

THE DETERMINANTS OF POSTSECONDARY ENROLLMENT:
EVIDENCE FROM THE AISD CLASS OF 2007

Austin Independent School District
Department of Program Evaluation

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EXECUTIVE SUMMARY

The Austin Independent School District (AISD) strives to ensure that its graduates are prepared to transition successfully to a postsecondary institution. The intensification of these efforts corresponds to a rising share of American high school graduates aspiring to enter a postsecondary institution after graduation. In 1972, only 33.6% of high school seniors planned to enter a 4-year degree program. By 2004, however, the percentage of high school seniors aspiring to enter a 4-year program had risen to 61.2%, while the percentage aspiring to enter any type of postsecondary institution was 84.7%. Graduates from AISD exhibited similar trends.

Although these ambitions are encouraging, members of the AISD Class of 2007 faced difficulties meeting their postsecondary aspirations. Only 42% of seniors enrolled in a 4-year institution in the fall or spring after graduation, while 27% enrolled in a 2-year institution or a vocational school. This report aims to illuminate the myriad factors shaping students' postsecondary decisions. Several key findings were revealed:

Hispanic graduates continue to lag behind their peers in postsecondary enrollment rates. Across most measures of college preparation analyzed in this report, Hispanic graduates did not satisfy many of the fundamental criteria needed to enroll in a 4-year college.

Increasing GPA, although an important predictor of postsecondary enrollment, did not account for the application and enrollment gap between Hispanic graduates and their peers.

While 91% of AISD graduates from the Class of 2007 planned to attend college in the year after graduation, only 73% enrolled in a 2-year or 4-year college. Importantly, whether graduates satisfied their post-graduation goals was mediated by several important factors, including ethnic group membership and academic performance in high school.

Minimal differences appeared in students' desires to attend a postsecondary institution. For instance, approximately 80% of students in the bottom GPA quartile hoped to enroll in a postsecondary institution.

Intensive involvement in the application process improved graduates' postsecondary enrollment chances. This involvement was particularly decisive for Hispanic graduates.

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INTRODUCTION

This report is an extension of the 2007 Austin Independent School District (AISD) report titled *Postsecondary Enrollment Summary Report: Classes of 2002–2007* (Garland, 2008). As in the previous study, student-level enrollment records from the National Student Clearinghouse (NSC) were the primary data source used to analyze postsecondary enrollment of AISD graduates. These data were augmented by individual enrollment counts at the University of Texas at Austin and the University of North

descriptive statistics to more advanced multivariate procedures designed to isolate how student and school characteristics are related to postsecondary aspirations, application, and enrollment after controlling for other factors related to these outcomes. Because the population and student outcome variable (e.g., whether a student applied/enrolled in a postsecondary institution) analyzed differed across sections, the multivariate statistical procedure for evaluating the meaningful student and school-level characteristics associated with whether a student applied, was accepted, or enrolled in a postsecondary institution varied. Due to the nested structure of the data (i.e., students within schools), where statistically appropriate, hierarchical generalized linear models (HGLM) were used to estimate the impact of a particular variable on the outcome of interest. These models were selected instead of standard hierarchical linear models (HLM) because of the construction of the dependent variable. Estimation procedures using ordinary least squares (OLS) in the presence of a dependent variable that has only two values jeopardizes the reliability of the standard errors that are the basis for ensuring the accuracy of the conclusions drawn from the analyses.

The statistical adequacy of HGLM model relative to a standard logistic regression was evaluated using a likelihood ratio (LR) test that tested whether significant differences in student outcomes remained across the level-2 variable (school) after controlling for student-level characteristics. In the final section, a multinomial logistic regression was used due to the categorical structure of the outcome variable. For all non-hierarchical models, including the multinomial logistic regression estimates, adjusted

transitioning to a postsecondary institution because the misalignment between postsecondary aspirations and outcomes was more acute among Hispanic graduates than among other ethnic groups (Figure 5).

