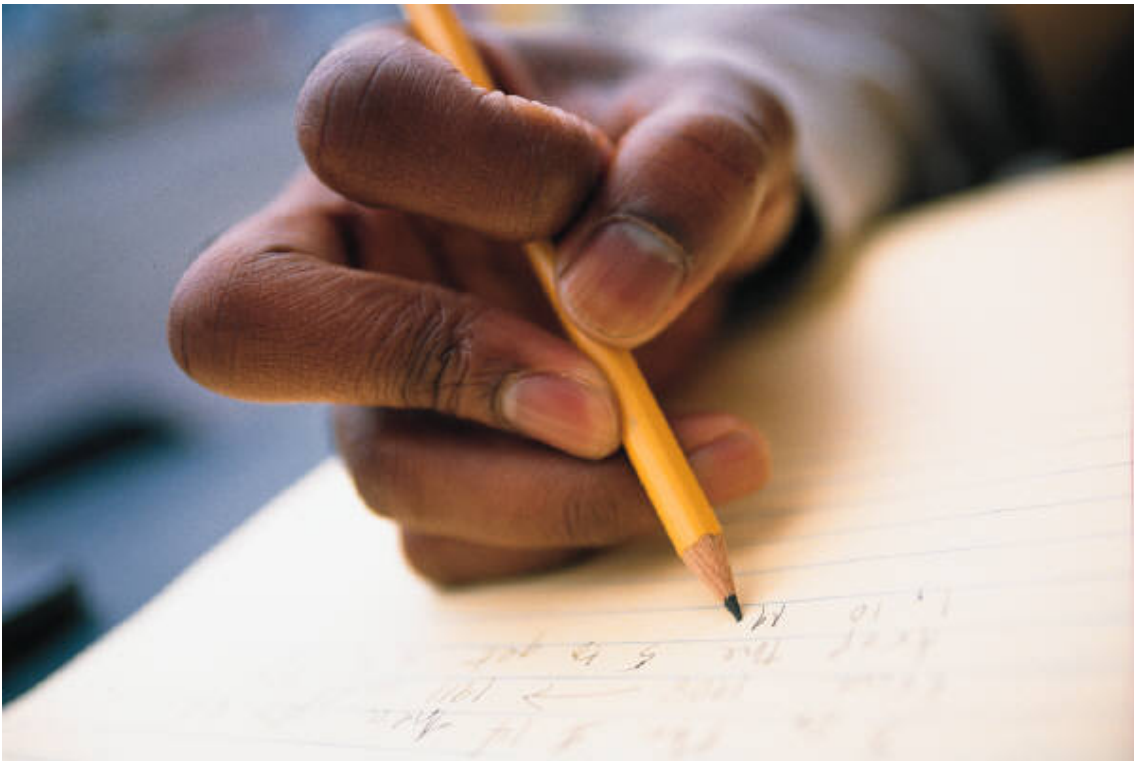# ADVANCEMENT VIA INDIVIDUAL DETERMINATION (AVID):

AN EVALUATION OF STUDENT ACADEMIC PERFORMANCE, 2005-2006

Austin Independent School District

Department of Program Evaluation

October 2006

EXECUTIVE SUMMARY

The Advancement Via Individual Determination (AVID) program was offered in 10 high schools and 6 middle schools during the 2005-2006 school year. AVID began in the Austin Independent School District (AISD) in 1999 as a way of helping more students become eligible for college. Students who were considered academically "average," based on previous grades and test scores, and who often came from low-income and minority households that lacked a history of college education, were recruited into the AVID program. Students could take up to six AVID courses taught by teachers who were trained to use the AVID curriculum and other teaching materials to help students improve study and critical thinking skills. In addition to taking the AVID course, AVID students were placed in more challenging courses, such as honors and Advanced Placement (AP) courses.

To evaluate the program, Texas Assessment of Knowledge and Skills (TAKS) reading and math test scores, grade point averages (GPAs), and AP course-passing rates of AVID high school students were compared with those of non-AVID students for the 2005-2006 school year. The data were analyzed using hierarchical linear modeling (HLM) to control for differences between the schools with respect to both academic performance and the percentages of minorities and of students identified as economically disadvantaged. In the first stage of the analysis, the GPA and TAKS scores earned by students before taking their first AVID courses were compared to those of non-AVID students. Then, AVID and non-AVID students' GPA, TAKS scores, and AP course-passing rates were analyzed to identify differences that exceeded those already existing before the AVID students began. Finally, students were evaluated on these same measures according to the number of AVID courses they had taken.

The overall results of the evaluation indicated that the more AVID courses students completed, the better they performed in school. The relationship between the number of AVID courses taken and academic performance was stronger among students at schools with large percentages of students identified as economically disadvantaged than among students at schools with small percentages of those students. However, students who attended high schools with the highest percentages of economically disadvantaged students were often the same students who attended the six AVID middle schools, which afforded those AVID students a larger window of time to complete more AVID courses. Thus, it remains unclear to what extent these two factors were independent of one another.

Nevertheless, the results demonstrated that AVID courses helped AISD students become academically prepared for college, and that most of this improvement occurred at high schools that historically have sent the fewest students to college. Thus, it was recommended that the district emphasize to students the importance of maintaining enrollment in AVID for multiple

years, and that the district take steps to increase participation in AVID at schools with large percentages of students identified as economically disadvantaged. Further study of the AVID program is also suggested to identify program influences on other types of student outcomes (e.g., retention rates, AP tests, SAT scores, and college enrollment rates) as well as the effect of specific AVID teachers on student performance.

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INTRODUCTION

A recent study from the Austin Independent School District's (AISD) Department of Program Evaluation revealed that 43% to 45% of those who graduated from AISD since 2002 did not enroll in college or another postsecondary institution within a year after graduation (see Table B11 for postsecondary enrollment rates for the class of 2005). Historically, this group of non-college-seeking graduates consisted disproportionately of racial and ethnic minorities, the majority of whom were identified as economically disadvantaged because they qualified for free or reduced-price meals based on household income (Alderete, Schmitt, & Coneway, 2006). As part of ongoing district-wide efforts to close this college enrollment gap and give more students the chance to go to a 4-year college, AISD implemented the college-preparation program known as Advancement Via Individual Determination (AVID).

AVID is a nationwide program with the mission of boosting the achievement of "average" middle school and high school students to prepare them for 4-year college eligibility. AVID targets a middle range of students who are not considered high achieving or at risk of dropping out. Many of these students possess some desire and potential for greater academic success but lack exposure to the rigorous coursework and advanced study skills that would help them achieve it. AVID students are often from low-income and/or minority families that do not have a history of college education. Schools that participate in AVID offer an elective course taught by teachers who are trained to use the AVID curriculum and other teaching materials to help students improve study skills and critical thinking. In addition to taking the AVID course, AVID students are enrolled in more challenging courses, such as Advanced Placement (AP) courses, and are provided with tutoring support for those courses.

Since 1999, AISD has offered AVID courses at 6 of 17 middle schools and at 10 of 12 high schools (see Appendix B). Teachers and counselors at these schools recommended certain students for participation in AVID, based on a rubric that considered students' academic performance, family background, and personal motivation. The rubric gave approximately equal weight to each of the following student characteristics:

- Grade point average (GPA) between 2.5 and 3.5
- Texas Assessment of Knowledge and Skills (TAKS) scores
- Attendance and discipline records
- Potential first-generation college attendee status
- Child of single parent, or child in large family
- Qualification for free or reduced lunch
- English learned as a second language
- Written notes and oral interviews by AVID staff concerning students' readiness for AVID

Students who were selected for AVID could begin taking courses as early as 7th grade. They were expected to take as many as six courses through 12th grade. Middle school students enrolled in AVID Prep Skills courses, and high school students enrolled in AVID I through AVID IV courses.

During the 2005-2006 school year, 865 of 21,230 AISD high school students participated in AVID. The AVID program had a disproportionately higher percentage of 9th graders, females, Hispanics, African Americans, and economically disadvantaged students than did the rest of the AISD high school population. Table 1 shows how AVID students compared with non-AVID students with respect to grade level, gender, race/ethnicity, and various district-assigned designations. For example, 72% of AVID students in 2005-2006 were identified as economically disadvantaged, compared with 40% of other high school students.

Table 1: Characteristics of AVID vs. Non-AVID High School Students, 2005-2006

	Percent of AVID Students	Percent of Non-AVID Students
9th Grade	43%	32%
10th Grade	28%	25%
11th Grade	18%	21%
12th Grade	11%	22%
Female	62%	48%
African American	23%	14%
Hispanic	66%	47%
Asian	2%	3%
White	9%	36%
Gifted and Talented	11%	8%
At Risk	64%	60%
Econ. Disadvantaged	72%	40%
Special Education	1%	6%
Limited English Proficiency	5%	10%

Source: District enrollment records, August 2006

METHODOLOGY

PURPOSE

This evaluation study is intended to provide program stakeholders with information about students' academic outcomes as a result of their program participation. Stakeholders can use the evaluation findings to measure progress toward meeting articulated goals and to support ongoing decision making for program improvement.

EVALUATION PLAN

Because the ultimate goal of AVID is to place academically average students on the path to 4-year college enrollment, the most appropriate way to evaluate the program's effectiveness would have involved a comparison of college enrollment rates for AVID and non-AVID graduates. At the time of publication, college enrollment data for these students are not yet available. Efforts are currently underway to obtain data for AISD graduates from the class of 2006 who enrolled in college in the 2006-2007 school year. Thus, selected student performance outcomes were used as alternative indicators of college eligibility.

The student performance outcomes selected for this study were GPA, AP course passing, and TAKS scores for the reading and math tests. TAKS scores and GPA are the core measures of students' academic performance. AP course passing is a vital outcome measure because one of the primary goals of AVID is to increase AP course enrollment, since AP participation also has been cited as predictive of college enrollment (Mathews, 2006).

It was important to design the study to control for any differences in student outcomes that could be attributed to other student and/or school characteristics, apart from AVID enrollment. Therefore, the analyses needed to make statistical adjustments to take into account the atypical demographics of students enrolled in AVID courses relative to the entire high-school-aged population. Likewise, AISD high schools differed greatly from one another according to their socioeconomic composition. The AVID study needed to take into account these differences to allow for the possibility that AVID's effect on student outcomes was influenced by school-specific features.

DATA SOURCES

All academic data and student demographics were accessed directly from AISD student information systems and included all 21,230 high school students who attended the 12 high schools in 2005-2006. A total of 865 students participated in AVID that year, although 653 other students enrolled at that time had participated in AVID in previous years. Appendix B provides tables of all relevant student and school variable frequencies.

