



***QUESTION: How is Scholastic Aptitude Test (SAT) performance related to the postsecondary enrollment patterns of respondents to the 2006 Austin Independent School District (AISD) High School Exit Survey?***

***RESPONSE:*** Student data from several sources were linked to examine the relationship between SAT performance and the postsecondary enrollment outcomes of graduates who responded to the 2006 AISD High School Exit Survey. These data included student demographic information for the Class of 2006, SAT results from the College Board, results from the AISD 2006 High School Exit Survey, and postsecondary enrollment data for the Class of 2006. Postsecondary outcome data for the Class of 2006 were compiled from two sources: the National Student Clearinghouse (NSC) and the Texas Higher Education Coordinating Board (THECB).

### **KEY FINDINGS**

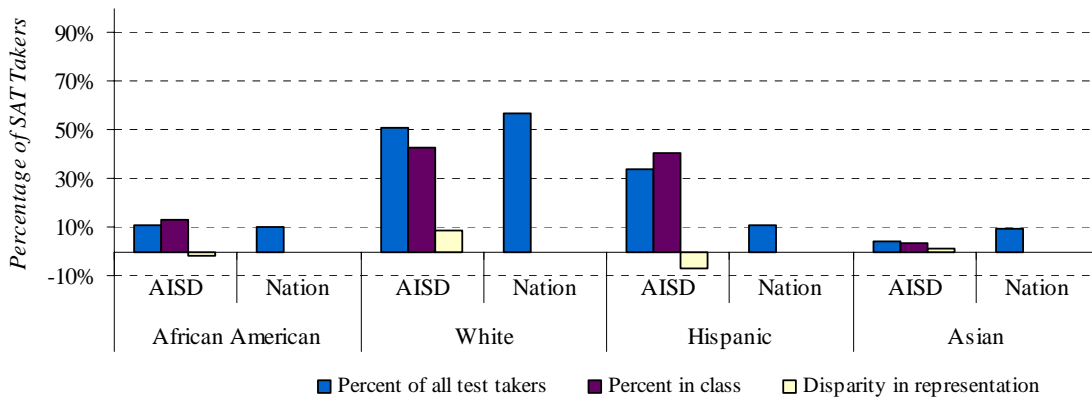
- Fewer African American and Hispanic students took the SAT than was expected based on the ethnic makeup of the Class of 2006.
- Twenty-five percent of the AISD Class of 2006 who took the SAT were first-generation college students.
- Graduates who intended to borrow money to finance their postsecondary education scored lower on the verbal and mathematics sections of the SAT than did students who had no plans for borrowing. Students who did not know whether they were going to borrow money performed more poorly than did either those who did intend to borrow and those who did not.
- The decision to enroll in any type of postsecondary institution was positively related to SAT score. Enrollment rates peaked at 91% for graduates scoring between 1601 and 1700 on the SAT. Beyond a score of 1800, postsecondary enrollment rates ranged between 85% and 76% across SAT classifications.
- Independent of how well they performed on the SAT, Hispanic graduates from the AISD Class of 2006 were less likely to enroll in any type postsecondary institution than were their White, African American, and Asian peers. This relationship persisted even when Hispanic graduates were compared with White and African American students with similar economic circumstances.

### **STUDENT BACKGROUND**

Recent findings released by the College Board (2007) indicated that although the characteristics of students taking the SAT are growing more diverse, significant disparities remain across income levels, ethnicity, and family educational background. The 2006 AISD High School Exit Survey provided an opportunity to explore how closely 2006 AISD graduates resemble their national peers. In addition, a thorough description of 2006 graduates taking the SAT helps to contextualize the analysis presented here of the association between SAT scores and postsecondary enrollment patterns.

Figure 1 presents descriptive information comparing AISD SAT test takers from the Class of 2006 with test takers across the nation. Given the high response rate (86%) to the 2006 AISD High School Exit Survey, survey participation by ethnic group was used for an approximation of the ethnic composition of the AISD Class of 2006. The ethnic characteristics of students taking the SAT in AISD were similar to those of students taking the SAT across the nation. The data indicated that both African American and Hispanic students were, compared with total district enrollment, underrepresented among SAT test takers (1.9 and 7.2 percentage points, respectively), while White students were overrepresented (8.5 percentage points).

