RESEARCH

Report on an Educational Program

Department of Research and Accountability

ADVANCED PLACEMENT (AP) MONITORING SYSTEM REPORT 2005–2006

Houston Independent School District

HOUSTON INDEPENDENT SCHOOL DISTRICT

Board of Education

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Executive Summary

Advanced Placement (AP) Monitoring System Report 2005–2006

Introduction

Program Description

During the 2004–2005 school year, the Superintendent of Schools devised a one-hundred-day plan that outlined specifications for implementing an Advanced Placement (AP) Monitoring System. The overall goal addressed by this component was to increase student achievement by continuing to raise academic expectations for all students. To accomplish this, the objectives were two-fold: first, increase the enrollment of minority students in Pre-Advanced Placement (Pre-AP) and Advanced Placement courses and participation in Advanced Placement examinations; second, develop a monitoring process to compare enrollment projections with actual enrollment and to measure the gaps in enrollment among underrepresented student groups.

The AP Program provides participating students with the opportunity to take college-level courses while still in high school and earn college credit, advanced placement, or both. Thirty-five AP examinations, covering 20 subject areas, are administered in May at participating schools. The examination format consists of two sections, multiple-choice and free-response (problem-solving or essay). The exceptions are Studio Art, which consists of student-submitted portfolios, Music Theory, which includes a sight-singing task, and modern language exams, which include a performance section (College Board, AP Central, 2006a).

Students who participate in the AP program have opportunities to study a particular subject in greater depth provided by highly qualified teachers. This experience may assist students in determining what educational path they may wish to pursue. By taking AP courses, students develop advanced skills sets and study habits that ultimately prepare them for college studies. Families may experience financial benefits if their child receives advanced placement, college credit or both (College Board, 2005a).

Other benefits afforded to students include opportunities that lead to scholarships or recognition. The Siemens Awards for Advanced Placement is a scholarship with an award ranging from $2,000 to $5,000 given to students (one male and one female) from each of the 50 states who have earned the most number of AP grades of 5 in eight exams (Biology, Calculus BC, Chemistry, Computer Science AB, Environmental Science, Physics C: Mechanics, Physics C: Electricity and Magnetism, and Statistics). In addition, the AP program offers a number of Scholar Awards to AP students who have shown outstanding achievement (College Board, AP Central, 2006b).

Each examination subject is graded on a scale of 1 (No recommendation) to 5 (Extremely well qualified). After the examinations have been administered in May, participating schools return all AP materials to the Educational Testing Service (ETS). Multiple-choice sections are scored by computer. The free-response section is typically scored using a three-step process: development of preliminary scoring standards, establishment of final scoring standards, and the reading (College Board, AP Central, 2004).

The purpose of this report was to assess the impact of the AP program on the educational opportunities available to Houston Independent School District (HISD) students by addressing the following research questions:

1. What is the projected 2006–2007 Pre-AP and AP enrollment based on student enrollment for 2005–2006, 2004–2005, and 2003–2004?

2. What were the demographic characteristics of 2005–2006 HISD students enrolled in Pre-AP/AP courses compared to overall district enrollment?

3. What were the completion rates of 2005–2006 HISD students in AP courses?

4. What was the level of participation for 2005–2006 HISD students in the AP subject tests?

5. During 2005–2006, what were the mean scores of HISD students on the AP subject tests?

6. What percentage of students in HISD scored a 3 or better on AP subject tests for the May 2006 administration?

Findings

Participation

- From 2003–2004 to 2005–2006, there was an increase in both Pre-AP and AP enrollment levels for all students and all student groups.

- When comparing the differential of Pre-AP to district enrollment, there is an underrepresentation of African American, Hispanic, and economically disadvantaged students in the Pre-AP program (1.5, 6.9, and 10.3 percentage points, respectively).

- When comparing the differential of AP to district enrollment, there is an underrepresentation of African American, Hispanic, and economically disadvantaged students in the AP program (7.2, 10.0, and 17.2 percentage points, respectively).

- A total of 4,358 HISD students from 32 campuses participated in the 2006 AP test administration. This represents an increase of 34.3% over the past three years, and a 12.6% increase over the previous year.

- Although 7,529 students enrolled in AP courses for 2006, only 4,358 took AP subject tests.

- For juniors and seniors, the participation rate increased from 13.8% and 14.0% in 2005 to 15.1% and 14.6% in 2006.

- Among the ethnic groups, Native Americans and Asians comprised the lowest percentages of 2006 AP test-takers (<0.1% and 14.0%, respectively).

- Males comprised a lower percentage of 2006 AP test-takers compared to females, (41.0% and 59.0%, respectively).

- When comparing the percentages of AP test-takers from 2004 to 2006, there was a decline in participation among African American, Asian, and White students.

- When examining participation rates in mathematics and science subject tests used for eligibility for the Siemens Award by race/ethnicity, Biology had the highest participation rates for all groups, while Computer Science AB reflected the lowest participation rates for all racial/ethnic categories. Asian and White students participated in all eight AP tests.

Performance

- For the 2005–2006 school year, 8,092 AP examinations were taken by HISD students, where 47.5% of the scores were 3 or higher. This represents a decline from the previous school year when 49.2% of the scores were 3 or above.

- White students outperformed African American, Asian, and Hispanic students on AP subject tests scoring 3 or higher by 52.2, 0.2, and 37.8 percentage points, respectively.

- Bellaire High School had the highest percentage (86.7%) of AP tests scoring 3 or higher.

- For 2006, HISD students exceeded the national mean scores for 18 subject examinations.

- When comparing AP subject tests for 2005 and 2006, mean scores increased in 14 AP subject examinations.

- For the 2006 AP test administration, the highest scores for Asian students was in German Language, White students scored highest in Physics C: Electricity & Magnetism, Hispanic students scored highest on the Spanish Language exam,

and African American students scored highest on the Calculus BC subject test.

- The number of AP tests taken ranged from 1 at Eastwood and Kashmere to 2,081 at Bellaire for 2006.

- When examining AP subject test performance from 1996 to 2006, decreases in the mean scores occurred for biology and physics-related AP subject tests, and increases were evidenced in the mean scores for 11 AP subject examinations.

Recommendations

1. Continue to identify successful efforts to promote participation and performance among students, especially minorities and males, by providing information to students and parents about the benefits of the AP program, which includes scholarships, recognition, and college credit/advanced placement.