DATA ANALYSIS

For the purposes of analysis, students were grouped according to their school enrollment and attendance. Although 12 AISD high schools participated, LBJ High School was separated into two school units: one representing the general student body and the other representing students enrolled in the Liberal Arts and Sciences Academy (LASA). This distinction was made because the LASA program functioned apart from the courses and curriculum provided to the general LBJ student body.

As discussed above, a district-wide program evaluation needed to take into account the ethnic and socioeconomic stratification of students across AISD schools. This stratification was represented primarily by an academic performance gap between White students and African American, Hispanic, and economically disadvantaged students. The rate of enrollment for each of these groups varied considerably from school to school, which could have been associated with varying levels of school-wide achievement. Thus, the possible effects of specialized curricula and programs, such as AVID, also could vary considerably by school.

For this reason, the evaluation of AVID was carried out using Hierarchical Linear Modeling (HLM, version 6.02) to analyze and control for both student-based characteristics (e.g., gender, and ethnicity, and AVID participation) and school-based characteristics (e.g., socioeconomic composition). HLM does this by performing a regression analysis at the student and school levels, which yields an estimation of how these student- and school-based criteria are related to each other in explaining student performance. In other words, an HLM model allows the evaluator to simultaneously estimate the degree to which participating in AVID affects any subsequent change in academic achievement, and the degree to which that effect is dependent on certain characteristics of the schools where the AVID courses were taken.

The HLM models designed for each outcome measure incorporated statistical controls to estimate as precisely as possible the effect of participating in AVID and the degree to which this effect differed by school. To isolate the specific effect of AVID, HLM controlled for differences attributable to other student characteristics. These characteristics included the following:
- Gender
- Race/ethnicity
- Grade level
- Economic disadvantage
- "At-risk" status (drop-out risk)
- Limited English proficiency (LEP)
- Participation in the GEAR UP college preparatory program (offered from 1999 to 2006)

- Special education status
- Gifted and talented status
- Whether the student began AVID in middle school or high school

To examine how the socioeconomic composition of AISD high schools may have contributed to student outcomes, each school was assigned a proxy measure of socioeconomic status, represented by the percentage of students identified as economically disadvantaged. This was deemed a valid socioeconomic indicator for the following reasons:

1. The percentage of economically disadvantaged students was almost perfectly correlated (r=0.97) with the percentage of minority students across the schools.
2. Numerous studies have demonstrated a strong connection between household income and education level in the United States (U.S. Census Bureau, 2002). Because AISD did not have data about parents' education, it was assumed that many economically disadvantaged students came from families with relatively low education levels.

The percentage of students identified as economically disadvantaged at each school varied significantly among schools, ranging between 8% and 83%, and was negatively correlated with most measures of school-wide academic achievement (i.e., high-achieving schools had consistently fewer economically disadvantaged students). As the sole school-level predictor, the percentage of economically disadvantaged students was converted to a percentile rank to allow for easier interpretation of results. Each school was placed on a 0 to 100 scale, with 50 as the median economically disadvantaged school. Table 2 provides the actual percentages of economically disadvantaged students from 2005-2006 and their percentile ranks. The statistical analyses used in this evaluation estimated outcomes for students attending schools at the 25th and 75th percentiles, which were the equivalents of the midpoints of the top and bottom halves of the scale.

Table 2: School Enrollment Counts and Percentage of Economically Disadvantaged Students, Ranked by Percentile, 2005-2006

School	Enrollment	% Economically Disadvantaged	Percentile
Bowie	2,744	8%	0th
Anderson	2,171	18%	8th
LBJ (LASA)	820	20%	17th
Austin	2,229	27%	25th
Garza	391	33%	33rd
McCallum	1,750	34%	42nd
Crockett	2,138	50%	50th
Akins	2,537	54%	58th
LBJ (Regular)	931	75%	67th
Lanier	1,761	78%	75th
Travis	1,726	79%	83rd
Reagan	1,148	80%	92nd
Johnston	884	83%	100th
All High Schools	21,230	41%	

Source: AISD student enrollment files prepared by the Department of Program Evaluation (by MIS request), August 2006

Although the majority of the variability in student outcomes across the district was attributed to student differences, there also were significant differences in academic performance that were attributable to the schools. This finding was determined by computing an intraclass correlation (ICC) for each outcome measure. The ICC indicated that 20% to 30% ($p < .05$) of the variability in all student outcomes (e.g., GPA, TAKS scores) was attributable to differences between high schools, and the remaining 70% to 80% of the variability was attributable to individual student differences.

After school differences were accounted for, two stages of analysis were conducted to evaluate student outcomes. To better understand preexisting differences between students, the first stage of analysis examined whether high school students who enrolled in AVID for the first time had performed differently in school from their non-AVID-taking peers *before* they took their first AVID course. Previous years' TAKS and GPA outcomes for students taking an AVID class for the first time were compared with those for non-AVID students. These analyses were conducted for first-time AVID students and non-AVID students enrolled during the 2004-2005 and 2005-2006 school years.

The second stage of analysis examined differences between non-AVID and AVID students *after* taking AVID courses. AVID students were classified according to whether they had (a) completed an AVID course at some point during their school enrollment and (b)

participated in AVID across multiple school years. The outcome measures examined included AP course-passing, TAKS scores, and GPA. First, outcome measures were analyzed to observe any differences in performance between students with and without prior AVID participation, regardless of years of participation. These results were compared with those from the first stage to observe whether the difference between AVID and non-AVID students had changed. Then, outcomes were analyzed based on the number of AVID courses to determine any possible cumulative effects of AVID enrollment over multiple school years.

The results of the analyses were described in terms of predicted average outcomes. These predicted averages do not correspond to the raw or actual averages found in other AISD reports. Rather, they were calculated by HLM, using statistical controls to account for the non-normal distribution of student variables within and between schools.

RESULTS AND DISCUSSION

High school AVID student achievement was examined and compared with non-AVID student achievement during the 2004-2005 and 2005-2006 school years to identify differences between the two groups both before and after participating in AVID. The results of the study showed that the achievement of students entering the AVID program for the first time was slightly higher than that of students who were not already participating in AVID. Nonetheless, the academic outcomes of students who enrolled in AVID and maintained enrollment for multiple school years improved with each year and far exceeded the achievement of students with little or no AVID course history.

STAGE 1: PRIOR ACADEMIC PERFORMANCE OF FIRST-TIME AVID STUDENTS

This section of the report describes prior academic achievement for first-time AVID students in 2004-2005 or 2005-2006 in comparison with their peers. The purpose of this particular analysis was to establish whether any differences in achievement between AVID and non-AVID students could be attributed to selection bias. In other words, was a student who entered the AVID program for the first time already likely to perform differently than other students based on his or her prior academic record?

Prior GPA for First-Time AVID Students

Prior to first-time students' participation in AVID, their GPAs were compared with those of students who did not participate in AVID, to establish a baseline of student performance. First-time AVID students in 2004-2005 and 2005-2006 had significantly higher GPAs in the year before their AVID enrollment than did non-AVID students ($p < .001$, Figure 1). The difference was significantly associated with the percentage of economically disadvantaged students attending a given school ($p < .05$). For example, in 2004-2005, first-time AVID students enrolled in a school at the 75th percentile of the economically disadvantaged scale earned an average GPA in the prior year that was 0.59 grade points greater than that of non-AVID students. In a school at the 25th percentile, first-time AVID students earned an average GPA 0.21 greater than that of non-AVID students.

Figure 1: Comparison of Prior GPAs for First-Time AVID and Non-AVID Students by
Economically Disadvantaged School Percentile, 2004-2005 and 2005-2006
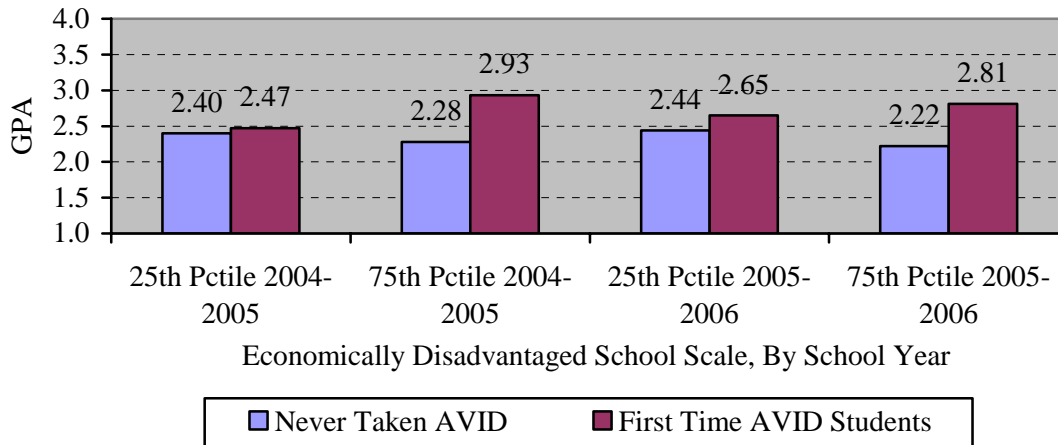
Source: AISD course enrollment and grade files, August 2006

Prior TAKS Math Performance for First-Time AVID Students

Similarly, the average TAKS math scale scores for first-time AVID students in the year before they enrolled in AVID were higher than those for non-AVID students in the same year. These differences were mediated by the percentage of economically disadvantaged students at each school. For example, at a school at the 75th percentile of the economically disadvantaged scale, first-time AVID students in 2004-2005 scored 53 points higher on the previous year's TAKS math section than did students who had not taken an AVID course ($p < .01$). At a 25th percentile school, first-time AVID students scored 9 points higher than did students who had not taken an AVID course. The TAKS math scale scores for first-time AVID students were greater and more consistent across schools than were the scores of non-AVID students, whose average TAKS scores fluctuated significantly according to the percentage of economically disadvantaged students ($p < .05$).

