exists within all SES groups. Further multivariate analyses (not shown here) reveal that these gaps are statistically significant, everything else being equal.<sup>5</sup> Yet the results corroborate the visual depiction in Figure 2, by showing that the magnitude of the race gap surges with rising SES. Not surprisingly, the black advantage in private preparation is most prominent among low-scoring students from the top socioeconomic quartile.<sup>6</sup>

Taken together, the race gap in test preparation mostly stems from the racial differences in the behavior of students with affluent parents, who are most likely college educated. Because BCR's findings highlight the class gap in test preparation, it is not surprising that the race gap in preparation is most glaring among the privileged. This analysis helps resolve the financial paradox associated with the extensive use of private test prep by blacks, but does not account for the different preparation strategies utilized by blacks and whites.

In order to obtain more insight on the race differences in test preparation, I also examine the roles of educational expectations and the normative influence of parents (discussing with their offspring their test scores and college plans) on a student's likelihood to engage in private test prep. Adding controls for both substantially shrinks the magnitude of the race gap in private preparation, although it does not eliminate it. The drop in the black advantage is expected given the superior educational aspirations and expectations of black and Hispanic high school students (Kao and Tienda 1998). Yet, this is a theoretically important finding because scholarship suggests that the black advantage in aspirations does not always translate into concrete actions and educational attainment (Kao and Tienda 1998). Moreover, the positive relation of these variables to the use of private test preparation indicates that both higher educational expectations and parental guidance fortify preparatory commitment (Morgan 2005).

Nevertheless, investment in test preparation is shaped not only by a student's social context and individual capacities and interests, but also by exogenous factors, particularly the perceived market-level costs and benefits of pursuing higher education (Morgan 2005). I argue that the racial disparity in the structure of educational opportunity, as a result of affirmative action policies at selective colleges and universi-

ties, is key to understanding strategic decisions about test preparation. That is, it is plausible that the preferential admissions treatment for under-represented minorities at elite institutions raises the educational expectations of black high school students (and their parents), which consequently both fuels their *motivation* to improve test scores and shapes their test preparation *strategies*. Simply put, privileged black students with low scores may envision themselves attending college more than their white counterparts do because of the edge they receive in admissions. Because this preference increases the payoff of any test score improvement, it may encourage black students to put more effort into preparing for college. Given the importance of test scores in admission decisions (Alon and Tienda 2007), test preparation is a vital component of such a preparatory commitment.

### The Incentive: An Edge in Admission at Elite Institutions

Ample evidence demonstrates the black advantage in admissions: black students are more likely than their white counterparts to be admitted to elite schools (Alon and Tienda 2005, 2007; Bowen and Bok 1998; Bowen et al. 2005; Espenshade and Radford 2009; Grodsky 2007; Massey et al. 2003). To fully appreciate how such a window of opportunity can enhance black high school students' commitment to higher education and shape their test preparation strategy, I draw on the NELS sample of high school seniors and estimate the extent of the edge that the black students receive in admission to elite colleges compared to whites.

As expected, black students were admitted to very selective institutions (post-secondary schools for which the median SAT score exceeds 1050) with lower scores than were whites. Examining the racial gaps at the lower end of the test score distributions is illuminating: 10 percent of black students enrolled at very selective institutions had test scores below 710, while the respective figure for whites is 860.<sup>7</sup> Juxtaposing the two distributions provides an approximation of the edge blacks receive in admissions: whites in the NELS cohort needed about 150 to 175 additional points to be admitted to very selective schools. This is probably an underestimation of the actual gap in test scores because other estimates of the gap (based on administrative records of students attending selective institutions) are in the ballpark of 170 to 200 points (Bowen and Bok 1998; Bowen et al. 2005; Espenshade and Radford 2009). Even more telling is the percentage of NELS white and black high school students who found their way to very selective colleges and universities according to test score band: among black seniors with scores from 800 to 900, 17 percent eventually enrolled at very selective schools compared to only 7 percent of whites. One in three black seniors with scores of 900-1,000 enrolled at very selective schools, compared to only one in seven white students.

Additional analyses of students *within* upper-tier institutions used the College and Beyond database, which contains the individual records of all undergraduate students who enrolled in the fall of 1989 at one of 29 academically selective colleges and universities (Bowen and Bok 1998). These reveal that within every test score band

black students attend more selective schools than comparable whites.<sup>8</sup> Obviously, the variations in admission regimes create racial differences in the structure of postsecondary opportunity for students within every band of test scores. These disparities affect students' decisions about whether and how much they should aim to improve their test scores, which in turn influence their choice of preparation strategy.

### **Affirmative Action Policy and Racial Differences in Test Preparation Strategies**

By lowering the threshold for admission to elite schools, affirmative action broadens black students' college choices by putting more selective institutions into the mix (Manski and Wise 1983). Such an opportunity can shape the test preparation behavior that black students undertake by boosting their aspirations for a type of education that would otherwise not be within their reach. Indeed, several recent studies demonstrate that eliminating affirmative action resulted in a decline in black and Hispanic students' *application* rates (Long 2004; Card and Krueger 2005; Brown and Hirschman 2006). Thus, the effects of affirmative action programs begin long before admissions decisions are made by cultivating the aspirations, ambitions and behavior of black and Hispanic high school students. The promise of affirmative action likely emboldens them to make concrete plans for higher education, and thereby motivates them to improve their test scores and become more engaged with test preparation than their white counterparts.