2. To increase student achievement, continue to provide adequate and relevant professional development opportunities, especially in the area of science. Additionally, strengthen the curriculum in middle school so that students have a strong educational foundation not only academically, but also with regard to the development of higher order thinking skills and time management skills.

3. On the campus level, monitor the students enrolled in AP courses and the students who subsequently take the AP subject examinations.

4. In order to promote equity and excellence, consideration should be given to creating opportunities for students to take prerequisite math and science courses so that those showing ability or motivation in tenth grade have the necessary foundation to be successful and meet course requirements.

5. For campuses with low participation and performance rates, focus on the development of vertical teams (elementary, middle, and high school) so that student preparation is strengthened prior to taking AP courses and monitor the rigor of the courses.

ADVANCED PLACEMENT (AP) MONITORING SYSTEM REPORT
2005–2006

Purpose: *To assess the impact of the Advanced Placement (AP) program on the educational opportunities available to Houston Independent School District students.*

Design: *Descriptive.*

Population: *Participants in HISD Pre-AP and AP programs.*

Methods: *Use of test score data from the College Entrance Examination Board (CEEB) and demographic data from the Texas Public Education Information Management System. Course enrollment and completion data extracted from the Schools Administrative Student Information (SASI) System.*

Findings: *Participation in AP tests increased by 12.6% from 2005 to 2006. Although a total of 7,529 students were enrolled in AP courses for the 2005–2006 school year, only 4,358 students took AP subject tests during the 2006 administration. For the 2005–2006 school year, 8,092 AP examinations were taken by HISD students, where 47.5% of the scores were a 3 or higher. The mean scores of HISD test-takers exceeded the mean scores for national test-takers for 18 out of 32 subject examinations.*

Conclusions: *HISD policy has provided more equitable access to the Pre-AP and AP program. Although overall participation has increased, performance has declined, suggesting additional strategies are needed to address strengthening the curriculum and educational foundation for all students at all educational levels through vertical teams, providing professional development opportunities, and monitoring campuses, especially with low participation and performance data to ensure that the rigor and quality match AP standards.*

Educational Implications*: Encourage students to take the AP subject examinations by informing them of the advantages conferred by the program. Educate parents to help motivate their children in this endeavor. Provide opportunities for students to take the necessary prerequisite courses, especially in math and science, so that they have the foundation to meet the requirements for AP classes.*

Introduction

During the 2004–2005 school year, the Superintendent of Schools devised a one-hundred-day plan that outlined specifications for implementing an AP Monitoring System. The overall goal addressed by this component was to increase student achievement by continuing to raise academic expectations for all students. To accomplish this, the objectives were two-fold: first, increase the enrollment of minority students in Pre-Advanced Placement and Advanced Placement courses and participation in Advanced Placement examinations; second, develop a monitoring process to compare enrollment projections with actual enrollment and to measure the gaps in enrollment among underrepresented student groups.

The philosophy of the Houston Independent School District (HISD) fosters equity and excellence in education by offering open enrollment that enables all motivated students to participate in Pre-Advanced Placement (Pre-AP) and Advanced Placement (AP) courses (Houston Independent School District, 2006). Similarly, the College Board and the Advanced Placement Program encourage equitable access.

Program Description

The AP Program provides participating students with the opportunity to take college-level courses while

still in high school and earn college credit, advanced placement, or both. Thirty-five examinations, covering 20 subject areas, are administered in May at participating schools. The examination format consists of two sections, multiple-choice and free-response (problem-solving or essay). The exceptions are Studio Art, which consists of student-submitted portfolios; Music Theory, which includes a sight-singing task; and modern language exams, which include a performance section (College Board, AP Central, 2006a).

For the 2007–2008 school year, schools must have courses labelled as "AP" authorized through the AP Course Audit process. This audit process will ensure that quality courses meeting "AP" requirements are being offered, and that colleges and universities have a venue to review authorized courses offered by secondary schools (College Board, AP Central, 2006c)

Students who participate in the AP program have opportunities to study a particular subject in greater depth provided by highly qualified teachers. This experience may assist students in determining what educational path they may wish to pursue. By taking AP courses, students develop advanced skills sets and study habits that ultimately prepare them for college studies. Families may experience financial benefits if their child receives advanced placement, college credit or both (College Board, AP Central, 2005a).

Other benefits afforded to students include opportunities that lead to scholarships or recognition. The Siemens Awards for Advanced Placement is a scholarship with an award ranging from $2,000 to $5,000 given to two students (one male and one female) from each of the 50 states who have earned the most number of AP grades of 5 in eight exams (Biology, Calculus BC, Chemistry, Computer Science AB, Environmental Science, Physics C: Mechanics, Physics C: Electricity and Magnetism, and Statistics). The AP program also offers a number of Scholar Awards to AP students who have shown outstanding achievement (College Board, AP Central, 2006b).

In addition, teachers involved in the AP program benefit from professional development opportunities such as workshops and Summer Institutes. Furthermore, experienced AP teachers may be selected as Faculty Consultants and become "Readers" for the AP exams. Teachers also receive support from AP through on-line materials, publications, conferences, and consultants (College Board, AP Central, 2006d).

Scoring

Each examination subject is graded on a scale of 1 (No recommendation) to 5 (Extremely well qualified). Typically, scores of 3 or above qualify a student to receive advanced placement, college credit, or both. After the examinations have been administered in May, participating schools return all AP materials to the Educational Testing Service (ETS). Multiple-choice sections are scored by computer. The free-response section is typically scored using a three-step process: development of preliminary scoring standards, establishment of final scoring standards, and the reading. AP examinations may be compared from one year to another through equating (College Board, AP Central, 2004).

Program Costs and Funding Source

The AP examination fee was $82.00 per exam for the 2005–2006 school year. The College Board provides a $22.00 fee reduction per exam for students in financial need that qualify so that the final costs is $52 per exam if the school waives its $8 administrative fee. In addition to the College Board fee reduction, the State of Texas provides a $47.00 subsidy for each examination so that the final exam costs for qualified students totals $5. For students in public school who do not qualify for the College Board fee reduction, the State of Texas funds $30 per AP exam, making the final cost $44 if schools forgo their $8 administrative fee (College Board, AP Central, 2005b, 2006e).

In 1993, the Texas Legislature adopted the Advanced Placement (AP)/International Baccalaureate (IB) Incentive Program. One facet of the law provides for campus awards up to $77 for each student who scored either a 3 or better on at least one Advanced Placement examination or a four or above on an International Baccalaureate examination. Campus awards are used for academic enhancement purposes, and campuses earning the funds determine how the funds are to be used (Texas Education Agency, 2006).