Figure 1: Ethnic Profile of SAT Test Takers for the Class of 2006, by US and AISD

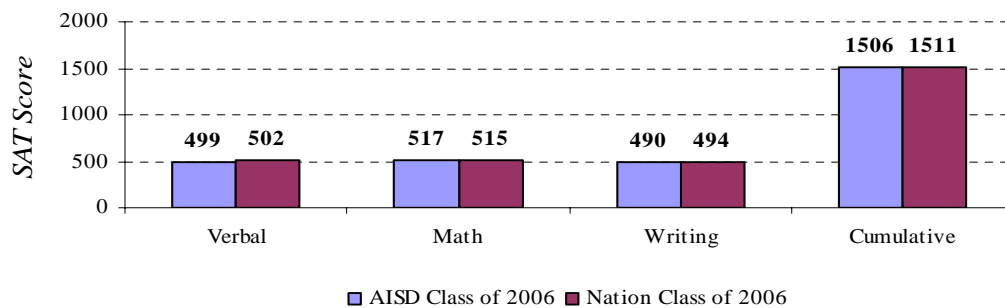


Sources: The College Board, AISD student records (SASI), prepared by the Department of Program Evaluation (DPE), September 2007

Note: The data in the text boxes indicate the disparity between the proportion of SAT test takers and the proportion of respondents from the 2006 AISD High School Exit Survey.

Figure 2 presents the mean SAT scores by subject area for the AISD Class of 2006 and their national peers. Although scores on the verbal and writing tests of graduates from the AISD Class of 2006 trailed scores for their national counterparts, AISD 2006 graduates performed better than did test takers from across the nation on the math test (517 to 515, respectively).

Figure 2: SAT Scores by Subject Area for the Class of 2006, by US and AISD

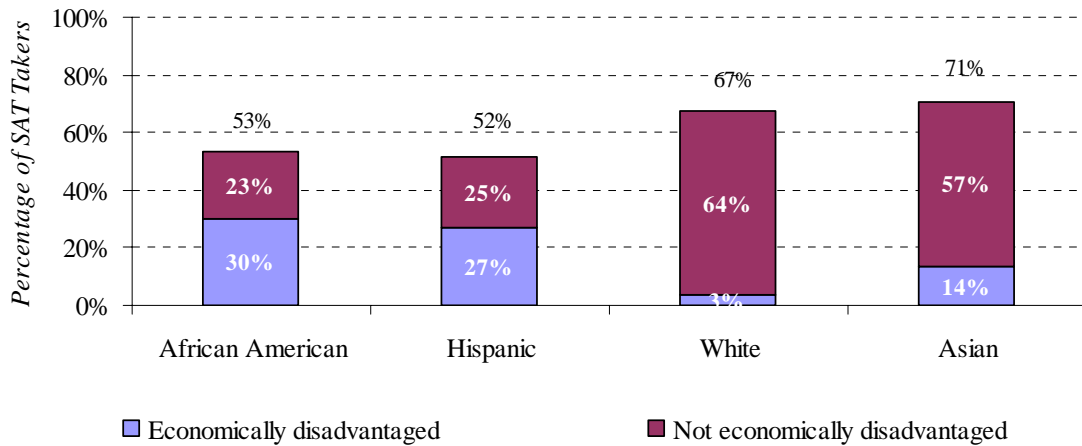


Sources: The College Board, prepared by DPE, September 2007

Note: The maximum possible score for each subject test is 800.

To further examine the characteristics of SAT test takers, SAT participation rates were calculated as a proportion of students within each ethnic group in the district, as opposed to the total number of SAT test takers (Figure 3). In addition, test takers within each ethnic group were classified as either economically disadvantaged or not economically disadvantaged. Although the proportions of African American and of Hispanic graduates who took the SAT were similar (53% and 52%, respectively), both groups were less likely to take the exam than were White graduates (67%) and Asian graduates (71%). In addition, a larger proportion of African American and Hispanic test takers were categorized as economically disadvantaged (30% and 27%, respectively) than were White (3%) and Asian (14%) test takers.