POSTSECONDARY ENROLLMENT PATTERNS OF 2007 AISD HIGH SCHOOL EXIT SURVEY RESPONDENTS

Economically disadvantaged students' (Figure 2) postsecondary enrollment rates remained low compared with the rates of other groups despite the 1 percentage point increase from 2006. Females enrolled in postsecondary institutio

POSTSECONDARY ASPIRATIONS VERSUS OUTCOMES

Increasingly, American high school graduates aspire to enter a postsecondary institution. In 1972, only 33.6% of high school seniors planned to enter a 4-year degree program. By 2004, however, the percentage of high school seniors planning to enter a 4-year program had 5-T2]

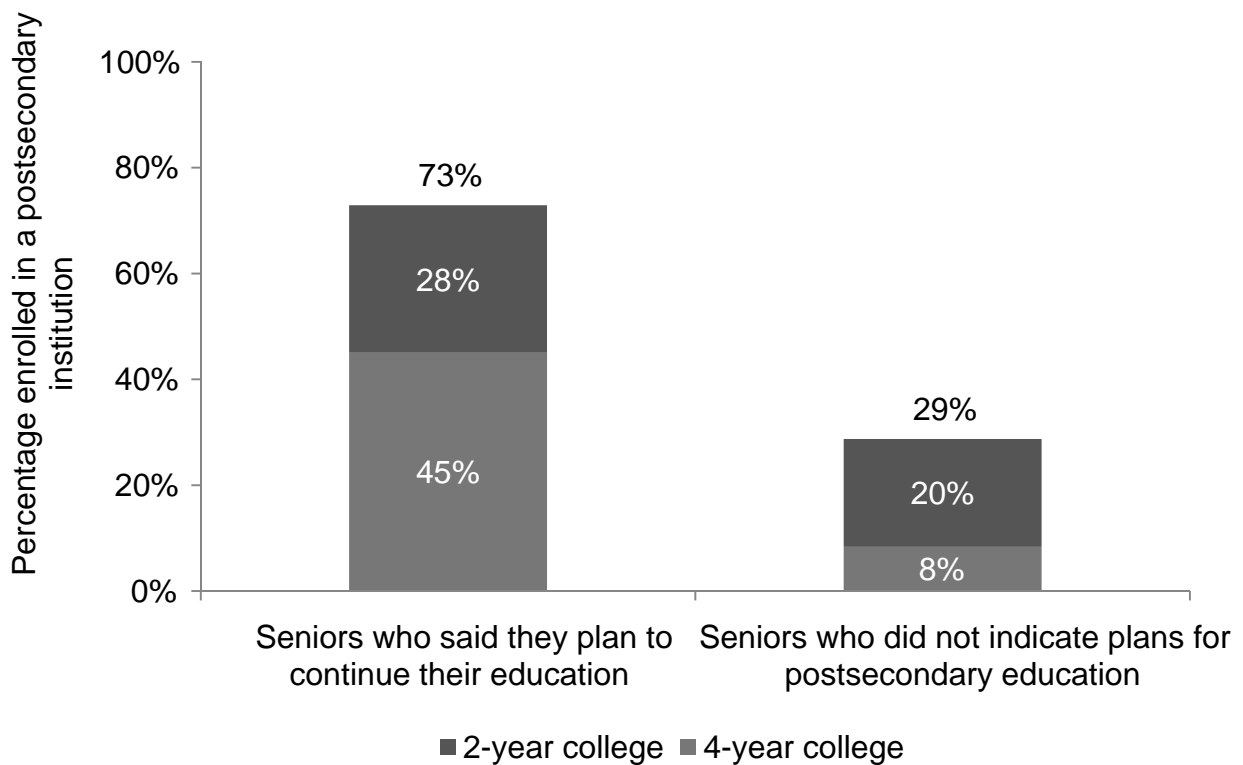
Figure 3. Pathways to 4-Year Postsecondary Institution Enrollment



Source.

The postsecondary enrollment records of graduates who indicated in the 2007 High School Exit Survey that they planned to pursue postsecondary education were examined to determine how closely their aspirations matched their post-graduation outcomes. Item 2 of the exit survey asked, “Within a year after graduating from high school, what do you plan to do?” Ninety-one percent of graduating seniors who responded to that survey reported they would “pursue postsecondary education.” Of this group, almost three quarters actually enrolled in a postsecondary institution during the 2007–2008 school year (Figure 4). Of students who did not indicate an intention to pursue postsecondary education, 29% enrolled in a postsecondary institution.