Admission

The philosophy of HISD is based on excellence and equity which offers open enrollment that enables all motivated students to participate in Pre-AP and AP courses (Houston Independent School District, 2006).

During the 2004–2005 school year, HISD implemented the *Advanced Placement Initiative*. It is the first public school district in the nation to require

students to take more demanding Pre-AP and AP courses. There are two components. Since Pre-AP courses provide the foundation necessary to prepare students for the AP college level courses, the first component of the Advanced Placement Initiative begins with requiring all sixth and seventh grade students to take Pre-AP Language Arts and Reading. Additionally, instruction will be provided by teachers who have completed the College Board Pre-AP English training (Houston Independent School District, 2005).

The second component incorporates the philosophy of open enrollment to all motivated students to participate in AP courses and further uses students' tenth grade scores from the PSAT to default students into AP courses where they demonstrate strengths and for which they have completed prerequisite courses (Houston Independent School District, 2005).

Curriculum

Pre-AP classes are aligned with the College Board Advanced Placement course curriculum objectives. These classes provide a foundation that prepares students for taking AP courses. The AP curriculum consists of university level courses that have been developed by the College Board. Students are encouraged to take AP exams after completing AP courses. Successful completion of AP exams gives students the possibility of receiving advanced placement and/or college credit. AP course offerings vary at every campus (Houston Independent School District, 2006).

Purpose

The purpose of this report was to assess the impact of the Advanced Placement (AP) program on the educational opportunities available to HISD students by addressing the following research questions:

1. What is the projected 2006–2007 Pre-AP and AP enrollment based on student enrollment for 2005–2006, 2004–2005, and 2003–2004?
2. What were the demographic characteristics of 2005–2006 HISD students enrolled in Pre-AP/AP courses compared to overall district enrollment?
3. What were the completion rates of 2005–2006 HISD students in AP courses?
4. What was the level of participation for 2005–2006 HISD students in the AP subject tests?
5. During 2005–2006, what were the mean scores of HISD students on the AP subject tests?
6. What percentage of students in HISD scored a 3 or better on AP subject tests for the May 2006 administration?

Methods

Data Limitations

Due to issues related to mobility, the unduplicated count of students taking AP courses by campus will not equal the unduplicated count of students taking AP courses for the district. More specifically, a student may attend more than one campus during an academic year. If the student enrolled in AP courses at two campuses, then each campus will count that student as taking at least one AP course; however, districtwide, the student will not be counted twice.

To provide disaggregated student level information, the electronic database was matched to the Public Education Information Management System (PEIMS) database. Since the PEIMS database reflects a snapshot taken on the last Friday in October, those students who were not present would not be included in the database. There was a total of 18 students taking AP exams who could not be matched to PEIMS.

Data Collection and Analysis

Test performance for 2006, along with demographic information supplied by students, was reported to HISD for each participating campus by the College Board via printed reports and an electronic database. The 2006 national scores for test performance by subject were extracted from the *National Summary Report* (College Board, 2006f). These data, together with enrollment data from PEIMS, were analyzed. State level data, including the number of AP Subject tests taken along with the percentage of scores that were 3 or above, were extracted from the *State Reports* (College Board, 2004g). Participation rates for juniors and seniors were calculated by dividing the number of students tested by the PEIMS snapshot of fall enrollment for the same group. Participation rates for juniors and seniors were calculated across the district and by school.

Course completion rates were determined by analyzing the numerical counts of students enrolled in an AP course with those students completing the last semester of the course. AP examinations were linked to corresponding AP courses by student. Some counts

may be imprecise because data required to match students to each database were not available. Additionally, completion rates and subsequent testing were based on the 2005–2006 school year. Therefore, a student was required to complete the course within the school year and test in the spring of 2006 to be considered as taking the course with the corresponding exam.

Mean test scores by gender, race/ethnicity, and economic status for AP subjects were analyzed by comparing mean and differential scores. For race/ethnicity, the number of Hispanic students combines the total populations for the Chicano/Mexican, Puerto Rican, and Other Hispanic racial/ethnic categories. When examining differential scores, White students were used as a reference group because typically, White students outperform minority students on standardized tests. To determine the percentage of students who scored 3 or above on AP subject tests by race/ethnicity, the total number of tests scoring a 3 or higher were divided by the total number of tests taken for each ethnic category.

Results

What is the projected 2006–2007 Pre-AP and AP enrollment based on student enrollment for 2005–2006, 2004–2005, and 2003–2004?

Tables 1 and **2** depict actual Pre-AP and AP enrollment data for 2003–2004, 2004–2005, and 2005–2006, as well as the projected enrollment for the 2006–2007 school year by gender and student group. Pre-AP enrollment encompasses grades 6–12, while AP enrollment consists of grades 9–12. The projected enrollment was calculated by averaging the percentage of increase or decrease in the actual enrollment over the 3-year period and multiplying the 2005–2006 actual enrollment by the average increase or decrease (proportion) to arrive at a crude 2006–2007 enrollment projection. Extraneous factors, such as policy decisions, may ultimately impact projected enrollments, but these factors were not taken into account. More specifically, Pre-AP and AP enrollment figures may

Table 1: HISD Pre-AP Enrollment and Projected Enrollment (Grades 6–12) by Gender and Student Group (unduplicated)

	2003–2004	2004–2005	2005–2006	Proportional Change	Projected 2006–2007
All Students	21,932	29,347	33,743	0.243942	41,974
African Am.	5,143	7,992	10,492	0.433385	15,039
Asian	1,714	1,948	2,024	0.087769	2,202
Hispanic	9,647	13,663	15,884	0.289426	20,481
Native Am.	28	37	41	0.214768	50
White	4,867	5,707	5,302	0.050813	5,571
Male	9,370	13,206	15,678	0.298290	20,355
Female	12,029	16,141	18,065	0.230520	22,229
Econ. Disadv.	12,488	19,193	22,288	0.349086	30,068
Missing Econ. Disadv.	533	0	1,013	-	-

Table 2: HISD AP Enrollment and Projected Enrollment (Grades 9–12) by Gender and Student Group (unduplicated)

	2003–2004	2004–2005	2005–2006	Proportional Change	Projected 2006–2007
All Students	6,279	6,703	7,529	0.095378	8,247
African American	1,568	1,699	1,931	0.110048	2,144
Asian	660	687	748	0.064850	797
Hispanic	2,508	2,790	3,156	0.121811	3,540
Native American	7	9	10	0.198413	12
White	1,448	1,518	1,684	0.078848	1,817
Male	2,535	2,722	3,123	0.110543	3,468
Female	3,656	3,981	4,406	0.097826	4,837
Econ. Disadv.	3,195	3,665	4,064	0.127986	4,584
Missing Econ. Disadv.	88	0	78	-	-

increase by a larger factor for all student groups because of the implementation of the *Advanced Placement Initiative,* or by a smaller factor if overall enrollment decreases.