The edge in admissions and the opportunity fueled by affirmative action also influence students' strategies for test preparation. Presumably, students devise their test preparation strategy after they weigh the known costs of preparation against its assumed benefits. In terms of costs, the high expense of a private course or a tutor relative to the more modest costs of public preparation is considered in light of the beliefs held by students and parents about the effectiveness of these methods. The admissions payoff of an improved test score also affects whether and how a student prepares for tests. Obviously, this investment is more valuable when stakes in the admissions market are high, yet the different admission thresholds imply that for blacks, the stakes drop with increasing test scores while the opposite is true for whites. For low-scoring black students, for example, test score improvements can open the door to selective institutions, which drastically alters their college choices. High-scoring black students, on the other hand, are certain to be beneficiaries of affirmative action policies anyway; improving their test scores only allows them to add a *more* selective college to their lists. As a result, they are less motivated in their pursuit of private test preparation.

Among blacks, the stakes are particularly high among those with test scores *below* a certain threshold of admissibility to selective and very selective institutions. For students who expect to have marginal scores (650 to 800) on their standardized exams, education at a very selective school is just within reach, and the potential rewards are immense. If admitted, these students will not only benefit from a superior educational experience and improved labor market prospects, but they will also

reap a more concrete and immediate payoff: financial aid. This is because the more selective the school, the greater its need for diversity and the larger its endowment and resources to provide a better aid offering. Yet in order for blacks with marginal scores to exploit this competitive advantage, they must improve their test scores. In sum, affirmative action, by setting a low threshold of admissibility for blacks, creates a hefty incentive for those with scores just below this threshold to improve them, and amplifies their returns on expensive preparation. Accordingly, they take private courses or hire private tutors because they believe that these methods are the most effective for boosting test scores. Having educated and supportive parents with financial means further encourages this course of action.

My argument can be conceptualized using Morgan's (2005) commitment-based model of educational attainment. Privileged black students with marginal test scores demonstrate high levels of preparatory commitment, especially private prep. This is a direct function of their strong commitment to higher education, fashioned by the edge in admissions to elite institutions, the recognition that it is in their best interest, both academically and financially, to attend more selective colleges, and the influence of parents and peers. At first glance it seems that the disproportionate use of private test preparation among black students, especially the privileged ones with scores much lower than the threshold of admissibility, cannot be reconciled with our explanation; if the gains from test preparation are as modest as reported by BCR, their chances to benefit directly from preferential treatment are slim. Yet their behavior may still be inspired by affirmative action because it is possible that preparation can improve scores more substantially for low-scoring than for high-scoring students, that the gains from using multiple forms of test preparation are additive and therefore contribute to considerable growth in scores, or at the very least, that these youth *believe* that private modes of preparation yield sizeable gains. These beliefs in particular are prevalent among youth, and are promoted by the extensive advertising and guarantees made by national companies offering test preparation, such as the Princeton Review's pledge that "our SAT Ultimate Classroom students average a score improvement of 255 points." (Inside Higher Education 2010) In sum, the promise generated by affirmative action may be just as relevant to this population as to the one with scores just below this threshold.

However, as a black student's expected score on a standardized exam increases, the returns on private test prep decrease. With a score above 800 or 900, admission to a very selective institution is certainly not guaranteed, but the odds are high. Preparation is important, but *private* preparation becomes less critical. Weighing the costs and benefits of different modes of test preparation, blacks at that level may decide that multiple self-preparation activities along with a high school prep class are adequate to yield the gains necessary to add an even more selective school to their college choices. To be sure, in the high school class of 1992, 70 percent of blacks with test scores above 800 chose this course of action.

Evidently, they demonstrated high levels of preparatory commitment, but they adjusted their preparation strategy to the structure of opportunity.

Additional analyses (results not shown) support this claim by revealing that among blacks, those who eventually matriculated at very selective schools (median SAT score of above 1050) took advantage of private prep activities *less* than those who ended up at less selective institutions (median SAT score of 900 to 1050). Overall, the findings suggest that for the highest scoring black students, the use of more modest preparation tools was probably sufficient to get them into very selective schools.

For whites the situation is completely different. Their likelihood of admission to a very selective school is low even with a score of 900 or 1000. This may explain the low levels of test preparation among whites with low scores, and why even those from high socio-economic backgrounds are so lethargic when it comes to investing in preparation. The stakes rise, however, with increasing test scores and accordingly, so do the returns on test preparation. Indeed, among whites the use of private test preparation and of multiple types of preparation increases with the selectivity of their college destination, and surges in the transition from selective to very selective institutions.<sup>9</sup>

The finding that whites and Asians who attend very selective schools used test preparation more than those at less selective institutions (while the *opposite* is true for blacks and Hispanics) allows for an interpretation of another important puzzle in the BCR findings: the positive effect of test preparation on enrollment in selective and highly selective institutions, above and beyond the direct effect of test scores on college destination. However, additional multivariate analysis I have conducted reveals that this positive effect is limited to whites and Asians. Thus the marginal effect of test prep on enrollment at selective schools simply reflects the utilization patterns of test preparation of these two groups rather than a causal relationship between unobserved attributes and the admission decision of selective institutions, as BCR speculated.