Figure 4. Postsecondary Enrollment Rate, by Intent to Pursue Postsecondary Education, Class of 2007



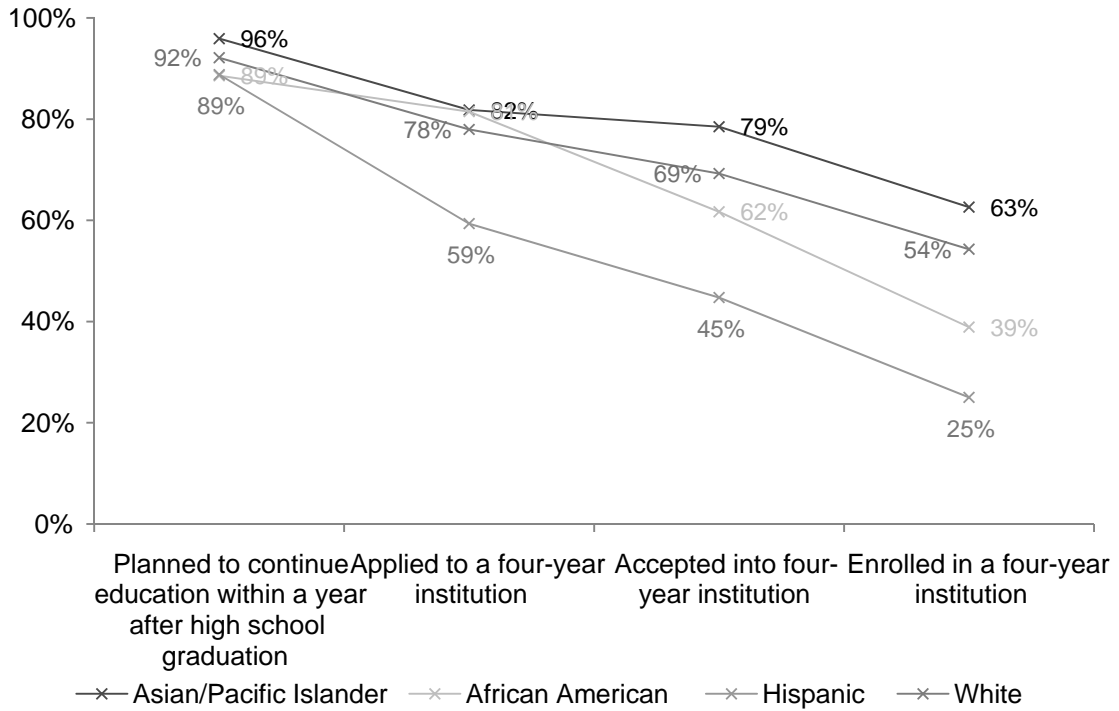
Sources. The NSC, the RMC, 2007 AISD High School Exit Survey, prepared by the DPE, October 2008

Note. Column percentages may not sum to 100% enrollment percentage due to rounding.

Research conducted by Roderick et al. (2008) revealed that the pathways to 4-year enrollment differed across ethnic groups and student achievement. Similar patterns emerged among AISD Class of 2007 graduates (Figure 5). Hispanic students were less likely than were their White and Asian/Pacific Islander counterparts to aspire to continuing their education after graduation. This gap appeared across each stage of the college application process. Only 59% of Hispanic students applied to a 4-year institution, compared with 78% of White seniors, and only 25% ultimately enrolled in a 4-year institution in fall or spring after graduation. African

American seniors also showed distressing trends. Eighty-one percent of African American graduates applied to a 4-year institution; however, only 39% enrolled in a 4-year college in the fall or spring after graduation. This 42 percentage point gap between applying and attending a 4-year institution was the largest across all ethnic groups.

Figure 5. Differing Pathways to 4-Year Postsecondary Institution Enrollment, by Ethnicity