Over the past three years, there has been a net increase in the number of students enrolled in Pre-AP courses by gender and student group (see Table 1). Projected enrollments for 2006–2007 mirror this trend with overall increases in the number of students enrolled by gender and student group. For students enrolled in AP courses, there was an overall increase in enrollment for all student groups (see Table 2). Regarding gender, a greater number of female students enrolled in both Pre-AP and AP courses compared to males, and the predominant racial/ethnic group consisted of Hispanic students. The percentage of economically disadvantaged students enrolled in Pre-AP and AP courses in 2005–2006 was 66.1% and 54.0%, respectively.

What were the demographic characteristics of 2005–2006 HISD students enrolled in Pre-AP/AP courses compared to overall district enrollment?

An important component of the AP Monitoring System was to measure the gaps in enrollment among underrepresented student groups. To accomplish this, Pre-AP and AP enrollment was compared to enrollment in the district by gender and student group. Ultimately, the demographic composition of students enrolled in the Pre-AP and AP program should reflect the composition of the district. **Tables 3** and **4** show a comparison of Pre-AP and AP student demographics to the district for the 2005–2006 academic year. Percentages may not add up to 100% due to rounding. A total of 33,743 students enrolled in Pre-AP courses (grades 6–12) and 7,529 students enrolled in AP courses (grades 9–12). Of the 33,743 Pre-AP students, 31.1% were African American, 6.0% were Asian, 47.1% were Hispanic, and

Table 3: Comparison of Pre-AP Student Demographics to the District, 2005–2006 (unduplicated)

	Pre-AP		District 6–12		
	N	%	N	%	Differential
All Students	33,743		93,110		
African American	10,492	31.1	30,351	32.6	-1.5
Asian	2,024	6.0	3,165	3.4	2.6
Hispanic	15,884	47.1	50,259	54.0	-6.9
Native American	41	0.1	72	0.1	0
White	5,302	15.7	9,263	9.9	5.8
Male	15,678	46.5	47,105	50.6	-4.1
Female	18,065	53.5	46,005	49.4	4.1
Eco. Disadv.	22,288	66.1	71,141	76.4	-10.3
Missing Econ. Disadv.	1,013	3.0	-	-	-

Table 4: Comparison of AP Student Demographics to the District, 2005–2006 (unduplicated)

	AP		District 9–12		
	N	%	N	%	Differential
All Students	7,529		49,714		
African American	1,931	25.6	16,329	32.8	-7.2
Asian	748	9.9	1,898	3.8	6.1
Hispanic	3,156	41.9	25,804	51.9	-10.0
Native American	10	0.1	32	0.1	0.0
White	1,684	22.4	5,651	11.4	11.0
Male	3,123	41.5	24,794	49.9	-8.4
Female	4,406	58.5	24,920	50.1	8.4
Eco. Disadv.	4,064	54.0	35,374	71.2	-17.2
Missing Econ. Disadv.	78	1.0	-	-	-

15.7% were White. The percentage of Native American students enrolled in Pre-AP and AP classes was comparable to the district enrollment. Regarding gender, the percentage of females enrolled in Pre-AP classes (53.5%) exceeded the percentage of males (46.5%). The predominant ethnic/racial groups for the AP program consisted of Hispanic (41.9%) and African American (25.6%) students. Enrollment of female students exceeded male students (58.5% and 41.5% respectively). When comparing the differential of Pre-AP enrollment to the district enrollment by gender and student group, an under-representation occurs for male, African American, Hispanic, and economically disadvantaged students (4.1, 1.5, 6.9, and 10.3 percentage points respectively). A similar pattern emerges when comparing the differential of AP enrollment to the district by gender and student group. Males, African American, Hispanic, and economically disadvantaged students are under represented by 8.4, 7.2, 10.0, and 17.2 percentage points, respectively. When comparing the differential of Pre-AP and AP enrollment to the district enrollment, female, Asian, and White students were over-represented.

Table 5 compares the number and percentage of students enrolled in the Pre-AP and AP program by grade level to that of the district. The highest levels of Pre-AP enrollment occurred in sixth (64.6%) and seventh grade (58.9%), reflecting the implementation of the *AP Initiative*. As part of the *AP Initiative*, all sixth and seventh grade students were to enroll in Pre-AP English, unless parents indicated otherwise, or other circumstances precluded their participation. When comparing the overall district enrollment (grades 6–12) to Pre-AP enrollment, only 36.2% of the students in the district were enrolled in Pre-AP classes. The highest levels of AP enrollment occurred in grades 12 (27.8%) and 11 (24.9%). Overall, only 15.1% of the students in the district (grades 9–12) were enrolled in AP classes.

What were the completion rates of 2005–2006 HISD students in AP courses?

During the 2005–2006 school year, the percentages of students completing AP courses districtwide and by campus were analyzed. **Table 6** summarizes the number of students taking AP courses districtwide, the number completing, and the percent completing disaggregated by student group. The last semester completion of courses was used to determine the numerical counts for the number completing. Since students may have been enrolled in more than one AP class, the number taking reflects duplicated student counts. Districtwide, a total of 23,267 students enrolled in AP courses and 11,777 or approximately 50.6% of those enrolled completed the course. The percentage of students completing AP courses by student group ranged from 47.2% for Hispanic students to 54.0% for White and Asian students. A summary of the completion rates by campus and disaggregated by student group is provided in **Appendix A**. Out of 32 high schools, the enrollment in AP classes for all students ranged from 53 at Eastwood Academy to 3,241 at Westside High School. Completion rates for all students ranged from 36.6% at Lee High School to 57.3% at Bellaire High School.