Figure 2: Comparison of Prior TAKS Math Scale Scores for First-Time AVID and Non-AVID Students by Economically Disadvantaged School Percentile, 2004-2005 and 2005-2006
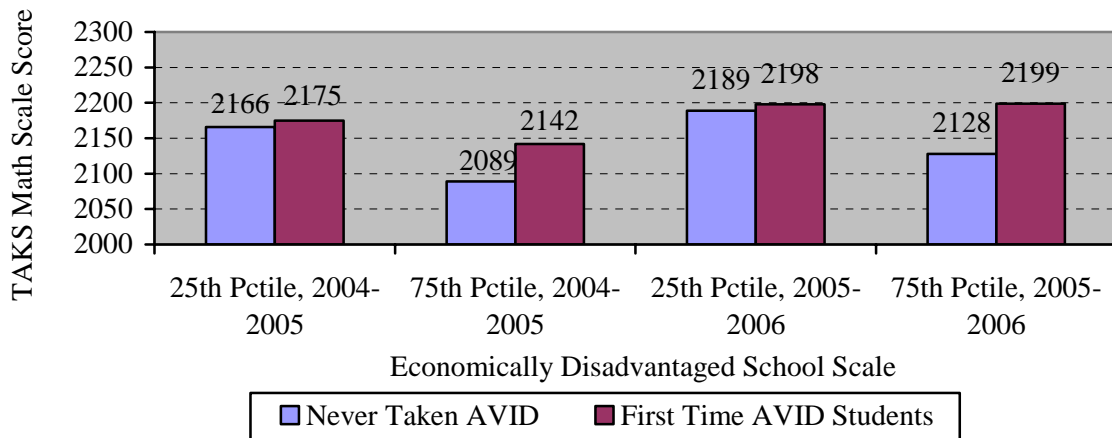
Source: AISD course enrollment and TAKS files, August 2006

Prior TAKS Reading Performance for First-Time AVID Students

Average TAKS reading scale scores for first-time AVID students in 2004-2005 and 2005-2006 were significantly greater in the previous year than were those for non-AVID students ($p < .05$). As Figure 3 illustrates, the TAKS reading scores of new AVID students were more consistent across schools than were the scores of non-AVID students, whose average TAKS scores varied significantly according to the percentage of economically disadvantaged students ($p < .01$). For example, among students at a school in the 75th percentile of the economically disadvantaged scale in 2004-2005, first-time AVID students scored 38 points higher on the previous year's TAKS math section than did students who had never taken an AVID course. In a 25th percentile school, first-time AVID students scored 5 points lower than did students who had never taken an AVID course.

Figure 3: Comparison of Prior TAKS Reading Scale Scores for First-Time AVID and Non-AVID Students by Economically Disadvantaged School Percentile, 2004-2005 and 2005-2006
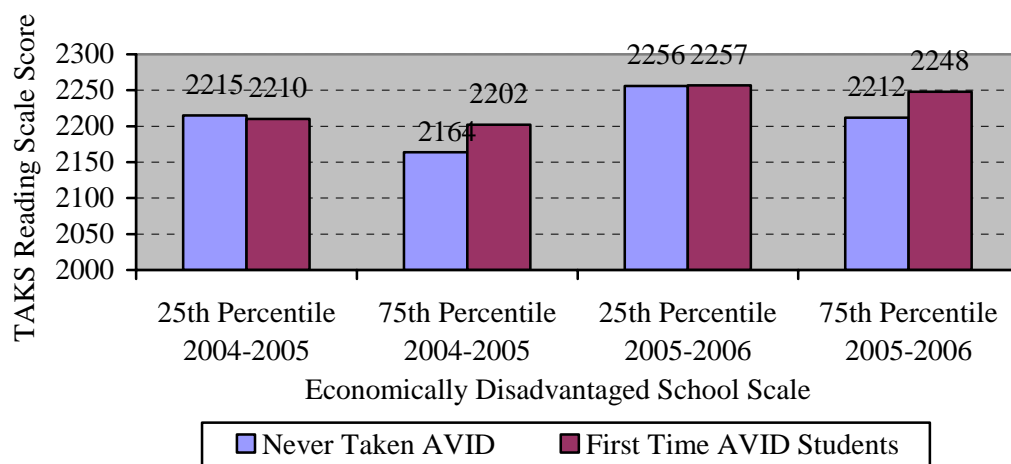
Source: AISD course enrollment and TAKS files, August 2006

Summary of Prior Academic Performance for AVID Students

Across academic performance measures, high school students who entered the AVID program for the first time during the 2004-2005 and 2005-2006 school years had higher prior achievement levels than did students who did not participate in AVID. This was an expected result, given AVID's selection criteria regarding GPA and TAKS scores. However, the percentage of economically disadvantaged students at each school mediated this relationship. These findings suggest that AVID students might have continued to achieve TAKS scores and GPAs that were higher than those of non-AVID students without enrolling in AVID.

STAGE 2: COMPARISON OF AVID AND NON-AVID STUDENT ACHIEVEMENT, 2005-2006

With the understanding that AVID students were selected according to specific criteria and that their prior academic performance was generally comparable to or better than non-AVID students within the same schools, a second stage of data analysis was conducted to determine whether the AVID program helped students to increase their academic achievement as a way to prepare for college enrollment. In these analyses, AP course-passing rates, TAKS reading and math scores, and GPAs were examined, while controlling for other variables that could influence outcomes. These control variables included student grade level, gender, race/ethnicity, LEP, GEAR UP status, at-risk status, special education status, and gifted and talented status.

AP Course Passing

Given a student's AVID course history, the likelihood of an AVID student passing an AP course was estimated. The chance that an 11th or 12th grade student would take and pass an AP course in 2005-2006 was significantly related to the number of AVID courses taken by the student and the percentage of students identified as economically disadvantaged at the

student's school. Among students who had never taken an AVID course, no difference was found with respect to AP course-passing rates between schools with different percentages of students identified as economically disadvantaged. Conversely, students who completed one or more AVID courses were increasingly likely to take and pass an AP course if they were enrolled in a school with a high percentage of students identified as economically disadvantaged. Just one AVID course in a student's course history contributed to an increase in the chance of passing an AP course from 33% to 65% for students attending a school at the 75th percentile of economically disadvantage (see Figure 4). In comparison, for students attending a school with fewer students identified as economically disadvantaged (25th percentile), taking AVID courses contributed marginally to an increase in their chance of passing an AP course.

Figure 4: Probability of Taking and Passing an AP Course by Number of AVID Courses and Economically Disadvantaged School Percentile, 2005-2006
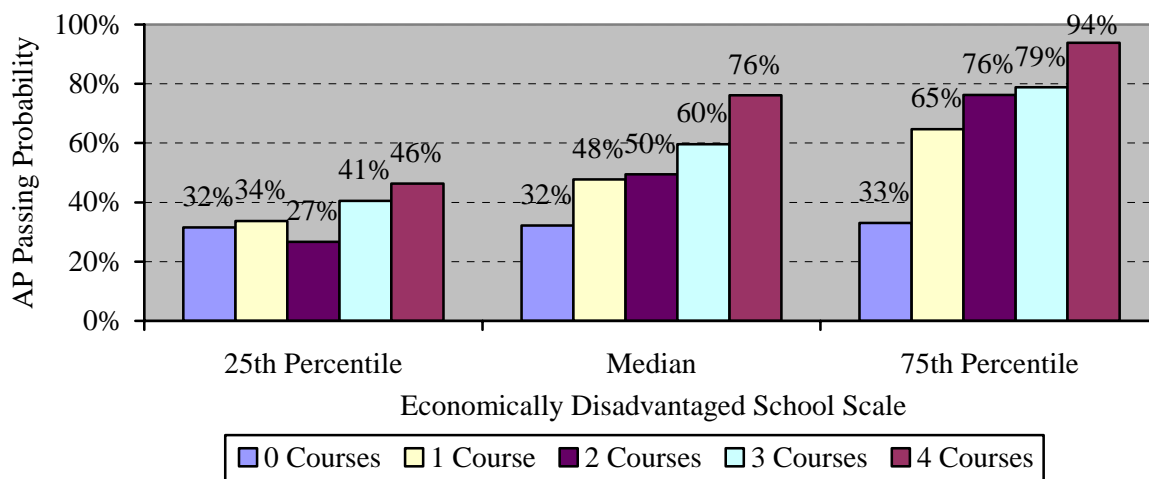
Source: AISD course enrollment files, August 2006

GPA By Previous AVID Enrollment

As an initial step in determining whether taking AVID courses was related to future changes in students' GPA, the GPAs were compared based on whether or not students had completed any AVID course before the 2005-2006 school year. Across all schools and students, taking an AVID course before the 2005-2006 school year was associated with a 0.20 increase in GPA ($p < .001$). The percentage of economically disadvantaged students at a given school significantly mediated this relationship.

In schools with high percentages of economically disadvantaged students, students who had completed AVID courses prior to 2005-2006 significantly outperformed students with no AVID course history (see Figure 8). Given that first-time AVID students from the last two

school years were already achieving higher GPAs than were non-AVID students, this initial finding does not necessarily indicate that taking AVID courses improved students' GPA.

Figure 5: Predicted GPA by Previous AVID Enrollment and Economically Disadvantaged Student Percentile, 2005-2006
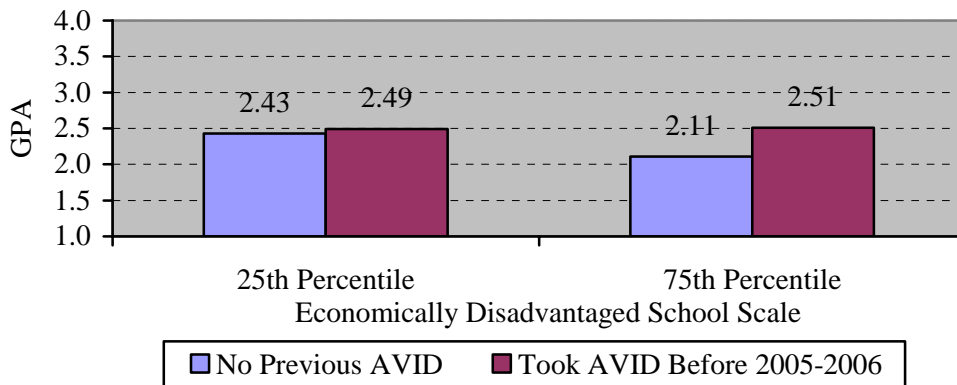
Source: AISD course enrollment and grade files, August 2006

GPA By Number of AVID Courses

Because initial findings did not indicate that AVID course completion contributed to higher course grades, the relationship between the number of AVID courses and a student's GPA was examined further. Results showed that the effect of AVID on students' GPAs appeared to be cumulative and school dependent. A statistically significant relationship ($p < .01$) was found between students' AVID course history and their GPA in 2005-2006. On average, student GPAs increased 0.12 grade points for each additional year of AVID a student had taken (see Appendix A). Again, the percentage of economically disadvantaged students enrolled within the school was a significant mediator of the relationship between AVID courses and students' GPA. To illustrate the relationship between AVID courses and GPA, Figure 6 displays the predicted GPAs for students with different numbers of AVID courses at schools at different percentiles of economically disadvantaged students. At a 25th percentile disadvantaged school, each additional AVID course corresponded to a 0.04 increase in student GPA. At a 75th percentile school, each additional AVID course corresponded to a 0.22 increase in student GPA.