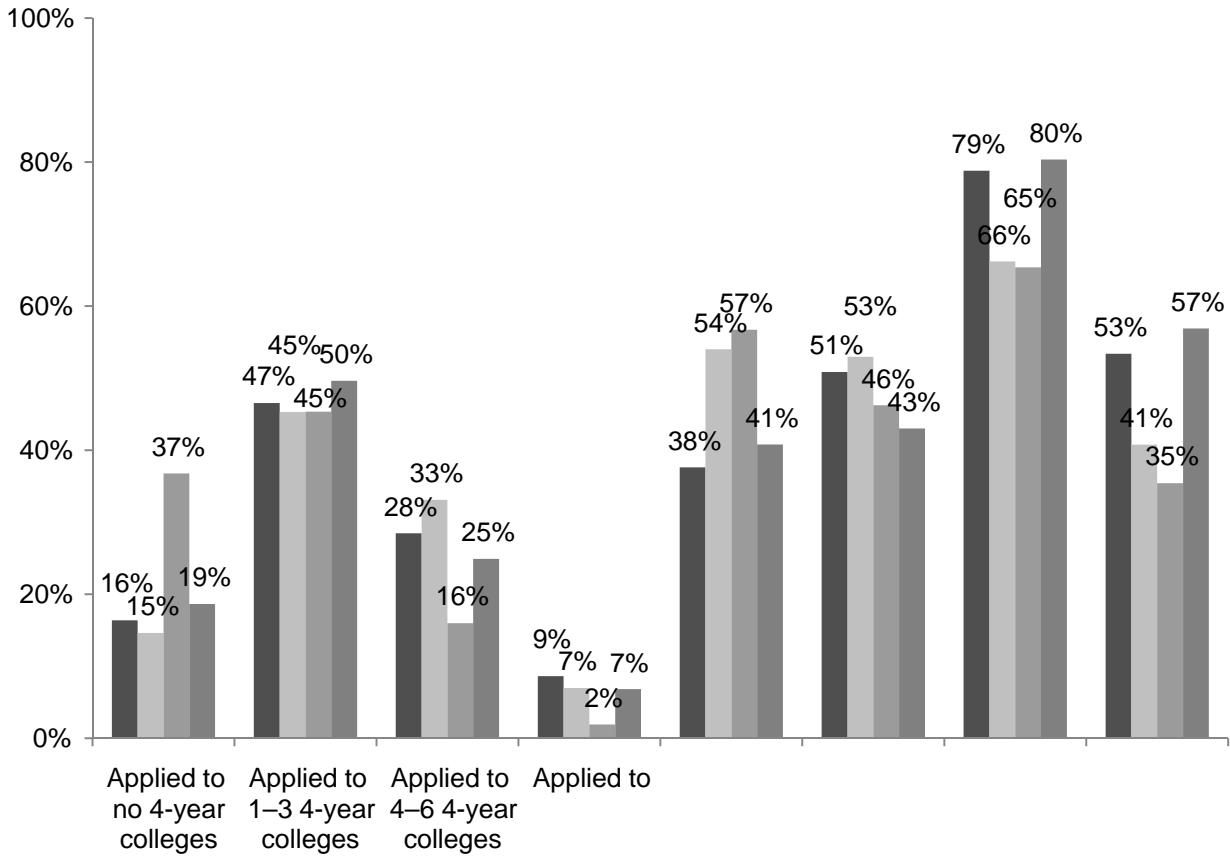
Source. The NSC, the RMC, 2007 AISD High School Exit Survey, prepared by the DPE, October 2008

Graduates with high grade point averages (GPA) were more likely to plan to continue their education after graduation compared, with those with lower GPAs (98% for the highest quartile and 80% for the lowest quartile). Among students in the top GPA quartile, 96% applied

WHO ASPIRES TO ATTEND A POSTSECONDARY INSTITUTION AND WHY?

Class of 2007 graduates who were Hispanic were less likely to plan on attending a postsecondary institution after graduation than were graduates from other ethnic groups (Figure 3). Beyond ethnicity, however, other demographic and academic variables were associated with lower rates of postsecondary educational aspirations. Figure 7 segments graduates' self-reported

Figure 8. Percentage of Graduates Satisfying PSN Necessary to Attend College, by Ethnicity