Table 7 summarizes the correspondence between AP Examinations and AP courses completed for high school students during the 2005–2006 school year. Of

Table 5: Comparison of Pre-AP and AP Course Enrollment and Percentage of District Enrolled by Grade Level, 2005–2006 (unduplicated)

Grade	Pre-AP Enrollment	District Enrollment (6–12)	% District Enrollment (Pre-AP)	AP Enrollment	District Enrollment (9–12)	% District Enrollment (AP)
6	9,525	14,739	64.6			
7	8,644	14,677	58.9			
8	4,175	13,980	29.9			
9	3,781	17,302	21.9	105	17,302	0.6
10	3,558	12,279	29.0	2,133	12,279	17.4
11	2,699	10,761	25.1	2,684	10,761	24.9
12	1,361	9,372	14.5	2,607	9,372	27.8
Total	**33,743**	**93,110**	**36.2**	**7,529**	**49,714**	**15.1**

Table 6: AP Course Completion by Race/Ethnicity, Gender, and Economic Status, 2005–2006 (duplicated)

	# Taking	# Completing	% Completion
All Students	23,267	11,777	50.6
African American	5,504	2,806	51.0
Asian	3,007	1,624	54.0
Hispanic	9,158	4,326	47.2
Native American	45	24	53.3
White	5,553	2,997	54.0
Male	9,748	4,895	50.2
Female	13,519	6,882	50.9
Economically Disadvantaged	12,069	5,878	48.7
Missing Econ. Disadvantaged	133	71	53.4

the students who took the AP examination in the spring of 2006, 79.0% of the students completed the corresponding AP course while 21.0% did not. A completed course was based on a passing grade for the second semester. Regarding race/ethnicity, Native American students had the highest percentage of those who took the AP examination and completed the corresponding AP course (94.4%), while Asian students had the lowest percentage of students who took the AP examination and completed the corresponding AP course (76.1%). The percentage of males exceeded females when examining the percentage of students taking the examination and completing the corresponding AP course (80.1% and 78.4%, respectively). Regarding economic status, 79.4% of the students classified as economically disadvantaged took AP examinations and completed the corresponding AP course.

Alternatively, some students completed the AP course but did not take the corresponding AP examination. Districtwide, 47.8% of the students completed AP courses, but did not take the corresponding AP examination. Regarding race/ethnicity, 64.2% of African American students completed AP courses, but did not take the corresponding examination. Alternatively, only 26.9% of Asian students completed AP courses, but did not take the corresponding examination. Regarding gender, a higher percentage of females compared to males completed the AP course, but did not take the corresponding AP examination (49.0% and 46.1%, respectively). Fifty percent of students who were classified as economically disadvantaged completed the AP course, did not take the corresponding AP examination.

What was the level of participation for 2005–2006 HISD students in AP subject tests?

Districtwide Participation

During the 2005–2006 school year, a total of 4,358 students participated in taking AP examinations, which included 21 students who were not yet in ninth grade, 1,091 freshman/sophomores, 1,628 juniors, 1,371 seniors, and 247 with an unspecified grade level. For the 2005–2006 school year, 32 schools participated.

Table 8 summarizes the level of participation and performance for HISD from 1998 through 2006. For juniors and seniors, the level of participation increased

Table 7: AP Course Completion with Corresponding Examination by Race/Ethnicity, Gender, and Economic Status, 2005–2006 (unduplicated)

	Examinations Taken				Courses Completed			
	With Corresponding Course		Without Corresponding Course		With Corresponding Examination		Without Corresponding Examination	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Students	6,149	79.0	1,639	21.0	6,149	52.2	5,628	47.8
African American	1,005	90.9	101	9.1	1,005	35.8	1,801	64.2
Asian	1,187	76.1	373	23.9	1,187	73.1	437	26.9
Hispanic	2,150	76.5	660	23.5	2,150	49.7	2,176	50.3
Native American	17	94.4	1	5.6	17	70.8	7	29.2
White	1,790	78.0	504	22.0	1,790	59.7	1,207	40.3
Male	2,638	78.4	732	19.9	2,638	53.9	2,257	46.1
Female	3,511	79.4	728	21.6	3,511	51.0	3,371	49.0
Eco. Disadv.	2,939	80.1	911	20.6	2,939	50.0	2,939	50.0

Note: A completed course was based on a passing grade for the second semester. Students who could not be matched were excluded from the analysis (only 7,788 exams could be matched from a total of 8,092).

Table 8: Summary of Participation and Performance in AP Exams, 1998–2006

Year	Juniors	% of District Juniors	Seniors	% of District Seniors	Total Participants	Total Exams	Total Exams 3–5	% of Exams 3–5	# of Schools in HISD
1998	442	4.9	465	4.6	1,025	1,889	1,320	69.9	-
1999	456	4.8	657	6.7	1,240	2,278	1,437	63.1	-
2000	698	7.4	917	11.4	1,756	3,402	2,076	61.0	22
2001	860	9.4	945	11.9	1,968	3,769	2,160	57.3	23
2002	1,114	11.6	937	12.1	2,403	4,724	2,774	58.7	27
2003	1,091	11.4	1,091	13.1	2,723	5,351	3,233	60.4	24
2004	1,292	13.2	1,142	13.7	3,246	6,068	3,297	54.3	31
2005	1,449	13.8	1,291	14.0	3,872	7,188	3,539	49.2	31
2006	1,628	15.1	1,371	14.6	4,358	8,092	3,844	47.5	32

Source: College Board Reports for HISD, 1998–2006. Data reflect the most current results.

from 4.9% and 4.6% in 1998 to 15.1% and 14.6% in 2006. Over the past nine years, the number of participants, total exams, total exams scoring 3 or higher, and participating schools have increased. Alternatively, the percentage of students scoring 3 or higher decreased from 69.9% in 1998 to 47.5% in 2006.

Participation by Gender, Race/Ethnicity, and Economic Status

Table 9 compares the gender, racial/ethnic composition, and economic status of HISD AP test-takers from 2004 to 2006. Over the past three years, the number of students taking AP tests increased from 3,246 to 4,358, representing a 34.3% increase. Moreover, participation increased by 12.6% from 2005 to 2006. The percentage of female participants was higher than males from 2004 to 2006. Among African American, Asian, and White test-takers, the percentage of participation decreased by -0.3, -1.4, and -2.8 percentage points, respectively over the past three years. Alternatively, the percentage of participation for economically disadvantaged and Hispanic students increased by 8.3 and 3.3 percentage points from 2004 to 2006. Since one of the district's objectives was to increase underrepresented student group enrollment in test participation, the data indicate that this objective has been met for Hispanic and economically disadvantaged students.