Figure 6: Predicted GPA by Number of AVID Courses and Economically Disadvantaged
School Percentile, 2005-2006
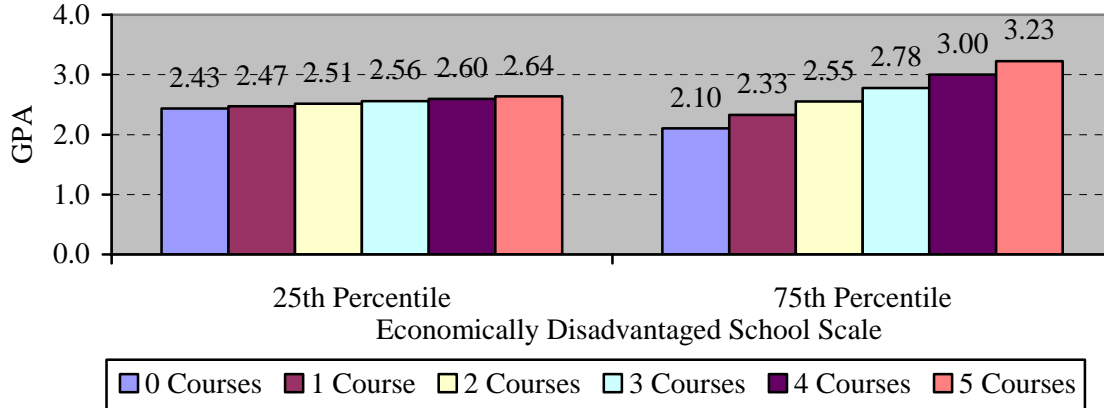
Source: AISD course enrollment and grade files, August 2006

TAKS Test Scores by Previous AVID Enrollment

As discussed previously, high school students entering the AVID program for the first time generally performed better on the previous year's TAKS math and reading tests than did non-AVID students. To determine whether taking AVID courses was related to increasing performance on TAKS tests, additional analyses were conducted. AVID and non-AVID student performance outcomes were examined across groups and over multiple years of AVID.

No statistically significant difference was found with respect to TAKS math test performance between students who had completed an AVID course and students who had never taken AVID. Students who took the TAKS math test in 2006 and who had completed an AVID course at least once before the 2005-2006 school year scored 25 points higher on average than did students with no prior AVID history (see Appendix A). This difference was not statistically significant ($p = .06$). Considering that first-time AVID students already had TAKS scale scores that were higher than those of non-AVID students, this finding does not suggest that AVID participation is a factor in student TAKS performance. Figure 7 shows the differences between students with and without previous AVID courses at schools of different economic status.

Figure 7: 2006 TAKS Math Scores by Previous AVID Enrollment and Economically
Disadvantaged School Percentile, 2005-2006
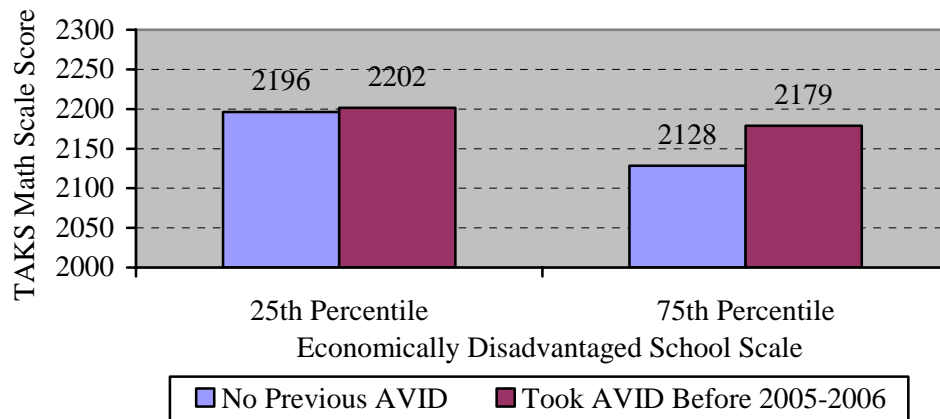
Source: AISD course enrollment and TAKS files, August 2006

Compared with non-AVID students, AVID students continued to score higher on the TAKS reading test in 2006. AVID students scored an average of 21 points higher on the TAKS reading test than did students with no prior AVID course history ($p < .001$). This finding does not necessarily suggest substantial improvement over non-AVID students, considering that first-time AVID students had already been scoring higher than non-AVID students on their previous TAKS reading tests. Figure 8 shows the differences between students with and without previous AVID courses at schools of different economic status.

Figure 8: 2006 TAKS Reading Scale Scores by Previous AVID Enrollment and
Economically Disadvantaged School Percentile, 2005-2006
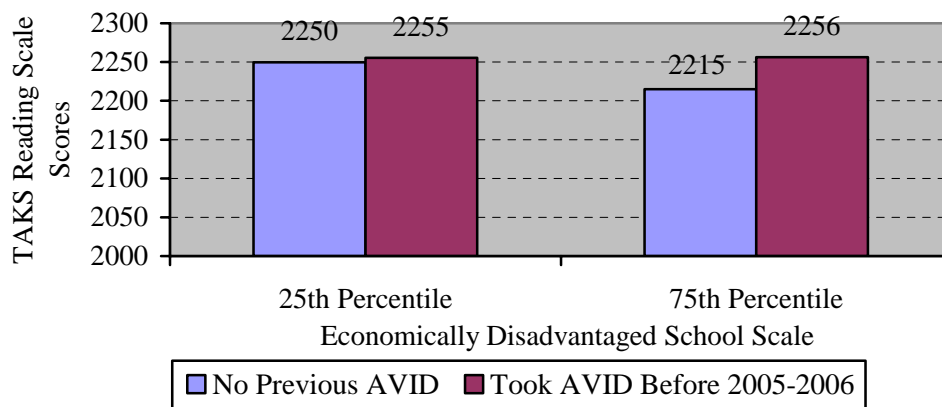
Source: AISD course enrollment and TAKS files, August 2006

TAKS Math and Reading Test Scores by Number of AVID Courses

The effect of AVID on students' TAKS reading and math test scores appeared to be cumulative and school dependent. With each additional AVID course completed by a student,

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the expected TAKS math score increased by an average of 17 points ($p < .05$), and the expected TAKS reading score increased by an average of 14 points ($p < .001$). A detailed description of results can be found in Appendix A.

The relationship between the number of AVID courses completed by a student and the student's TAKS math test scale scores was examined. The effect of AVID was dependent upon the percentage of students identified as economically disadvantaged enrolled in the school (see Figure 9). At schools with more economically disadvantaged students (75th percentile), the difference between five-time AVID students and first-time AVID students was 132 points on the TAKS math test. Conversely, at schools with fewer economically disadvantaged students (25th percentile) the difference was 19 points.

Figure 9: TAKS Math Scale Scores by Number of AVID Courses and Economically Disadvantaged School Percentile, 2005-2006
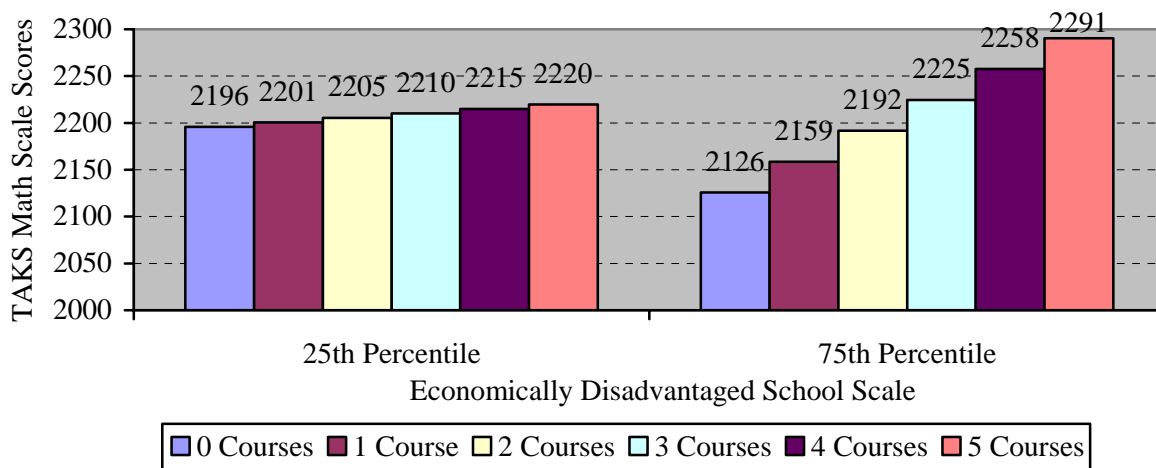
Source: AISD course enrollment and TAKS files, August 2006

The relationship between the number of AVID courses completed and TAKS reading test scores was examined. At schools with greater percentages of economically disadvantaged students (75th percentile), the difference between five-time AVID students and first-time AVID students was 90 points on the TAKS reading test. Conversely, at schools with fewer percentages of economically disadvantaged students enrolled (25th percentile), the difference was 23 points. The relationship was statistically significant ($p < .001$) and dependent upon the percentage of economically disadvantaged students enrolled in the school.