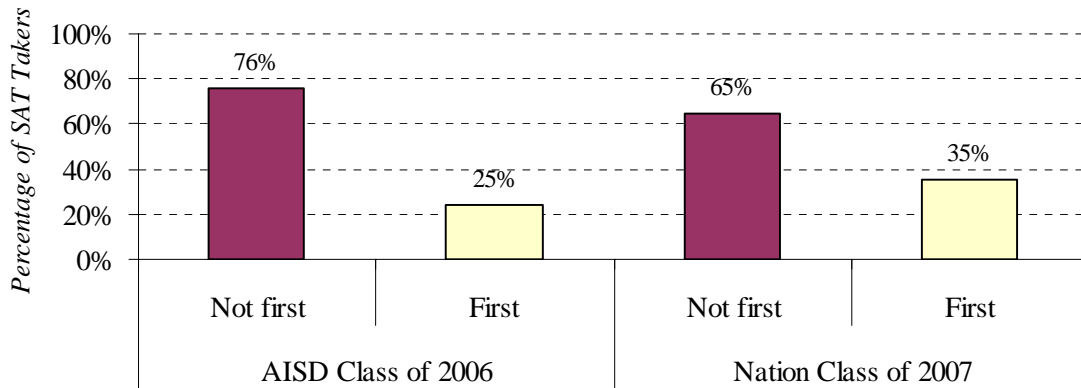
Figure 3: Percentage of Students From the AISD High School Exit Survey Taking the SAT, by Ethnic Group



Sources: The College Board, AISD student records (SASI), prepared by DPE, September 2007

For the AISD Class of 2006, one quarter of the SAT test takers would become the first in their family to attend college, according to responses on the 2006 High School Exit Survey. A comparison with national data revealed that AISD had a lower percentage of potential first-time college goers taking the SAT test than did the rest of the nation.

Figure 4: Percentage of SAT Takers Who Were First-Generation College Students, Within AISD and the Nation



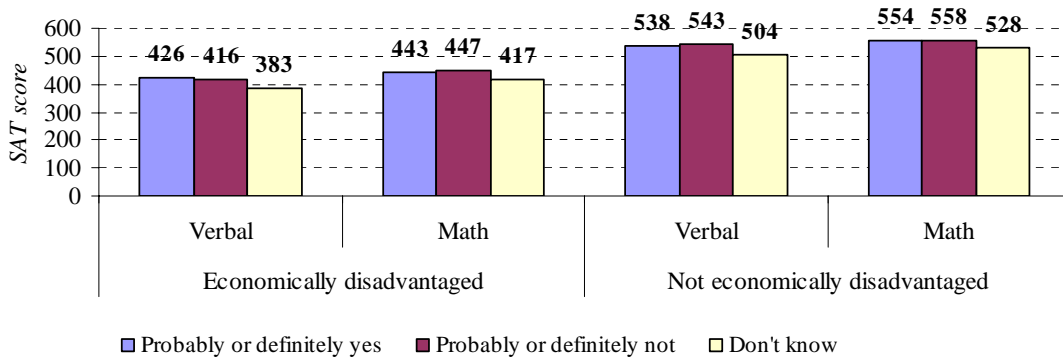
Sources: The College Board, AISD student records (SASI), 2006 AISD High School Exit Survey, prepared by DPE, September 2007

Note: Due to the lack of comparable national-level data for the same year, results from the nationwide Class of 2007 were used in this comparison.

The College Board (2007) released findings for the nation’s Class of 2007 that revealed a disparity in SAT scores between students who were intending to apply for financial aid and those who were not. Using data from the 2006 AISD High School Exit Survey and the College Board, SAT test performance was examined by the graduates’ intention to apply for financial assistance to fund their postsecondary education (Figure 5). Furthermore, respondents were classified according to their economic status. Only respondents who indicated they planned to enroll in a postsecondary institution were included in the analysis.

From Figure 5, it appears as though most of the variation in SAT math and verbal performance was captured by the graduates’ economic status. Although differences in scores appeared with respect to graduates’ intentions to borrow federal monies for postsecondary education expenses, the largest disparities existed across graduates’ economic statuses. Within each economic classification, the mean verbal and math SAT scores were lowest for students who expressed uncertainty about how they planned to fund their postsecondary education.