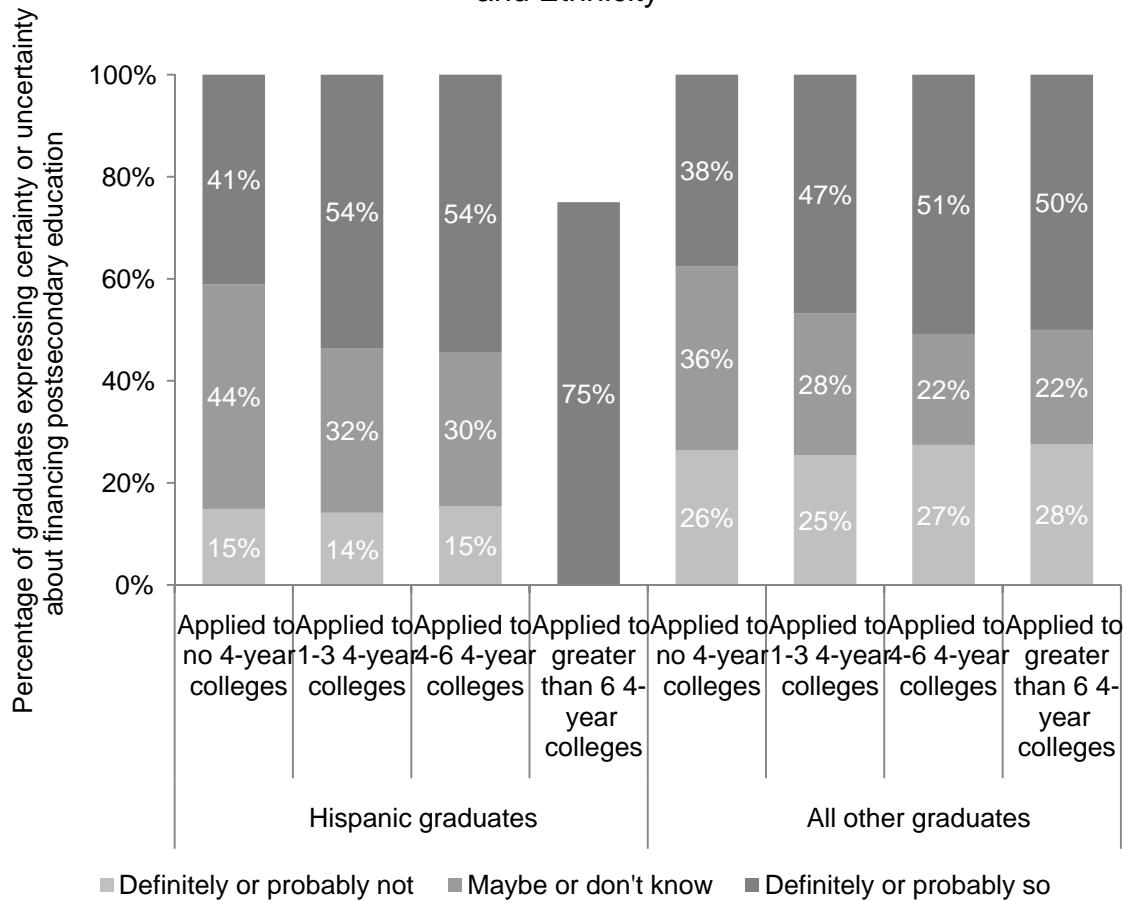
Source. 2007 AISD High School Exit Survey, prepared by the DPE, October 2008

Note. Only graduates who indicated on the High School Exit Survey that they intended to enroll in a postsecondary institution were included.

availability of financial aid and the costs associated with postsecondary enrollment (Cabrera & La Nasa, 2001). Moreover, receiving financial aid offers has been shown to boost the likelihood of enrolling in a postsecondary institution, particularly among students with a low-socioeconomic status background (Jackson, 1978).

The data in Figure 10 explore this relationship. Graduates who expressed intentions to enroll in a postsecondary institution after graduation were disaggregated according to how many applications they submitted to 4-year institutions and by their intentions to borrow money to finance their postsecondary education. As the number of applications submitted to 4-year institutions rose, uncertainty about financing postsecondary education declined. However, the level of uncertainty among Hispanic students who intended to enroll in a postsecondary institution was higher than that of their peers across all levels of application submissions. For Hispanic graduates, uncertainty about borrowing to fund their postsecondary education was a statistically significant predictor of not applying to a 4-year institution, even after controlling for confounding student-level variables.

Figure 10. Postsecondary Outcomes of Graduates by Year Application Submission Intensity and Ethnicity



Source. 2007 AISD High School Exit Survey, the NSC, the RMC, prepared by the DPE, October 2008

Figure 11. Change in Predicted Probabilities Applying to a 4-Year Institution, by Levels of School and Parental Support, Borrowing Intentions, and Ethnicity

Source. 2007 AISD High School Exit Survey, the NSC, the RMC, prepared by the DPE, October 2008

Note. Predicted probabilities were derived from a multilevel logistic regression model. Value labels indicate the percentage point change in the predicted probability of applying to a 4-year college associated with a 1 standard deviation change above and below the mean for each variable presented, holding all other variables' values constant at their means. For the "Uncertainty about borrowing"

Student achievement, measured by a graduate

on their 8th grade math state assessment test. Although gaps existed across ethnic groups, graduates who aggressively applied to 4-year institutions dramatically raised their acceptance rates.