Figure 10: TAKS Reading Scale Scores, by Number of AVID Courses and Percentage of
Economically Disadvantaged Students Enrolled in the School, 2005-2006
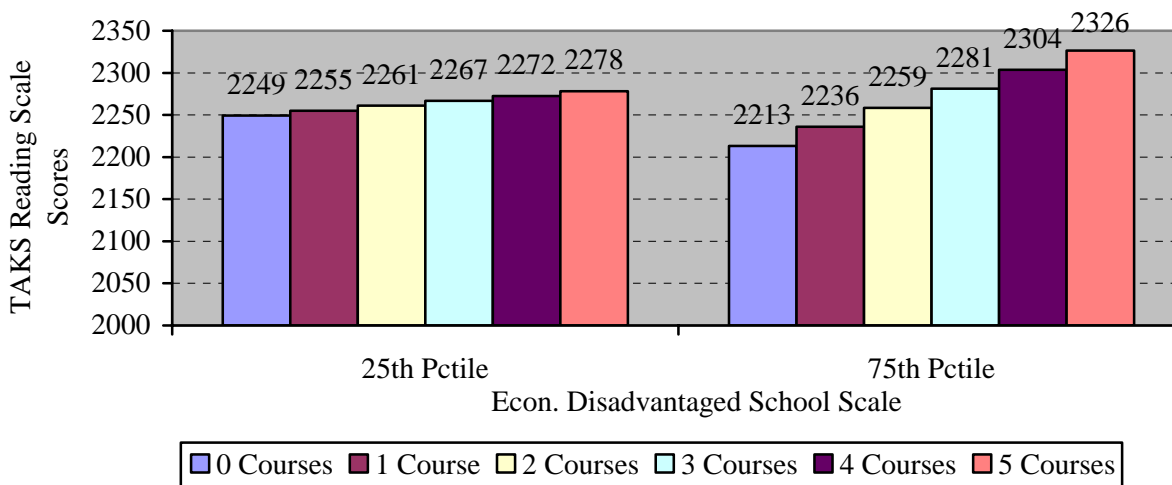
Source: AISD course enrollment and TAKS files, August 2006

DISCUSSION

This evaluation study's purpose was to examine whether the AVID program helped students become better prepared academically for college, thereby reducing the college enrollment gap between students of different ethnic and socioeconomic backgrounds. The study focused primarily on common indicators of college preparedness (e.g., AP course passing, GPA, and TAKS test scores) in 2005-2006. Its approach differed greatly from previous AVID studies, which focused directly on college enrollment rates of former AVID students and different types of AVID implementation methods.

Based on the overall results of the evaluation study, sustained participation in the AVID program in AISD appeared to contribute to significantly higher percentages of students taking and passing AP courses, significantly higher student GPAs, and significantly higher TAKS scale scores in reading and math. These student outcomes exceeded the differences that already existed between most AVID and non-AVID students prior to entering the AVID program. The number of AVID courses taken by a student was a significantly stronger indicator of academic performance than was whether or not the student had ever completed an AVID course.

However, these results were not consistent across the district or consistent among all AVID students. They were heavily dependent on two factors: the poverty level of the school attended and students' ability to maintain enrollment in AVID over multiple years. Students who completed AVID courses in schools with a greater percentage of students identified as economically disadvantaged demonstrated greater improvement than did AVID students in schools with fewer students identified as economically disadvantaged. For example, a student in his 5th year of AVID attending a 75th percentile economically disadvantaged school could be

expected to earn a GPA almost a full grade point higher (0.9 points) than would a student at the same school with 1 year of AVID, even if they were in the same grade and had the same socioeconomic background. Similarly, a student at a 75th percentile school with 4 or more years of AVID had a 94% chance of taking and passing an AP course, compared to a 33% chance for the same type of student at the same school who had no AVID experience.

It remains unclear to what extent these two factors (i.e., the percentage of economically disadvantaged students at a student's school and the number of AVID courses completed by the student) were independent of each other. Although the analyses revealed no unique effect of starting AVID in middle school as opposed to in high school, most students who began taking AVID in middle school went on to high schools with high percentages of students identified as economically disadvantaged. Consequently, most AVID students at these kinds of high schools got a head start that allowed them to complete more AVID courses than did students who attended high schools with fewer percentages of students identified as economically disadvantaged. For instance, nearly half (48.5%) of the AVID students at Lanier, Reagan, McCallum, and LBJ (non-LASA) began taking AVID in middle school. Students at these schools took more AVID courses and showed the most academic improvement, on average, compared with the performance of students at other schools in the study. At three of these four schools, at least 75% of the students were identified as economically disadvantaged. In contrast, at all other high schools, 8.5% of AVID students took their first AVID course in middle school and showed less improvement with respect to the number of AVID courses taken. Because most AVID students at high schools other than Lanier, Reagan, McCallum, and LBJ (non-LASA) did not previously attend middle schools that offered AVID, they could not begin taking AVID until 9th grade.

Finally, the results indicated that the high schools whose students benefited the most from AVID were among those that previously had the fewest graduates go on to college. Lanier, Reagan, and LBJ (non-LASA) all had low rates of college enrollment among recent graduating classes, but their AVID students completed the most AVID courses, on average, and showed the greatest increases in TAKS scores, GPA, and AP course passing. This finding strongly suggests that the high schools whose students appeared to benefit most from taking AVID courses had students with the greatest need for help in becoming college eligible. Schools that already had high rates of college enrollment among recent graduating classes showed the least improvement with respect to AVID course completion.

CONCLUSION

The results of this study demonstrate that AVID courses have helped AISD students become better prepared academically for college, and that most of this improvement occurred at high schools that in recent years sent the fewest students to college (Alderete et al., 2006). Although the ultimate measure of AVID's success in AISD would come from a study of college enrollment rates for AVID students (currently unavailable), this study provided strong indications that students who have taken multiple AVID courses are putting themselves on the right track for college eligibility, based on academic preparation.

Given that Lanier, Reagan, and LBJ (non-LASA) have recently sent fewer graduates on to college than have most other AISD high schools, this finding suggests that the schools whose students have the greatest need for help in becoming college eligible benefit the most from AVID.

RECOMMENDATIONS

Although previous district evaluation reports described overall AVID program participation, this evaluation study was the first comprehensive study of AVID that accounted for both differences between students and differences between schools. It was intended to provide information for district and AVID administrators as they measure their progress toward meeting articulated goals and to support ongoing decision making for program improvement. The study also identified additional AVID-related issues that merit further investigation. The following recommendations are based on the findings of this study.

- **Emphasize the importance of completing multiple AVID courses, beginning in middle school if possible.**

  The AVID program is most effective in increasing academic achievement when a student receives AVID instruction for multiple years. Though it is not necessary for students to begin AVID in middle school, getting an early start does makes it easier for students to acquire multiple years of AVID instruction and to begin applying the study skills that result in greater academic achievement earlier in high school.

- **Increase AVID participation in schools with greater percentages of students identified as economically disadvantaged.**

  The AVID students who performed best in school attended high schools with high percentages of students identified as economically disadvantaged and high percentages of racial and ethnic minorities. In recent years, these schools have shown relatively low percentages of postsecondary enrollment. Therefore, it appears these types of schools have both the greatest need for AVID and the greatest potential for better academic performance due to AVID.

- **With consideration of student and school level differences, further study of the AVID program is warranted to investigate other potentially important factors and outcomes not included in this evaluation.**
  This report described the relationship between AVID courses and student academic performance at schools with different socioeconomic compositions. Based on these results, a host of new questions have emerged. For example:
  1. Given the importance of sustaining enrollment in AVID over multiple years, did different schools have different AVID student retention rates?
  2. What conditions or factors contributed to retention rates?
  3. Did individual AVID teachers influence student AVID participation decisions (e.g., retention) and academic performance?
  4. Did AVID contribute to student performance on other measures, such as SAT scores, ACT scores, and AP test scores?

  Additionally, other methods of inquiry should be considered, such as student and teacher surveys and focus groups. These data sources could reveal other factors that influence student academic achievement and college preparation. Such factors might include differences in school or class climate, different methods of instruction, and different areas of emphasis in each AVID course. Analyses should continue to account for variability between students and schools.

- **Obtain student-level postsecondary enrollment data to compare college enrollment rates of AVID and non-AVID students of similar socioeconomic backgrounds.**
  The most direct method of evaluating AVID is to determine how many of its participants enroll in college. To do this, the evaluator will obtain college enrollment data for individual students from the class of 2006, and then compare former AVID students with non-AVID students who have similar socioeconomic backgrounds. This method should yield a definitive answer to the question of whether AVID helped close the college enrollment gap in AISD.

APPENDICES

APPENDIX A: HLM OUTPUT AND STATISTICS

Each HLM output table contains the coefficient (B), the standard error, the *T* ratio, degrees of freedom (*d.f.*), and *p* value for each student-level and school-level variable. The coefficient (B) of the intercept represents the district average of the outcome measure if the values of all the other variables in the model are set to zero. For example, in Table A1, 1.885 is the predicted average 2003-2004 GPA of a student who attended high school in 2004-2005, and was a White female in 9th grade who was not economically disadvantaged, not LEP, not special ed, not gifted/talented, not at-risk, did not take AVID before 2004-2005, and went to a school at the median of the economically disadvantaged school scale. The coefficient of each variable after the intercept represents the change in GPA that is observed with every unit increase in that variable, independent of all other variables. For example, the "12th grade" coefficient of 1.180 indicates that 12th graders earned GPAs 1.180 points higher than 9th graders, on average.

The within school variance (σ^2), between school variance (τ), and total variance, explained by each model, are noted below each table. The "explained variance" represents the proportion of variance in the outcome (e.g., GPA, TAKS scores) that can be explained by the variables included in the model. For example, if a model explains 80% of the between-school variance, then the particular set of variables used in the model accounts for 80% of the observed difference in scores that is directly attributable to differences *between schools* and not students. If a model explains 30% of the within-school variance, then the set of variables in the model accounts for 30% of the differences *within each individual school,* or *between individual students*. The "total variance" represents the proportion of variance that is explained both between and within schools simultaneously.

ANALYSIS - STAGE 1

Table A1: AVID Status by 2003-2004 GPA, 2004-2005

Variable	B	Std Error	*T* ratio	*d.f.*	*p* value
INTERCEPT	1.885	0.084	22.48	11	0.000
ECON. DISADV. (2)*	-0.004	0.003	-1.49	11	0.164
MALE	-0.252	0.013	-20.09	14937	0.000
12TH GRADE	1.180	0.029	40.05	14937	0.000
11TH GRADE	1.288	0.029	44.33	14937	0.000
10TH GRADE	1.080	0.028	38.53	14937	0.000
HISPANIC	-0.367	0.017	-21.74	14937	0.000
AFR. AMER.	-0.463	0.023	-20.54	14937	0.000
ECON. DISADV.	-0.091	0.016	-5.65	14937	0.000
LEP	-0.100	0.024	-4.25	14937	0.000
SPECIAL ED	-0.147	0.021	-7.15	14937	0.000
GIFTED/TALENTED	0.503	0.025	20.26	14937	0.000
AT RISK	-0.507	0.015	-33.04	14937	0.000
GEAR UP	-0.082	0.020	-4.06	14937	0.000
TOOK AVID BEFORE AND DURING 2004	0.474	0.056	8.49	14937	0.000
ECON. DISADV. (2)*	0.008	0.002	3.73	14937	0.000
TOOK AVID BEFORE 2004	0.127	0.045	2.84	14937	0.005
ECON. DISADV. (2)*	0.007	0.002	4.33	14937	0.000
TOOK FIRST AVID IN 2004	0.379	0.089	4.24	14937	0.000
ECON. DISADV. (2)*	0.007	0.004	2.01	14937	0.044

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 34%. Between school variance (τ) explained = 68%.
Total variance explained = 42%.