Figure 5: Mean Verbal and Math SAT Scores by Intention to Borrow Money for Postsecondary Education, AISD Class of 2006



Sources: The College Board, AISD student records (SASI), 2006 AISD High School Exit Survey, prepared by DPE, September 2007

### POSTSECONDARY OUTCOMES

Scholastic Aptitude Test (SAT) results from the College Board were linked to 2006 graduating seniors' postsecondary enrollment data to examine the relationship between SAT test performance and postsecondary enrollment. Students within the Class of 2006 who had available SAT data were distributed into four approximately equal score categories (Table 1).

Table 1: Distribution of SAT Scores, AISD Class of 2006

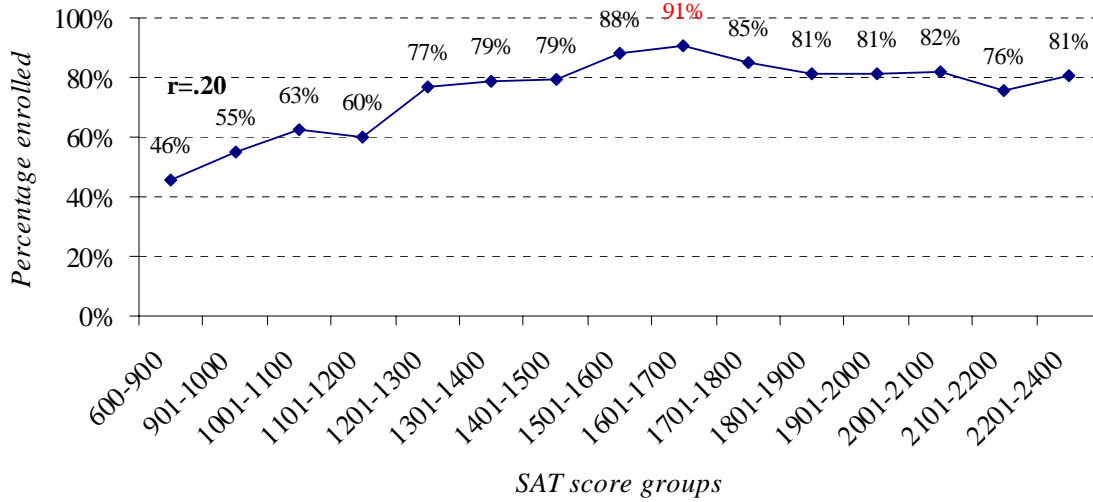
SAT category	N	% Total
600–1250	540	25.2%
1251–1510	542	25.3%
1511–1750	533	24.9%
1751–2400	528	24.6%
	2143	100.0%

Source: The College Board, prepared by DPE, September 2007

Note: Because SAT test takers can elect to not have their scores released to entities outside the College Board, the reported number of students taking the SAT may be underestimated.

To provide a more precise picture of how postsecondary enrollment rates varied by SAT scores, narrower groupings of SAT scores were created, and the 2006–2007 enrollment rates at any type of postsecondary institution for the Class of 2006 were mapped (Figure 6). Although a positive directional trend was clear, it was weak ( $r = .20$ ), and postsecondary enrollment rates decreased when cumulative SAT scores exceeded 1700 (91%).