Figure 14. Self-Reported 4-Year Institution Acceptance Frequency, by Ethnicity and Number of Application Submissions

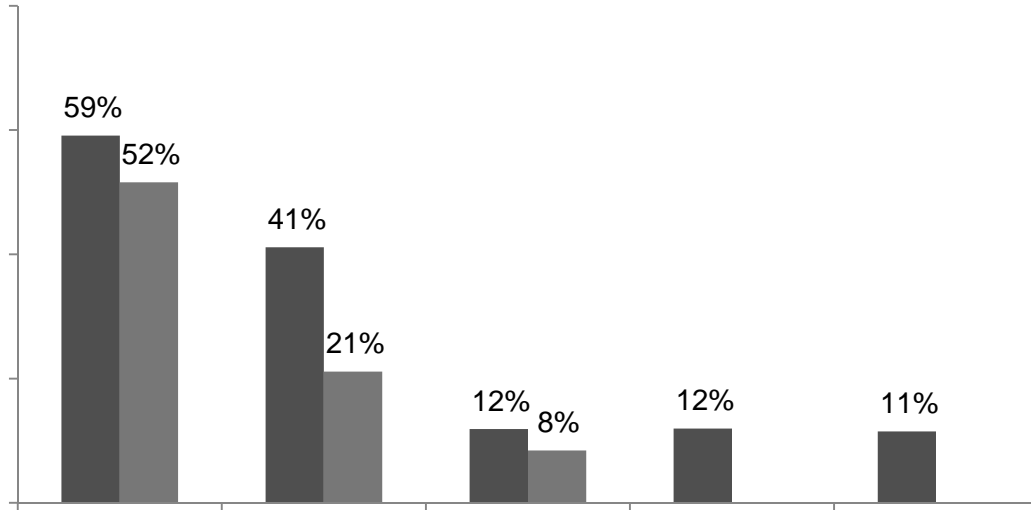
Source.

Because we were trying to determine the likelihood of enrolling in a postsecondary institution, we examined the following three variables: 2-year, 4-year, and no enrollment record. Students with different backgrounds can exhibit different pathways to postsecondary enrollment. That is, some high-achieving students who do not qualify for free or reduced price lunches transition directly to a 4-year institution, while some students who do qualify for this program but also have strong GPAs begin their postsecondary education in a 2-year institution due to financial considerations. For questions such as these, we estimated how likely a student with particular attributes was to enroll in a specific type of postsecondary institution, relative to the likelihood of not enrolling at all, using multinomial logistic regression.

One of the strongest predictors of enrolling in a 4-year institution was GPA, although its impact varied across ethnic groups. As Figure 20 shows, increasing a Hispanic graduate's GPA from a C average to an A average increased the likelihood of enrolling in a 4-year college by 59 percentage points, exceeding the gain estimated for other graduates (52 percentage points). Aggressively applying to 4-year colleges also increased the likelihood of acceptance for graduates; this strategy was particularly important for Hispanic graduates. In addition to and supporting the descriptive data presented in Figure 10, Hispanic graduates who were uncertain about whether they would borrow money to finance their postsecondary education were found to be less likely to enroll in a 4-year institution, compared with those who were confident they would borrow.

Last, as Garland (2007) noted, few Hispanic graduates from the class of 2006 who did not have a valid SSN on file enrolled in a postsecondary institution after graduation. Although undocumented status poses barriers to postsecondary enrollment (Roderick et al., 2008), this variable does not sufficiently explain the documented gap in postsecondary enrollment rates between Hispanic graduates and other ethnic groups. The analyses performed on AISD graduates supported this finding; that is, gaps in enrollment persisted even after controlling for SSN status. Nonetheless, not having a valid SSN strongly depressed the likelihood of enrolling in a 4-year institution (12 percentage points).

Figure 20. Change in Predicted Probabilities of Enrollment in a 4-Year Institution by Grade Point Average, Frequency of Application Submission, Documentation Status, and Ethnicity



Source. 2007 AISD High School Exit Survey, the NSC, the RMC, prepared by the DPE, October 2008

Note. Predicted probabilities were derived from a multinomial logistic regression model. Value labels indicate the percentage point change in the predicted probability of enrolling in a 4-year college, holding all other variables at their mean value. A low GPA was defined as 1 standard deviation below the mean and a high GPA was defined as 1 standard deviation above the mean. Few applications noted 1 to 3 application submissions. Many applications denoted 4 to 6 application submissions. Undocumented Hispanic graduates were operationalized as not having a valid SSN on file and as having been born outside of the United States. Uncertainty about borrowing to finance their postsecondary education was defined as having indicated on the High School Exit Survey that they did not know or they might borrow money.