To be eligible for the Siemens Award for Advanced Placement, students were required to reach specific levels of performance on eight exams that centered on mathematics, computer science, and science. **Figure 1** compares the level of participation of HISD students, which incorporates those AP subject tests in the areas of mathematics, computer science, and science, by ethnicity and gender.

When examining the level of participation, (Figure 1), Biology had the highest participation rates for all racial/ethnic groups. Asians had the highest participation rates for Calculus BC, Chemistry, Physics C: Electricity and Magnetism, Physics C: Mechanics, and Statistics when compared to other racial/ethnic groups. White students had the highest participation rates for Computer Science AB, and Hispanic students had the highest participation rates for Environmental Science. Overall, participation in Computer Science AB reflected some of the lowest levels for all racial/ethnic groups. Asian and White students participated in

Table 9: Comparison of HISD AP Test-Takers by Gender, Race/Ethnicity, and Economic Status, 2004–2006

Test-Takers	Total	Female	Male	Native American	Asian	African American	Hispanic	White	Econ. Disadv.
2004	3,246	1,899	1,347	3	499	522	1,224	827	1,405
Percent		58.5	41.5	0.1	15.4	16.1	37.7	25.5	43.3
2005	3,872	2,285	1,587	11	547	553	1,657	896	1,949
Percent		59.0	41.0	0.3	14.1	14.3	42.8	23.1	50.3
2006	4,358	2,570	1,788	6	608	689	1,788	988	2,250
Percent		59.0	41.0	0.1	14.0	15.8	41.0	22.7	51.6

Note: For 2006, 165 students did not state their ethnicity, 114 indicated "other," and economic status was not available for 82. For 2005, 107 students did not state their ethnicity, 101 indicated "other," and economic status was not available for 65. For 2004, 84 did not state their ethnicity, 87 indicated "other," and economic status was not available for 146.

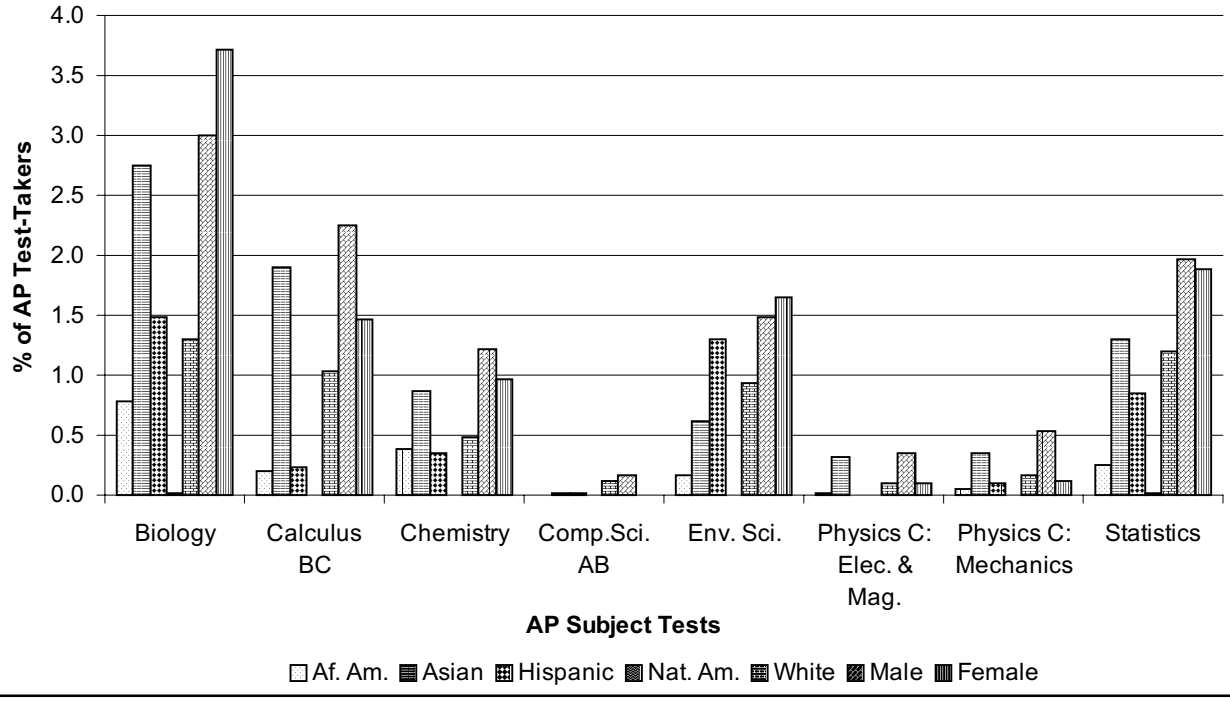

Figure 1: Participation of AP test-takers for selected mathematics, science, and computer science exams

all eight AP tests. African American students did not take exams in Computer Science AB, and Hispanic students did not participate in Physics C: Electricity and Magnetism. Native American students participated in only two subject areas, Biology and Statistics. Regarding gender, the participation rates for males exceeded that of females for all exams with the exception of Biology and Environmental Science.

Participation by Schools

A total of 32 HISD schools had students taking Advanced Placement examinations for the 2005–2006 school year. **Table 10** presents the participation of those students that took at least one AP exam based on grade level enrollment. There was considerable variation among the high schools with regard to participation, with sophomores reflecting the lowest levels (8.9%) and juniors with the highest levels (16.3%). For tenth grade students, percentages ranged from 0% at Eastwood, Jones, Kashmere, Worthing, and Yates to 52.9% at Carnegie Vanguard High School. For juniors, the percentage was highest for MCTC High School with 60.3%. Eastwood (0.0%) had the lowest participation rates for juniors. With regard to seniors, participation ranged from 0.0% to 58.7%. DeBakey had the highest participation rates with 58.7%. The lowest participation rates, 0.0%, were found at Eastwood and Kashmere. The schools with the highest participation levels, Carnegie Vanguard, DeBakey, and MCTC High Schools, were all Magnet schools.

During 2005–2006, what were the mean scores of HISD students on the AP subject tests?

Table 11 compares the mean scores by subject for HISD students with the mean scores of national test-takers. The national data reflect totals for public school students. The subject examinations for HISD are reported only in areas where five or more students were tested. As a result, the number of students taking the examination may appear different from the overall total and/or from the school total. For 2006, Studio Art: 3-D Design was the only subject examination in which HISD students did not participate.