Figure 6: Postsecondary Institution Enrollment by SAT Score, AISD Class of 2006

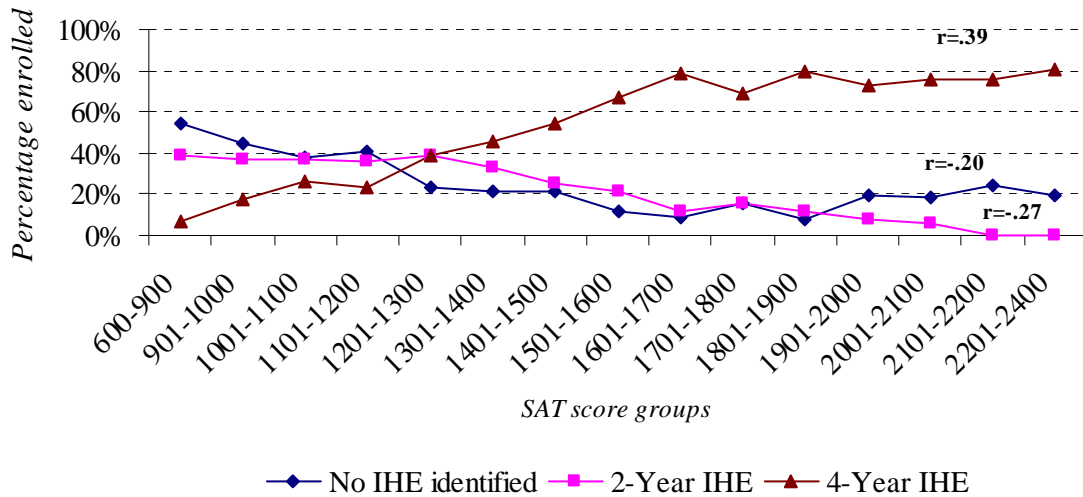


Sources: The College Board, National Student Clearinghouse, Texas Higher Education Coordinating Board, prepared by DPE, September 2007

To determine if SAT scores were differentially correlated with enrollment rates by the type of postsecondary institution, postsecondary enrollment status was disaggregated into three separate categories: 2-year institution, 4-year institution, and no record of enrollment (Figure 7). Disaggregating postsecondary enrollment status revealed stronger relationships between SAT and enrollment in a 4-year institution than in any type of institution. Again, the strength of the relationship fluctuated according to SAT score.

Although the data also indicated that the rate for “no enrollment in a postsecondary institution” rose among students with cumulative SAT scores greater than 1900, this may have been an artifact of missing data points from the multiple sources used to compile postsecondary enrollment rates. For instance, the two students with perfect SAT scores (2400) were not found to be enrolled in any type of postsecondary institution during the 2006–2007 school year.

Figure 7: Postsecondary Enrollment Status by SAT Score, AISD Class of 2006

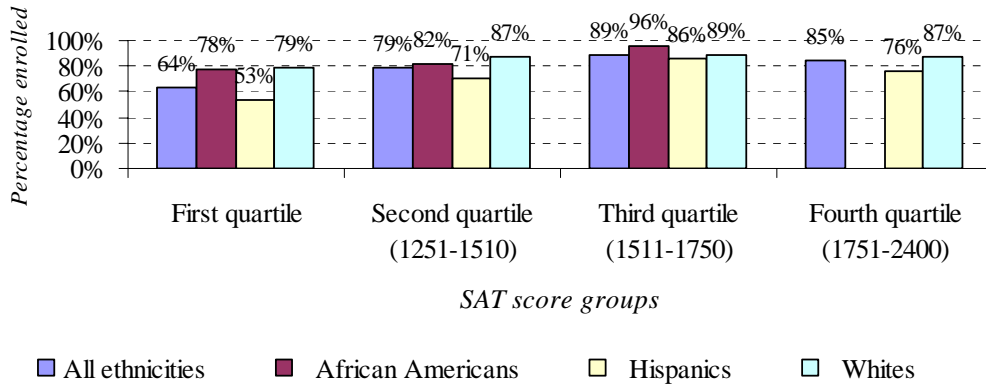


Sources: The College Board, National Student Clearinghouse, Texas Higher Education Coordinating Board, prepared by DPE, September 2007

Disaggregating postsecondary enrollment rates by ethnic group provided a more complete representation of the relationship between SAT score and postsecondary enrollment than did the prior analyses (Figure 8). Several interesting patterns emerged. Among students scoring between 1511 and 1750 on the SAT, African American graduates had the highest rate of postsecondary enrollment (96%), surpassing both White and Asian graduates. Across all SAT score classifications, Hispanic graduates had lower enrollment rates than did their White, Asian, and African American counterparts.

However, one should interpret these results with caution. The postsecondary enrollment rates were potentially inflated as a result of selection effects. That is, only those students with intentions of enrolling in a postsecondary institution were likely to take the SAT. Thus, postsecondary enrollment figures across ethnic groups reflected a restricted range. Given this caveat, the low percentage of Hispanic students enrolling in any postsecondary institution was striking compared with the percentages for other ethnic groups.