The role of ethnicity in the likelihood of acceptance to a 4-year institution was demonstrated to be mediated by GPA (Figure 16). Disparities in acceptance between Hispanic students and their peers narrowed rapidly as GPA increased. Similarly, gaps in the probability of 4-

Much of the research that identifies and champions the importance of school-level variables in shaping students' pathways to a postsecondary education assumes students are present at school to receive this support. A study by Austin and consistently strong negative correlate of postsecondary enrollment (i.e., both 2-year and 4-year) was the accumulation of a large number of absences. Figure 23 plots the predicted probability of enrollment in a 4-year institution for both Hispanic and non-Hispanic graduates.

Two interesting student attendance patterns were found. For non-Hispanic graduates, the effect of incurring more absences in high school did not dramatically reduce the likelihood of enrolling in a 4-year college after graduation. However, among Hispanic graduates, increasing the number of absences sharply reduced the likelihood of enrolling in a 4-year college (19 percentage points). This observation occurred even after controlling for other contributing variables (e.g., student demographic and academic factors). Research suggests and the findings presented in this report indicate that Hispanic students disproportionately benefit from the college preparation activities and support networks available at schools (Perna & Titus, 2005; Roderick et al., 2008). Frequent absences may disrupt these support channels or prevent them from being established initially.

Furthermore, according to AISD High School Exit Survey results, a higher share of Hispanic graduates reported working 16 or more hours per week (41%) during their senior year than members of any other ethnic group. A related finding, Garlan (2008) reported that Hispanic graduates, irrespective of whether they enrolled in a postsecondary institution, earned higher median wages after high school than African American, White, or Asian graduates. The accrual of considerable absences during the senior year may be a byproduct of labor market entry and activity, which may interfere with the college preparation and application process.

enroll in a 2-year college. Last, and combining the findings presented in Figure 20, each graduate in Table 1 applied to more than 6 colleges.

Table 1. Characteristics of Graduates Most Likely to Enroll in a 2 or 4-Year Institution

Probability of enrollment	Direction of relationship	Student 1	Student 2	Student 3	Student 4
	n/a	81%	82%	83%	84%

Source. AISD Student Records, the NSC, the RMCS, and Student Records, prepared by the DPE, October 2008

Note. Probabilities were derived from a multinomial logit regression model. Parental involvement measured the extent to which parents were involved in school-related events. The values were 1 = never; 2 = rarely, 3 = occasionally, 4 = often, 5 = consistently. Values for the number of hours worked were 3 = 11–15 hours, 4 = 16 or more.

IMPLICATIONS FOR DISTRICT PRACTICES

Hispanic graduates continue to lag behind their peers in postsecondary enrollment rates. Across most measures of college preparation analyzed in this report, Hispanic graduates did not satisfy many of the fundamental criteria needed to enroll in a 4-year college. Resources should be devoted to ensure college aspirants fulfill the requirements necessary to meet their goals, including submitting transcripts and college applications, completing FAFSA applications, and taking college entrance exams.

Many of the variables correlated with boosting 4-year enrollment rates yielded different effects for Hispanic graduates, underscoring the need for and importance of school support staff. Hispanic graduates who received intensive support from counselors, and those who felt they were prepared for the college application process, were likely to apply to a 4-year college. The impact was greater for Hispanic graduates than for other students. Collectively, these findings point to the critical role played by campus and district staff tasked with ensuring students are provided the resources necessary to help them navigate the postsecondary application and enrollment process.

Increasing GPA, although an important predictor of postsecondary enrollment, did not account for the application and enrollment gap between Hispanic graduates and their peers. Hispanic graduates with an A average continue to trail their peers with similar achievement levels in their application and enrollment rates to 4-year colleges.

Increasing the number of absences during their senior year exhibited differential effects for Hispanic and other graduates. Absences were a significant negative predictor of 4-year enrollment among Hispanic graduates. A small number of absences did not attain statistical significance. This may be a consequence of more widespread and frequent employment among Hispanic graduates. Nevertheless, interventions to lower congenital absence problems may be particularly important for Hispanic graduates but may not sufficiently address the factors precipitating the decision to miss school.

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