## Conclusion

In this comment, I advance the notion that race-sensitive admissions, by facilitating opportunities for under-represented minorities to attend elite schools, cultivates minorities' postsecondary aspirations and expectations, and boosts their motivation to improve their position in the admissions game. Privileged minority youth and their affluent, college-educated parents are more likely to appreciate the implications of education at more selective schools for enhanced labor market and social mobility prospects, be better informed about the importance of test scores in admission decisions, and have the financial means to invest in effective and expensive preparation tools.

The structure of opportunity is only one aspect that students consider in determining their forward-looking course of action (Morgan 2005). Yet when ac-

counting for the racial and ethnic differences in college plans and preparation, it is evident that affirmative action is not a trivial force. As the U.S. population becomes more diverse, race-sensitive admissions must be treated as an integral and important element in the structural context of any comprehensive theory about commitment to higher education. For that we must first get a better grasp on the implications of such policies, not only in terms of admission likelihood and college outcomes (an area in which the research has made considerable strides in recent years), but also in regard to how they mold the motivations, aspirations, behavior and preparatory commitments of high school students.

The perception of youth about their educational opportunity structure does not get enough attention in models of expectations and attainment. The evidence in this commentary implies that high school students do respond to what they know or assume about the opportunities awaiting them in higher education. Integrating this information with other inputs, they devise an appropriate course of action which positions them to take advantage of these opportunities.<sup>10</sup> Moreover, the weight of the structure of opportunity in this decision process has increased in recent decades as information about admission policies and institutional thresholds of admissibility has become easily available on the internet. Today's students are more aware of their options and have more accurate expectations of their academic opportunities after high school. They, along with their parents, are also more conscious of the stratification within the higher education system and the rising importance of test scores in admission decisions (Alon 2009). All this has enhanced the relevance of the structure of opportunity in determining students' preparatory commitments for higher educational attainment.

## Notes

1. I utilize the National Education Longitudinal Survey, which follows a cohort that graduated from high school in 1992. Like the BCR study, the sample is restricted to respondents who, in their senior year of high school, reported that they either already took or were planning to take the SAT or ACT. All the analyses are weighted with the longitudinal base year to third follow-up panel weight. Finally, I replaced the missing data using multiple imputation with Schafer's MI software NORM for incomplete multivariate data (Schafer 1999). All empirical estimates are based on five versions of complete data sets.
2. It is possible that the blacks in the sample of high school graduates may comprise a more selective group than whites because of group differences in high school dropout rates. Yet, given that the test preparation questions were asked of students in the 12<sup>th</sup> grade, it is impossible to assess whether there were race differences in the selection process.
3. In order to examine the relationship between test scores and the race gap in types of test preparation, I use the actual test scores as an approximation for a student's placement in the unknown pre-prep test score distribution. Only about half of the students in the test-taker sample reported taking the pre-SAT, and even for them we cannot know whether this preceded test preparation. The temporal order of events is

even more blurred for students who took the test several times. Given that the gains from test preparation are relatively modest (as reported by BCR), this is a reasonable strategy for assessing how students from dissimilar categories of pre-prep test scores draw on different strategies for test preparation. All ACT scores were converted to the SAT score metric.

4. The controls are: high school class rank, high school type, gender, family socioeconomic status, geographic region and urbanicity of place of residence.
5. Same controls as described in footnote 4.
6. Worthy of note is that the black advantage in the utilization of public test preparation among high-scoring students, depicted in Figure 1, is most noticeable among privileged students (yet it is statistically insignificant).
7. The 25<sup>th</sup> percentile for blacks is 810, while for whites it is 980.
8. Among the C&B students with scores of 800-900, 23 percent of blacks enrolled at a highly selective school (median SAT from 1150 to 1250) compared to only 13 percent of comparable whites. Likewise, among those in the 900-1000 band, 41 percent of blacks, but only 20 percent of whites attended a highly selective school. In the 1100-1200 score band, 29 percent of blacks found their way into the most selective schools (above 1250), while only 9 percent of whites managed to do so.
9. White students attending very selective schools used the highest number of preparation activities: one in three engaged in private preparation compared to only 13 percent of students at selective schools.
10. The behavior of Asian students corroborates this notion. Asian applicants typically need higher test scores to compete with white students in admission to elite schools (Espenshade 2009). Given their high level of commitment to higher education (Kao 1995; Sue and Okazaki 1990), it is not surprising that they are extremely motivated to improve their test scores in order to have the same options as whites. Their strategies for test preparation mimic those of whites, yet high-scoring Asian students rely on private preparation more than any other group. Among NELS students attending very selective institutions, 37 percent of Asians use a private tutor or a course compared to 28 percent of whites.

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