Figure 8: Postsecondary Enrollment, by Ethnic Group and SAT Quartile



Sources: The College Board, National Student Clearinghouse, Texas Higher Education Coordinating Board, prepared by DPE, September 2007

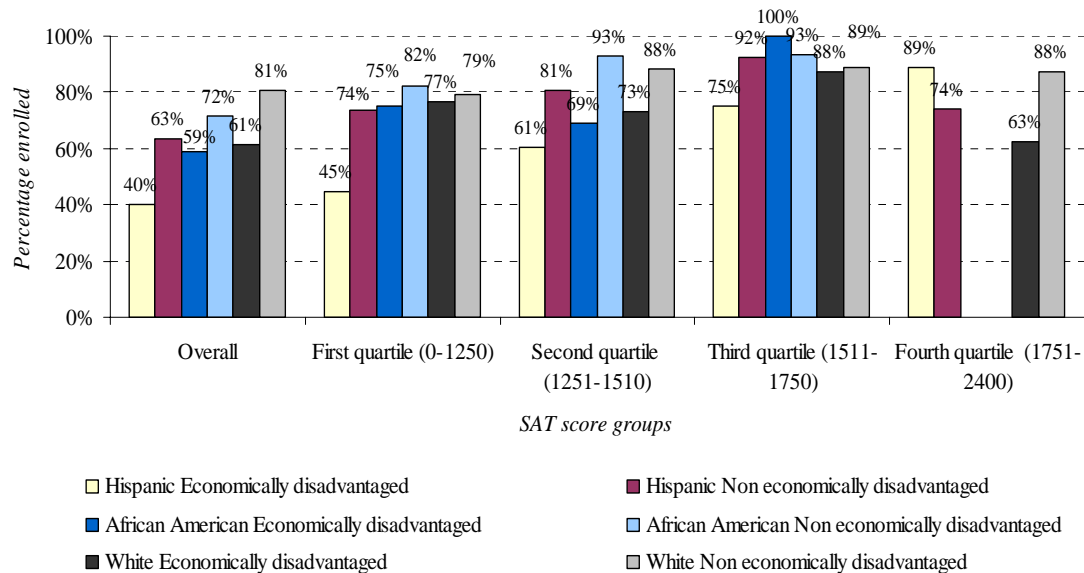
Analyzing the postsecondary enrollment of ethnic groups across SAT score groups assumed that students within each grouping were identical across a range of demographic and economic variables. As shown in Figure 9, the independent effect of one background variable, economic status, was examined. Classifying students according to both their ethnicity and their economic status permitted a comparison within and across ethnic groups of postsecondary enrollment rates for students with similar economic characteristics.

Students within each ethnic group were categorized as either economically or not economically disadvantaged and were placed within their respective SAT score group. Thus, for each ethnic group, two categories were created for each SAT score group. For instance, one category included the percentage of economically disadvantaged African American students who were enrolled in any type of postsecondary institution, while the other included the percentage of not economically disadvantaged African American students who were enrolled.

Across all SAT scores, and when compared with graduates from other ethnic groups who had similar economic circumstances, Hispanic students enrolled in postsecondary institutions at a sharply lower rate than did African American and White students. This gap narrowed, however, as Hispanic students' SAT scores rose. Nonetheless, a sizeable postsecondary enrollment disparity endured among Hispanic graduates who scored between 1511 and 1750 (i.e., a 75% enrollment rate for economically disadvantaged Hispanic graduates, compared with a 92% rate for those not economically disadvantaged). For graduates receiving a cumulative SAT score between 1511 and 1750, postsecondary enrollment gaps across ethnic groups persisted, independent of economic status.



Figure 9: Postsecondary Enrollment Across Ethnic Groups, by Economic Status and SAT