Table A2: AVID Status by 2004-2005 GPA, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2.142	0.051	42.03	11	0.000
ECON. DISADV. (2)*	-0.002	0.002	-1.49	11	0.164
MALE	-0.200	0.011	-17.52	14074	0.000
10TH GRADE	1.081	0.026	42.20	14074	0.000
11TH GRADE	1.226	0.026	47.41	14074	0.000
12TH GRADE	1.368	0.028	49.73	14074	0.000
AFR. AMER.	-0.341	0.021	-16.17	14074	0.000
HISPANIC	-0.266	0.016	-17.06	14074	0.000
ECON. DISADV.	-0.044	0.014	-3.08	14074	0.002
LEP	-0.142	0.022	-6.50	14074	0.000
GIFTED/TALENTED	0.311	0.023	13.76	14074	0.000
AT RISK	-1.045	0.014	-74.66	14074	0.000
GEAR UP	-0.113	0.020	-5.61	14074	0.000
TOOK AVID BEFORE 2004	-0.054	0.030	-1.78	14074	0.074
ECON. DISADV. (2)*	0.003	0.001	2.53	14074	0.012
TOOK AVID BEFORE AND DURING 2004	0.329	0.037	8.88	14074	0.000
ECON. DISADV. (2)*	0.005	0.001	3.34	14074	0.001
TOOK FIRST AVID IN 2004	0.320	0.074	4.33	14074	0.000
ECON. DISADV. (2)*	0.011	0.003	3.85	14074	0.000

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 51%. Between school variance (τ) explained = 91%.
Total variance explained = 60%

Table A3: AVID Status by 2004 TAKS Math Scale Score, 2004-2005

Variable	B	Std Error	*T* ratio	*d.f.*	*p* value
INTERCEPT	2218.06	8.90	249.31	11	0.000
ECON. DISADV. (2)*	-1.54	0.32	-4.89	11	0.000
MALE	29.17	2.33	12.54	16431	0.000
12TH GRADE	47.56	3.51	13.55	16431	0.000
11TH GRADE	29.60	3.27	9.05	16431	0.000
10TH GRADE	30.03	3.18	9.43	16431	0.000
HISPANIC	-71.04	3.17	-22.44	16431	0.000
AFR. AMER.	-116.70	4.30	-27.16	16431	0.000
ECON. DISADV.	-21.74	3.09	-7.04	16431	0.000
LEP	-70.30	4.71	-14.91	16431	0.000
SPECIAL ED	-83.32	5.04	-16.54	16431	0.000
GIFTED/TALENTED	131.33	4.04	32.51	16431	0.000
AT RISK	-146.85	2.85	-51.46	16431	0.000
MAGNET	53.47	9.55	5.60	16431	0.000
TOOK AVID BEFORE AND DURING 2004	18.93	9.91	1.91	16431	0.056
ECON. DISADV. (2)*	1.79	0.38	4.67	16431	0.000
TOOK AVID BEFORE 2004	16.10	8.25	1.95	16431	0.051
ECON. DISADV. (2)*	0.99	0.30	3.33	16431	0.001
TOOK FIRST AVID IN 2004	27.83	9.07	3.07	16431	0.003
ECON. DISADV. (2)*	0.84	0.37	2.30	16431	0.021

Source: AISD course enrollment and TAKS files, August 2006

*Level 2, grand-mean centered

Note: Within school variance (σ^2) explained = 37%. Between school variance (τ) explained = 95%.
Total variance explained = 55%

Table A4: AVID Status by 2005 TAKS Math Scale Score, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2262.72	7.76	291.45	11	0.000
ECON. DISADV. (2)*	-1.21	0.27	-4.46	11	0.001
MALE	26.70	2.21	12.07	16219	0.000
10TH GRADE	39.83	3.04	13.10	16219	0.000
11TH GRADE	29.63	3.15	9.42	16219	0.000
12TH GRADE	87.26	3.19	27.39	16219	0.000
AFR. AMER.	-92.94	4.18	-22.24	16219	0.000
HISPANIC	-54.80	3.01	-18.18	16219	0.000
ECON. DISADV.	-16.04	2.84	-5.65	16219	0.000
LEP	-79.64	4.51	-17.65	16219	0.000
SPECIAL ED	-68.58	5.53	-12.41	16219	0.000
GIFTED/TALENTED	116.39	3.86	30.14	16219	0.000
AT RISK	-193.68	2.68	-72.35	16219	0.000
TOOK AVID BEFORE 2005	10.13	6.14	1.65	16219	0.099
ECON. DISADV. (2)*	0.22	0.23	0.97	16219	0.332
TOOK AVID BEFORE AND DURING 2005	25.47	7.41	3.44	16219	0.001
ECON. DISADV. (2)*	1.03	0.29	3.51	16219	0.001
TOOK FIRST AVID IN 2005	36.35	11.22	3.24	11	0.008
ECON. DISADV. (2)*	1.21	0.45	2.71	11	0.021

Source: AISD course enrollment and TAKS files, August 2006

*Level 2, grand-mean centered

Note: Within school variance (σ^2) explained = 45%. Between school variance (τ) explained = 90%.
Total variance explained = 58%

Table A5: AVID Status by 2004 TAKS Reading Scale Score, 2004-2005

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2311.62	4.18	553.61	11	0.000
ECON. DISADV. (2)*	-1.02	0.13	-8.12	11	0.000
MALE	-23.90	1.83	-13.09	16547	0.000
12TH GRADE	-20.60	2.75	-7.48	16547	0.000
11TH GRADE	-24.94	2.56	-9.75	16547	0.000
10TH GRADE	-24.26	2.49	-9.73	16547	0.000
HISPANIC	-38.62	2.48	-15.57	16547	0.000
AFR. AMER.	-64.65	3.36	-19.24	16547	0.000
ECON. DISADV.	-23.25	2.42	-9.60	16547	0.000
LEP	-135.46	3.75	-36.15	16547	0.000
SPECIAL ED	-71.63	3.81	-18.82	16547	0.000
GIFTED/TALENTED	78.38	3.18	24.68	16547	0.000
AT RISK	-100.95	2.24	-45.06	16547	0.000
MAGNET	48.94	6.71	7.30	16547	0.000
TOOK AVID BEFORE AND DURING 2004	25.08	7.82	3.21	16547	0.002
ECON. DISADV. (2)*	1.01	0.30	3.33	16547	0.001
TOOK AVID BEFORE 2004	22.91	6.56	3.49	16547	0.001
ECON. DISADV. (2)*	0.69	0.24	2.90	16547	0.004
TOOK FIRST AVID IN 2004	14.38	7.17	2.01	16547	0.045
ECON. DISADV. (2)*	0.82	0.29	2.85	16547	0.005

Source: AISD course enrollment and TAKS files, August 2006

*Level 2, grand-mean centered

Note: Within school variance (σ^2) explained = 36%. Between school variance (τ) explained = 98%.
Total variance explained = 52%

Table A6: AVID Status by 2005 TAKS Reading Scale Score, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2390.39	3.296	725.19	11	0.000
ECON. DISADV. (2)*	-0.88	0.085	-10.34	11	0.000
MALE	-26.25	2.054	-12.78	16403	0.000
10TH GRADE	-30.12	2.580	-11.68	16403	0.000
11TH GRADE	-61.66	2.647	-23.29	16403	0.000
AFR. AMER.	-61.52	3.850	-15.98	16403	0.000
HISPANIC	-36.36	2.792	-13.02	16403	0.000
ECON. DISADV.	-26.23	2.624	-10.00	16403	0.000
LEP	-186.27	4.121	-45.20	16403	0.000
SPECIAL ED	-67.95	4.954	-13.72	16403	0.000
GIFTED/TALENTED	70.67	3.550	19.91	16403	0.000
AT RISK	-133.51	2.490	-53.61	16403	0.000
GEAR UP	25.51	3.573	7.14	16403	0.000
TOOK AVID BEFORE 2005	21.70	5.676	3.82	16403	0.000
ECON. DISADV. (2)*	0.85	0.214	3.96	16403	0.000
TOOK AVID BEFORE AND DURING 2005	30.08	6.943	4.33	16403	0.000
ECON. DISADV. (2)*	0.33	0.273	1.22	16403	0.222
TOOK FIRST AVID IN 2005	15.68	7.164	2.19	16403	0.028
ECON. DISADV. (2)*	0.67	0.301	2.23	16403	0.026

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 24%. Between school variance (τ) explained = 99%.
Total variance explained = 40%

ANALYSIS - STAGE 2

Table A7: 2005-2006 AP Course-Passing Odds by Number of AVID Courses (Logistic HLM)

Variable	Coefficient	Error	*T* ratio	d.f.	Odds Ratio	*p* value	95% CI
INTERCEPT	0.93	0.42	2.21	12	2.53	0.05	(1.01,6.33)
MALE	-0.45	0.05	-8.52	9224	0.64	0.00	(0.57,0.71)
AFR. AMER.	-1.19	0.10	-11.75	9224	0.30	0.00	(0.25,0.37)
HISPANIC	-0.60	0.07	-8.62	9224	0.55	0.00	(0.48,0.63)
GIFTED/TALENTED	1.36	0.13	10.64	9224	3.90	0.00	(3.04,5.01)
GEARUP	0.18	0.07	2.41	9224	1.20	0.02	(1.03,1.38)
ECON. DISADV.	-0.18	0.07	-2.51	9224	0.84	0.01	(0.73,0.96)
LEP	-0.89	0.16	-5.49	9224	0.41	0.00	(0.30,0.56)
SPECIAL ED	-2.02	0.30	-6.82	9224	0.13	0.00	(0.07,0.24)
AT-RISK	-1.63	0.06	-28.38	9224	0.20	0.00	(0.18,0.22)
1 AVID COURSE	0.63	0.27	2.30	11	1.87	0.04	(1.03,3.40)
ECON. DISADV. (2)*	0.02	0.01	2.69	11	1.02	0.02	(1.00,1.04)
2 AVID COURSES	0.67	0.23	2.90	9224	1.95	0.00	(1.24,3.06)
ECON. DISADV. (2)*	0.04	0.01	4.49	9224	1.04	0.00	(1.02,1.06)
3 AVID COURSES	1.10	0.26	4.28	9224	3.00	0.00	(1.81,4.95)
ECON. DISADV. (2)*	0.03	0.01	3.05	9224	1.03	0.00	(1.01,1.05)
4 OR MORE AVID COURSES	1.84	0.67	2.76	11	6.31	0.02	(1.46,27.34)
ECON. DISADV. (2)*	0.05	0.02	2.39	11	1.06	0.04	(1.00,1.11)

