EXECUTIVE SUMMARY

UC and the SAT: Predictive Validity and Differential Impact of the SAT I and SAT II at the University of California

The University of California has long required both aptitude and achievement tests in the battery of standardized tests it requires for admission. Aptitude tests, exemplified by the SAT I, are intended to assess students’ capacity for future learning, whereas achievement tests, exemplified by the SAT II subject tests, are designed to measure students’ present mastery of academic subjects required for college-level work. As one of the few higher educational institutions in the nation to require both kinds of tests, UC is uniquely positioned to assess their relative utility in predicting success in college. This study examined the relationship between students’ SAT scores and academic outcomes based on the records of 77,893 freshmen who entered UC between Fall 1996 and Fall 1999. Key findings were as follows:

**Predictive Validity** The SAT II achievement tests were consistently better predictors than the SAT I of students’ academic performance at UC, as measured by freshman grade-point average (UCGPA). In combination with high-school grade-point average (HSGPA), SAT II achievement test scores accounted for 22.2% of the variance in freshman grades for the UC sample, compared to 20.8% when SAT I scores were combined with HSGPA in the prediction. The additional increment in predictive power provided by the SAT II was modest but statistically significant and consistent across academic disciplines, year of enrollment at UC, and quality of a student’s high school. The predictive superiority of the SAT II was also evident across all UC campuses except UC Riverside, where the SAT I predicted slightly better than the SAT II; at all other campuses, the SAT II was the stronger predictor of success at UC, and this was especially true at those campuses that are most selective in their admissions requirements, including UC Berkeley, Los Angeles and San Diego.

In addition, after students’ SAT II scores and HSGPAs were taken into account, the SAT I added almost no new information to the prediction. Whereas SAT II scores combined with HSGPA accounted for 22.2% of the variance in UCGPA, adding SAT I scores to the analysis increased the predicted variance to only 22.3%, an increase of just 0.1 of a percentage point. (By contrast, adding SAT II scores to the prediction, after SAT I scores and HSGPA were considered, increased the predicted variance by 1.5 percentage points, from 20.8% to 22.3%.) Indeed, in two of the four years studied (1997 and 1998), SAT I scores added nothing to the prediction of UCGPA. In sum, not only was the SAT II the superior predictor, but also SAT I scores added little information to the prediction, once students’ SAT II scores and HSGPAs were known.

**Conditioning Effects of Socioeconomic Variables** Two measures of socioeconomic status (SES) were included in the analysis in order to assess their conditioning effects on the predictive validity of the SAT I and SAT II: Family income and parents’ education. Including these SES variables along with SAT I scores, SAT II scores and HSGPA in the
analysis increased the predicted variance in UCGPA to 22.8%. When SAT I scores were then removed, however, the predicted variance remained at 22.8%. (By contrast, when SAT II scores were removed from the analysis, the predicted variance declined to 21.2%.) After controlling for socioeconomic background, in short, SAT I scores were redundant and did not add to the prediction of UC freshman grades beyond what was already predicted by SAT II scores and HSGPA.

**Differential Impact of the SAT I and SAT II by Race/Ethnicity** Finally, the study examined differences in racial/ethnic group performance on three SAT composite scores: (1) SAT I verbal plus math (SAT I V+M), (2) SAT II Writing plus Mathematics (SAT II W+M), and (3) SAT II Writing plus Math plus the SAT II Third Subject Test (SAT II W+M+3rd). Because UC policy allows students to choose which of the SAT II Third Subject Tests to take, and because many Chicano/Latino and Asian American students opt to take the SAT II language tests, the study sought to isolate the effect of the SAT II Third Test for different racial/ethnic groups.

While there were large differences between different racial/ethnic groups in their performance on both the SAT I and SAT II, within-group differences on the various SAT composites were relatively small: Students from each racial/ethnic group performed about as well, on average, on the SAT II as they did on the SAT I, with only minor differences. Thus, African American students averaged -.71 standard deviations below other students on the SAT I V+M, -.67 standard deviations on the SAT II W+M, and -.70 standard deviations on the SAT II W+M+3rd Test. Asian Americans averaged +.12 standard deviations above other students on the SAT I V+M, +.13 on the SAT II W+M, and +.15 on the SAT II W+M+3rd Test, while White students averaged +.18, +.16, and +.08 on the three test composites, respectively. The largest difference was among Chicano/Latino students, who averaged -.66 standard deviations below other students on the SAT I V+M, -.62 on the SAT II W+M, and -.34 standard deviations on the SAT II W+M+3rd Test. The better average score for Chicano/Latinos on the SAT II composite including the Third Test undoubtedly reflected the influence of the language tests. The improvement in the Chicano/Latino average scores when the Third Test was included was about one-third of one standard deviation, or about 64 points on a 1600-point scale.

Test-score differences of this magnitude are too small to have any substantial effect on the demographic composition of the pool of UC-eligible and admitted students. Simulation data, as well as actual experience this year with UC’s new Eligibility Index, indicated that including the Third Test within the SAT II composite would increase the proportion of Chicano/Latino students by less than a percentage point in either the overall UC-eligibility pool or in the pool of students admitted at the most selective UC campuses. Without the Third Test, the differential impact of the SAT I and SAT II was even smaller, for all racial/ethnic groups. In sum, the data indicated that the demographic impact of the SAT II achievement tests, with or without the Third Subject Test, was very similar to that of the SAT I.