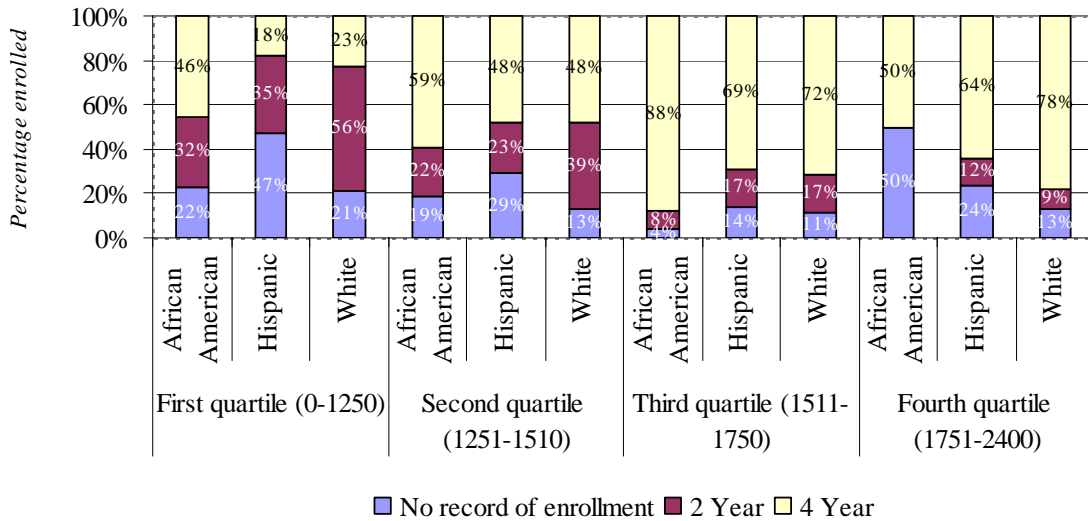


Sources: The College Board, National Student Clearinghouse, Texas Higher Education Coordinating Board, AISD student records (SASI), prepared by DPE, September 2007

Lastly, postsecondary enrollment was disaggregated according to enrollment in a 4-year institution, enrollment in a 2-year institution, and no evidence of postsecondary enrollment (Figure 10). Next, data were subcategorized by ethnicity and placed into one of the four SAT groups, according to the students' SAT scores.

Across three of the four SAT categories, the 4-year postsecondary institution enrollment rates for African American students exceeded those of White and Hispanic students. Hispanic enrollment in 4-year institutions was lower than that of both White and African American students with comparable SAT scores. Furthermore, although the data presented in Table 8 indicated that, across three of the four SAT classifications, White students were more likely than other groups to enroll in a postsecondary institution, disaggregating enrollment records by the type of postsecondary institution revealed that this advantage was driven by their more frequent enrollment in 2-year institutions. Particularly among students scoring between 600 and 1250 (56%) and between 1251 and 1510 (39%) on the SAT, White students had higher enrollment rates in 2-year institutions than did their Hispanic and African American peers.

Figure 10: Ethnic Group Postsecondary Outcomes, by SAT Classification



Sources: The College Board, National Student Clearinghouse, Texas Higher Education Coordinating Board, AISD Student Records (SASI), prepared by DPE, September 2007

**IMPLICATIONS FOR DISTRICT PRACTICE AND FUTURE RESEARCH**

- Among SAT test takers in the AISD Class of 2006, the under-representation of Hispanic and African American students relative to total district enrollment underscores the need to continue to target these populations through district programs designed to raise postsecondary preparation levels and enrollment rates.
- Potential first-generation college students should be identified early and targeted for support services that prepare them for and encourage them to take college entrance exams (i.e., SAT, ACT, AP tests).
- Although disparities persist across ethnic groups and across economic status, higher SAT scores increase the likelihood of enrolling in a postsecondary institution. Early intervention using support programs designed to improve students’ preparedness for college entrance exams is recommended.
- The disparity in postsecondary enrollment rates between Hispanic graduates and White and African American graduates, independent of economic status and SAT performance, points to the need to tailor support initiatives aimed at the Hispanic subpopulation.
- Preliminary analyses indicate that students without a reported social security number (SSN) enroll in postsecondary institutions at a significantly lower rate than do those with a social security number on file. Seventy-three percent (72.8%) of students from the Class of 2006 who did not have a reported SSN did not enroll in any institute of higher education. On the other hand, the non-enrollment rate of students with a reported SSN was 34%. Without a social security number, students are unable to receive federal assistance for their postsecondary education. This is important because limited family financial resources have been shown to depress postsecondary enrollment rates, although these limitations can be

alleviated by aid programs (Dynarski, 2005; 2003). This warrants further investigation in future research.

- To uncover school effects, future research should analyze the postsecondary enrollment rates of relevant student groups (e.g., as determined by such variables as ethnicity, economic status, and first-generation college student status) by campus of enrollment. If school effects are identified, then the district should consider ways to differentiate support systems for students attending those schools with relatively lower postsecondary enrollment rates.