In 2006, students in HISD scored a mean of 3 or higher on a five-point scale on 17 of the 35 AP subject examinations where five or more students were tested. Typically, a score of 3 qualifies a student to receive advanced placement or college credit. HISD students exceeded the national mean scores for 18 subject examinations. These included: Art: History, Art: Studio 2-D Design, Biology, Calculus BC, Chemistry, Computer Science A, Economics: Macro, Economics: Micro, European History, French: Language, German:

Table 10: Participation of sophomores, Juniors and Seniors in AP tests

School	% of Enrollment by Grade 10th	11th	12th
Austin	19.5	25.2	14.6
Bellaire	22.1	39.2	39.4
Carnegie Vanguard	52.9	59.5	40.6
Challenge	41.6	22.8	8.5
Chavez	9.5	12.9	15.7
Davis	1.8	15.2	9.1
DeBakey	5.4	48.8	58.7
Eastwood	0.0	0.0	0.0
Furr	0.4	9.2	11.6
Houston	9.3	16.5	17.8
HSLECJ	5.2	34.1	16.3
HSPVA	14.9	42.7	24.4
Jones	0.0	7.4	9.3
Jordan	14.5	10.1	4.6
Kashmere	0.0	0.7	0.0
Lamar	0.2	1.7	9.4
Lee	2.2	6.2	11.2
Madison	6.3	14.9	11.8
MCTC-HS	32.7	60.3	34.0
Milby	4.8	9.1	15.2
Reagan	8.7	13.1	8.1
Scarborough	1.3	12.8	15.0
Sharpstown	4.8	9.4	10.9
Sterling	0.3	11.0	0.5
Waltrip	0.9	9.0	2.9
Washington	3.8	5.2	6.9
Westbury	4.7	11.2	9.0
Westside	33.6	28.4	33.6
Wheatley	0.4	13.5	5.7
Worthing	0.0	13.4	13.1
Yates	0.0	6.0	5.6
HISD	**8.9**	**16.3**	**15.3**

Note: Only high school participation is reflected. Grade level was not specified for 247 students.

Language, Human Geography, Music Theory, Physics C: Electricity & Magnetism, Physics C: Mechanics, Psychology, Spanish: Language, and Spanish: Literature. Mean scores ranged from 1.00 in Latin Literature to 4.16 in Physics C: Electricity & Magnetism. English Language and Composition, U.S. History, and World

Table 11: National Mean Scores compared to HISD

Subject	HISD N	HISD 2005	HISD 2006	Nation 2006
Art: History	26	3.21	3.54	2.61
Art: Studio Drawing	18	3.63	2.94	3.03
Art: Studio 2-D Design	18	2.58	3.56	2.91
Art: Studio 3-D Design	0	-	-	2.97
Biology	293	2.73	3.04	2.98
Calculus AB	413	2.51	2.70	2.98
Calculus BC	162	3.70	3.74	3.68
Chemistry	95	3.11	3.00	2.79
Comp. Sci. A	54	2.86	3.00	2.88
Comp. Sci AB	7	*	3.00	3.38
Econ. Micro	58	3.37	3.31	2.93
Econ. Macro	319	3.43	3.06	2.68
English Lang.&Comp.	1,391	2.20	2.06	2.58
Eng. Lit. & Comp.	819	2.36	2.30	2.82
Environmental Science	137	2.52	2.12	2.54
European Hist.	39	2.65	3.44	2.93
French: Lang.	33	2.31	2.55	2.52
French: Lit.	10	2.53	1.90	2.73
German: Lang.	15	3.31	4.07	3.05
Gov. Politics U.S.	597	2.30	2.16	2.71
Gov. Politics Comparative	4	1.88	*	2.67
Human Geog.	99	3.03	3.64	2.80
Italian Language	2	-	*	2.56
Latin: Vergil	13	*	2.62	2.76
Latin: Lit.	6	3.60	1.00	2.88
Music Theory	41	3.70	3.49	3.12
Phys. B	144	2.52	2.39	2.71
Phys.C: Elec & Magnetism	19	3.85	4.16	3.49
Phys. C: Mech.	28	3.35	3.71	3.26
Psychology	141	3.27	3.26	3.12
Spanish: Lang	654	3.59	3.96	3.38
Spanish: Lit.	114	2.81	2.81	2.69
Statistics	168	2.82	2.80	2.83
U.S. History	1,123	2.13	2.30	2.66
World History	1,032	2.48	2.17	2.57

*No scores reported for less than five students

History represented the three subject tests taken by the highest number of students (1,391, 1,123, and 1,032, respectively); however, mean scores for these exams were lower than the national mean scores (2.06, 2.30, and 2.17, respectively). Advanced Placement tests characterized by having fewer than 10 participants included: Art: Studio 3-D Design, Computer Science AB, Government Politics: Comparative, Italian Language, and Latin: Literature.

For 2005, students in HISD scored a mean of 3 or higher in 14 of 31 AP subject examinations where five or more students were tested. Mean scores ranged from 1.36 in Environmental Science to 4.21 in Spanish:Language. When comparing AP subject tests for 2005 and 2006, mean scores increased in 14 AP subject examinations out of 30 AP subject examinations where five or more students were tested.

Performance and Gender/Ethnicity

Appendix B compares the 2006 mean scores by subject for HISD students with the mean scores of national test-takers disaggregated by gender and ethnicity for each subject area shown. The subject examinations for HISD are reported only in areas where five or more students were tested.

When examining gender, the mean scores for HISD students ranged from 2.09 to 4.27 for males and 1.78 to 4.29 for females. Males scored highest in Physics C: Electricity & Magnetism, and females scored highest in German Language. For males, the lowest mean scores occurred on the English Language and Composition examination, and for females the lowest mean scores occurred on the Environmental Science test. During the 2006 test administration, females and males achieved mean AP subject test scores of 3 or higher on 12 out of 29 exams and 18 out of 30 exams, respectively. When comparing the mean scores of HISD students with those of national test-takers, HISD females outperformed national test-takers on 16 out of 29 examinations. The largest differential occurred on the Physics C: Mechanics subject test (1.30). HISD Males outperformed national test-takers on 15 out of 30 AP subject tests. The largest differential occurred on the Art History subject test (0.95).

Regarding ethnicity, the mean scores for HISD Asians and Whites ranged from 2.14 to 4.00 and 1.80 to 4.75, respectively for the 2006 test administration. The mean scores for African American students and Hispanic students ranged from 1.37 to 3.44 and 1.31 to 4.10, respectively for 2006. The highest mean scores for Asian students was in German Language. White students scored highest in Physics C: Electricity & Magnetism. Hispanic students scored highest on the Spanish Language subject test, while African American students scored highest on Calculus BC for 2006.