Source: AISD course enrollment files, August 2006
*Level 2, grand-mean centered

Table A8: GPA by Previous AVID Enrollment, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2.94	0.06	52.44	11	0.00
ECON. DISADV. (2)*	-0.01	0.00	-3.05	11	0.01
MALE	-0.24	0.01	-20.50	20362	0.00
AFR. AMER.	-0.44	0.02	-20.89	20362	0.00
HISPANIC	-0.34	0.02	-21.06	20362	0.00
10TH GRADE	0.24	0.02	14.80	20362	0.00
11TH GRADE	0.37	0.02	22.41	20362	0.00
12TH GRADE	0.58	0.02	34.36	20362	0.00
GIFTED/TALENTED	0.49	0.02	21.75	20362	0.00
ECON. DISADV.	-0.08	0.02	-5.55	20362	0.00
LEP	-0.08	0.02	-3.49	20362	0.00
SPECIAL ED	-0.12	0.03	-4.91	20362	0.00
AT RISK	-0.95	0.01	-68.04	20362	0.00
AVID BEFORE 2005-2006	0.20	0.04	4.96	11	0.00
ECON. DISADV. (2)*	0.01	0.00	4.26	11	0.00

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 35%. Between school variance (τ) explained = 86%.
Total variance explained = 48%

Table A9: GPA by Number of AVID Courses, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2.93	0.06	52.21	11	0.000
ECON. DISADV. (2)*	-0.01	0.00	-3.12	11	0.010
MALE	-0.24	0.01	-20.25	20362	0.000
AFR. AMER.	-0.44	0.02	-20.90	20362	0.000
HISPANIC	-0.34	0.02	-21.21	20362	0.000
10TH GRADE	0.24	0.02	15.04	20362	0.000
11TH GRADE	0.37	0.02	22.59	20362	0.000
12TH GRADE	0.58	0.02	34.48	20362	0.000
GIFTED/TALENTED	0.48	0.02	21.63	20362	0.000
ECON. DISADV.	-0.09	0.02	-5.85	20362	0.000
LEP	-0.07	0.02	-3.25	20362	0.002
SPECIAL ED	-0.12	0.03	-4.78	20362	0.000
AT RISK	-0.95	0.01	-68.03	20362	0.000
NUMBER OF AVID CRS	0.12	0.02	6.25	11	0.000
ECON. DISADV. (2)*	0.00	0.00	4.69	11	0.001

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 36%. Between school variance (τ) explained = 89%.
Total variance explained = 48%

Table A10: TAKS Math Scale Scores by Previous AVID Enrollment, 2005-2006

Variable	B	Std Error	*T* ratio	*d.f.*	*p* value
INTERCEPT	2269.93	11.16	203.41	11	0.00
ECON. DISADV. (2)*	-1.31	0.41	-3.23	11	0.01
MALE	22.00	2.63	8.35	13290	0.00
AFR. AMER.	-114.88	4.84	-23.75	13290	0.00
HISPANIC	-68.58	3.60	-19.04	13290	0.00
10TH GRADE	7.83	3.13	2.50	13290	0.01
11TH GRADE	74.32	3.30	22.51	13290	0.00
GIFTED/TALENTED	129.91	4.18	31.11	13290	0.00
ECON. DISADV.	-20.19	3.29	-6.13	13290	0.00
LEP	-67.08	5.02	-13.37	13290	0.00
SPECIAL ED	-90.75	5.52	-16.44	13290	0.00
AT RISK	-155.16	3.13	-49.55	13290	0.00
AVID BEFORE 2005-2006	24.97	11.89	2.10	11	0.06
ECON. DISADV. (2)*	0.87	0.46	1.91	11	0.08

Source: AISD course enrollment and TAKS files, August 2006

*Level 2, grand-mean centered

Note: Within school variance (σ^2) explained = 39%. Between school variance (τ) explained = 86%.
Total variance explained = 52%

Table A11: TAKS Math Scale Scores by Number of AVID Courses, 2005-2006

Variable	B	Std Error	*T* ratio	*d.f.*	*p* value
INTERCEPT	2268.23	11.15	203.51	11	0.00
ECON. DISADV. (2)*	-1.36	0.40	-3.36	11	0.01
MALE	22.45	2.63	8.53	13290	0.00
AFR. AMER.	-114.49	4.82	-23.76	13290	0.00
HISPANIC	-68.68	3.60	-19.09	13290	0.00
10TH GRADE	8.30	3.11	2.67	13290	0.01
11TH GRADE	74.31	3.28	22.67	13290	0.00
GIFTED/TALENTED	129.88	4.17	31.18	13290	0.00
ECON. DISADV.	-21.12	3.29	-6.42	13290	0.00
LEP	-65.48	5.01	-13.07	13290	0.00
SPECIAL ED	-89.89	5.51	-16.31	13290	0.00
AT RISK	-154.77	3.12	-49.54	13290	0.00
NUMBER OF AVID CRS	16.96	5.79	2.93	11	0.01
ECON. DISADV. (2)*	0.55	0.22	2.47	11	0.03

Source: AISD course enrollment and grade files, August 2006

*Level 2, grand-mean centered

Note: Within school variance (σ^2) explained = 39%. Between school variance (τ) explained = 89%.
Total variance explained = 54%

Table A12: TAKS Reading Scale Scores by Previous AVID Enrollment, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2352.48	6.16	381.97	11	0.00
ECON. DISADV. (2)*	-0.68	0.21	-3.26	11	0.01
MALE	-38.45	2.23	-17.28	13431	0.00
AFR. AMER.	-65.67	4.10	-16.01	13431	0.00
HISPANIC	-43.27	3.05	-14.21	13431	0.00
10TH GRADE	-24.23	2.68	-9.04	13431	0.00
11TH GRADE	18.21	2.82	6.46	13431	0.00
12TH GRADE	-31.82	7.50	-4.25	13431	0.00
GIFTED/TALENTED	72.52	3.54	20.48	13431	0.00
ECON. DISADV.	-21.36	2.80	-7.62	13431	0.00
LEP	-140.88	4.22	-33.35	13431	0.00
SPECIAL ED	-82.56	4.45	-18.54	13431	0.00
AT RISK	-85.26	2.66	-32.08	13431	0.00
AVID BEFORE 2005-2006	21.17	5.30	4.00	13431	0.00
ECON. DISADV. (2)*	0.69	0.21	3.36	13431	0.00

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 32%. Between school variance (τ) explained = 94%.
Total variance explained = 45%

Table A13: TAKS Reading Scale Scores by Number of AVID Courses, 2005-2006

Variable	B	Std Error	T ratio	d.f.	p value
INTERCEPT	2351.36	6.16	381.96	11	0.00
ECON. DISADV. (2)*	-0.70	0.21	-3.36	11	0.01
MALE	-38.12	2.22	-17.14	13431	0.00
AFR. AMER.	-65.60	4.10	-16.00	13431	0.00
HISPANIC	-43.60	3.05	-14.32	13431	0.00
10TH GRADE	-23.93	2.67	-8.96	13431	0.00
11TH GRADE	18.36	2.81	6.55	13431	0.00
12TH GRADE	-30.87	7.49	-4.12	13431	0.00
GIFTED/TALENTED	72.54	3.54	20.51	13431	0.00
ECON. DISADV.	-22.08	2.80	-7.88	13431	0.00
LEP	-139.81	4.22	-33.10	13431	0.00
SPECIAL ED	-82.06	4.45	-18.44	13431	0.00
AT RISK	-84.86	2.65	-31.97	13431	0.00
NUMBER OF AVID CRS	13.04	2.39	5.46	13431	0.00
ECON. DISADV. (2)*	0.33	0.09	3.50	13431	0.00

Source: AISD course enrollment and grade files, August 2006
*Level 2, grand-mean centered
Note: Within school variance (σ^2) explained = 33%. Between school variance (τ) explained = 94%.
Total variance explained = 45%

APPENDIX B: BACKGROUND DATA FOR 2005-2006 AISD HIGH SCHOOL STUDENTS AND AVID PARTICIPATION

AVID Middle Schools:

- Bedichek
- Dobie
- Kealing
- Lamar
- Burnet
- Webb

AVID High Schools:

- Austin
- Johnston
- Lanier
- McCallum
- Reagan
- Travis
- Crockett
- Anderson
- LBJ
- Akins

Table B1: High School Enrollment Frequencies by Race/Ethnicity, 2005-2006

School	Enroll.	% of Total Enroll.	White	African American	Hispanic	Other
Austin	2229	10%	53%	7%	39%	1%
Johnston	884	4%	4%	17%	78%	1%
Lanier	1761	8%	12%	16%	68%	4%
McCallum	1750	8%	34%	14%	49%	3%
Reagan	1148	5%	6%	34%	58%	2%
Travis	1726	8%	11%	13%	75%	1%
Crockett	2138	10%	32%	10%	56%	2%
Anderson	2171	10%	60%	8%	27%	5%
LBJ (regular)	931	4%	5%	48%	47%	0%
LBJ (LASA)	820	4%	50%	8%	30%	12%
Bowie	2744	13%	63%	4%	29%	4%
Garza	391	2%	55%	13%	30%	2%
Akins	2537	12%	22%	12%	64%	2%
Total	21230	100%	35%	13%	49%	3%

Source: AISD student enrollment files, August 2006

Table B2: High School Enrollment Frequencies by Other Student Characteristics and Grade, 2005-2006

School	GEAR UP	Econ. Disadv.	LEP	Special Ed	At-Risk	9th Grade	10th Grade	11th Grade	12th Grade
Austin	5%	27%	4%	7%	47%	30%	26%	22%	21%
Johnston	12%	83%	21%	9%	84%	40%	22%	20%	19%
Lanier	16%	78%	29%	6%	80%	42%	19%	20%	19%
McCallum	9%	18%	4%	5%	53%	33%	24%	21%	23%
Reagan	18%	80%	23%	6%	80%	38%	23%	19%	20%
Travis	16%	79%	22%	7%	80%	34%	27%	18%	21%
Crockett	6%	50%	9%	8%	71%	34%	25%	23%	19%
Anderson	3%	18%	3%	4%	39%	28%	26%	23%	24%
LBJ (regular)	14%	75%	15%	6%	80%	34%	26%	21%	19%
LBJ (LASA)	17%	20%	0%	1%	16%	29%	26%	22%	22%
Bowie	1%	8%	1%	6%	36%	27%	27%	24%	22%
Garza	15%	33%	2%	6%	73%	0%	8%	33%	59%
Akins	12%	54%	9%	7%	68%	32%	25%	22%	21%
Total	9%	41%	10%	6%	60%	32%	25%	21%	22%

Source: AISD student enrollment files, August 2006

Table B3: 2005-2006 High School Students in AVID in 2005-2006 and/or Before

School	AVID 2005-2006	AVID Before 2005-2006	Percent Ever Took AVID	Number Ever Took AVID
Austin	4%	3%	6%	123
Johnston	5%	5%	9%	78
Lanier	6%	13%	14%	252
McCallum	5%	7%	8%	137
Reagan	10%	13%	17%	191
Travis	4%	4%	6%	109
Crockett	5%	4%	7%	156
Anderson	2%	3%	4%	80
LBJ (regular)	11%	13%	18%	163
LBJ (LASA)	1%	2%	3%	22
Bowie	0%	2%	2%	44
Garza	0%	8%	8%	30
Akins	3%	3%	5%	132
Total	4%	5%	7%	1518

Source: AISD course enrollment files, August 2006

Table B4: Number of 2005-2006 AVID Students by School and Grade Level

School	9th	10th	11th	12th	Total	% 9th	% 10th	% 11th	% 12th
Austin	49	29	*	*	93	53%	31%	*	*
Johnston	21	12	14	0	47	45%	26%	30%	0%
Lanier	41	27	22	18	108	38%	25%	20%	17%
McCallum	17	25	18	20	80	21%	31%	23%	25%
Reagan	41	24	24	24	113	36%	21%	21%	21%
Travis	31	27	13	0	71	44%	38%	18%	0%
Crockett	61	32	*	*	108	56%	30%	*	*
Anderson	15	18	*	*	39	38%	46%	*	*
LBJ (regular)	46	17	24	20	107	43%	16%	22%	19%
LBJ (LASA)	*	*	*	*	10	*	*	*	*
Bowie	*	*	*	*	*	*	*	*	*
Garza	*	*	*	*	*	*	*	*	*
Akins	44	24	*	*	86	51%	28%	*	*
Total	369	240	157	99	865	43%	28%	18%	11%

Source: AISD course enrollment files, August 2006
*Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is between 1 and 5, then the next lowest cell count in the row or column is also masked.
Note: Bowie and Garza did have AVID students in 2005-2006. They had completed AVID in different schools before transferring in mid-year.

Table B5: Number of Students by Number of AVID Courses and School, 2005-2006

School	1 AVID Course	2 AVID Courses	3 AVID Courses	4 AVID Courses	5 AVID Courses	6 AVID Courses	Mean Number of AVID Courses	Median AVID Courses
Austin	83	33	7	0	0	0	1.38	1.00
Johnston	56	18	*	0	*	0	1.36	1.00
Lanier	85	80	43	24	13	7	2.29	2.00
McCallum	62	33	21	13	*	*	2.07	2.00
Reagan	83	58	28	16	*	*	1.98	2.00
Travis	76	21	11	*	*	*	1.43	1.00
Crockett	104	42	*	*	0	0	1.40	1.00
Anderson	44	23	*	*	0	0	1.68	1.00
LBJ (regular)	87	28	25	21	*	*	1.95	1.00
LBJ (LASA)	11	6	*	*	0	0	1.91	1.50
Bowie	36	8	0	0	0	0	1.18	1.00
Garza	15	8	*	*	0	0	1.93	1.50
Akins	85	36	11	0	0	0	1.44	1.00
Total	827	394	169	88	28	12	1.77	1.00

Source: AISD course enrollment files, August 2006
* Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is between 1 and 5, then the next lowest cell count in the row or column is also masked.
Note: Bowie does not offer AVID courses, but some Bowie students have taken AVID previously at other schools.

Table B6: Number of Students, by Number of AVID Courses and Grade Level in First Year of AVID, 2005-2006

Grade Level in First AVID Year (2005-2006 HS students)	Number of AVID Courses							
	1	2	3	4	5	6	Total	%
7	85	91	63	46	18	12	315	21%
8	43	36	15	8	10	0	112	7%
9	537	218	71	34	0	0	860	57%
10	122	39	20	0	0	0	181	12%
11	*	10	0	0	0	0	<50	<5%
12	*	0	0	0	0	0	*	<1%
Total	827	394	169	88	28	12	1,518	100%
%	54%	26%	11%	6%	2%	1%	100%	

Source: AISD course enrollment files, August 2006
* Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is between 1 and 5, then the next lowest cell count in the row or column is also masked.

Table B7: Number of Students by High School and Grade Level in First AVID Course, 2005-2006

School	Grade Level in First AVID Course						Total
	7	8	9	10	11	12	
Austin	0	0	100	17	*	*	123
Johnston	*	*	54	13	7	0	78
Lanier	146	49	42	13	*	0	252
McCallum	40	16	45	25	9	*	137
Reagan	52	16	90	22	11	0	191
Travis	*	*	88	15	*	0	109
Crockett	*	*	129	18	7	0	156
Anderson	18	9	41	10	*	0	80
LBJ (regular)	30	12	101	20	*	0	164
LBJ (LASA)	9	*	*	*	0	0	22
Bowie	0	0	39	*	*	0	44
Garza	10	*	*	*	*	0	30
Akins	*	0	113	14	*	0	132
Total	315	112	860	181	45	5	1,518

Source: AISD course enrollment files, August 2006
* Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is between 1 and 5, then the next lowest cell count in the row or column is also masked.
Note: Bowie does not offer AVID courses, but some Bowie students have taken AVID previously at other schools.

Table B8: TAKS Test Scores, GPA, and Honors/AP Courses, by School, 2005-2006

School	2006 TAKS Math Mean	2006 TAKS Math Pass Rate	2006 TAKS Reading Mean	2006 TAKS Reading Pass Rate	2005-2006 GPA	Passed Honors Crs	Passed AP Crs
Austin	2221	72%	2283	90%	2.64	58%	17%
Johnston	2025	28%	2137	66%	1.67	27%	11%
Lanier	2064	42%	2164	71%	1.70	29%	8%
McCallum	2199	68%	2278	87%	2.28	44%	18%
Reagan	2032	31%	2154	66%	1.79	27%	14%
Travis	2065	40%	2159	71%	1.78	24%	9%
Crockett	2104	50%	2208	80%	2.10	34%	13%
Anderson	2308	83%	2297	92%	2.60	49%	26%
LBJ (regular)	2058	38%	2149	70%	1.77	38%	15%
LBJ (LASA)	2425	96%	2387	98%	3.55	50%	51%
Bowie	2292	85%	2311	94%	2.85	59%	23%
Garza	2142	59%	2220	76%	2.94	33%	2%
Akins	2097	48%	2209	79%	2.04	33%	13%
Total	2174	61%	2241	83%	2.28	41%	17%

Source: AISD course enrollment and TAKS files, August 2006

Table B9: Previous TAKS Scores of First-Time AVID Students, 2005-2006

School	2005 TAKS Math Mean	2005 TAKS Math Pass Rate	2005 TAKS Reading Mean	2005 TAKS Reading Pass Rate
Austin (n = 55)	2158	65%	2259	84%
Johnston (n = 30)	2058	33%	2148	60%
Lanier (n = 26)	2198	85%	2235	96%
McCallum (n = 21)	2144	62%	2283	85%
Reagan (n = 36)	2103	53%	2199	83%
Travis (n = 40)	2130	58%	2247	88%
Crockett (n = 73)	2102	48%	2245	84%
Anderson (n = 18)	2181	83%	2253	89%
LBJ (regular) (n = 45)	2100	49%	2200	82%
LBJ (LASA) (n = *)	*	*	*	*
Akins (n = 44)	2173	75%	2287	82%
Total	2129	58%	2237	83%

Source: AISD course enrollment and TAKS files, August 2006

* Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is between 1 and 5, then the next lowest cell count in the row or column is also masked.

Table B10: Previous TAKS Scores of First-Time AVID Students, 2004-2005

School	2004 TAKS Math Mean	2004 TAKS Math Pass Rate	2004 TAKS Reading Mean	2004 TAKS Reading Pass Rate
Austin (n = 46)	2110	63%	2218	89%
Johnston (n = 25)	2013	36%	2128	76%
Lanier (n = 14)	2059	43%	2177	100%
McCallum (n = 24)	2083	54%	2221	92%
Reagan (n = 35)	2061	51%	2166	83%
Travis (n = 18)	2058	56%	2174	76%
Crockett (n = 28)	2082	68%	2192	87%
Anderson (n = 19)	2189	79%	2216	95%
LBJ (regular) (n = 25)	2052	44%	2177	96%
LBJ (LASA) (n = *)	*	*	*	*
Akins (n = 40)	2049	43%	2180	86%
Total	2076	54%	2187	88%

Source: AISD course enrollment and TAKS files, August 2006

* Cell counts between 1 and 5 are masked for confidentiality. If only one cell in a row or column is
between 1 and 5, then the next lowest cell count in the row or column is also masked.

Table B11. Class of 2005 Postsecondary Enrollment (Fall 2005 or Spring 2006), by High
School

High School	Number of Graduates, Class of 2005	2005-2006 Postsecondary Enrollment	Postsecondary Enrollment Rate
Akins	387	162	42%
Anderson	418	312	75%
Austin	478	312	65%
Bowie	528	420	80%
Crockett	356	188	53%
Garza	159	60	38%
Johnston	136	47	35%
Lanier	255	93	37%
LBJ (combined)	329	215	65%
McCallum	316	206	65%
Reagan	137	43	31%
Travis	245	83	34%
Total	3,744	2,141	57%

Sources: National Student Clearinghouse and Texas Higher Education Coordinating Board, April 2006
Note: The Texas Higher Education Coordinating Board provided only aggregate postsecondary
enrollment data for each high school.

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