When comparing the mean scores of HISD with those of national test-takers, HISD Asian test-takers outperformed national test-takers on 21 out of 27 AP subject tests. The largest differential occurred on the German Language AP subject test (0.98). Hispanic students from HISD outperformed national test-takers on 7 out of 22 AP subject tests. The largest differential occurred on the Human Geography AP test (1.41). For African Americans, HISD test-takers outperformed national test-takers on 13 out of 20 AP subject tests. The largest differential occurred on the Human Geography AP test (1.45). For Whites, HISD test-takers outperformed national test-takers on 27 out of 31 AP subject tests. The largest differential occurred on the Art History subject test (1.31).

Appendix C summarizes the differential in AP subject test scores for HISD students by gender and race/ethnicity for 2006. When examining the differential in AP subject test scores by gender, males outperformed females on 18 of the 28 subjects for which both groups participated in 2006. The mean differential ranged from -0.59 in Physics C: Mechanics to 1.25 in European History.

When examining the racial/ethnic differential between White and African American students, White students outperformed African American students in all 20 subject tests for which both groups participated in 2006. The mean differential ranged from 0.29 points in Human Geography to 2.32 points in Biology. However, when examining the differential between White students and Hispanic students, Hispanic students outperformed White students by 0.66 points in the Spanish Language test and 0.03 points in the Computer Science A exam. White students outperformed Hispanic students on 20 out of 22 subject tests for which both groups participated. The mean differential between White and Hispanic students ranged from -0.66 points in Spanish: Language to 2.36 points in Physics B.

Figure 2 compares the percentage of AP tests with scores of 3 or more by gender and race/ethnicity based upon the total number of AP tests taken for 2005 and 2006. When examining gender, 51.0% of the males and 44.8% of the females scored 3 or higher on the total number of AP subject tests in 2006. In 2006, males exceeded the performance of females by 6.2 percentage points. When comparing 2005 to 2006, the percentage of females scoring 3 or higher on AP tests decreased from 45.6% to 44.8%. This may in part be related to the 17.2% increase in the number of AP exams taken by females. In addition, performance for males declined slightly by 2.9 percentage points for the same time interval.

Regarding race/ethnicity, the percentages of students attaining a score of 3 or above ranged from 17.4% for African Americans to 69.6% for Whites in 2006. The

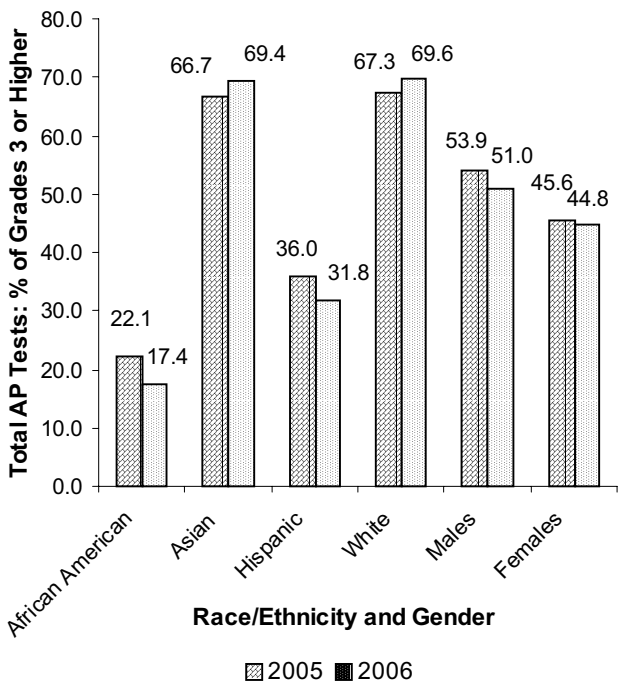

Figure 2: Percentage of AP Tests Scoring Three or Higher by Race/Ethnicity and Gender

percentages scoring 3 or higher ranged from 22.1% for African Americans to 66.7% for Asians for 2005. Comparing 2005 to 2006, 66.7% and 69.4% of Asian and 67.3% and 69.6% of White students scored 3 or above on AP subject tests. Alternatively, the percentage of both Hispanic and African American students scoring 3 or higher declined by 4.2 and 4.7 percentage points, respectively. White students outperformed all other ethnic groups for 2006.

What percentage of students in HISD scored a 3 or better on AP subject tests for the May 2006 administration?

Table 12 summarizes the number of AP test-takers, the number of AP tests taken and the percentage of total examinations for which participants scored a 3 or higher by campus. Typically, a score of 3 qualifies a student to receive advanced placement or college credit. For the 2006 school year, 4,358 AP examinations were taken by HISD students, where approximately 47.5% of the scores were 3 or higher. This represents a slight decrease from the previous school year when 49.2% of the scores were 3 or above. HISD students outperformed students attending Texas public schools by 0.5 percentage points for those exams scored at 3 or higher. However, nationally, students attending public schools outperformed those in HISD by 10 percentage points for those exams scored at 3 or higher.

Table 12: Number of Test-takers and AP Exams Taken and Percentage of Exams Scoring 3–5

School	N of Students Taking AP Exams	N of Exams Taken	% of Exams Scored 3–5
High Schools			
Austin	218	325	10.2
Bellaire	801	2,081	86.7
Carnegie Vanguard	109	179	62.0
Challenge	58	67	59.7
Chavez	194	375	19.2
Davis	90	134	38.8
DeBakey	205	502	63.7
Eastwood	1	1	*
Furr	42	61	21.3
Houston	259	373	14.7
HSLEJC	98	149	51.0
HSPVA	154	254	71.7
Jones	33	62	3.2
Jordan	89	120	30.8
Kashmere	1	1	*
Lamar	86	92	77.2
Lee	95	186	17.7
Madison	179	239	6.7
MCTC-HS	75	113	0.9
Milby	146	298	26.2
Reagan	131	191	20.9
Scarborough	66	112	8.0
Sharpstown	95	167	28.7
Sterling	31	43	4.7
Waltrip	53	100	21.0
Washington	44	93	33.3
Westbury	125	243	11.5
Westside	693	1,267	50.7
Wheatley	43	71	0.0
Worthing	71	97	1.0
Yates	51	74	2.7
Middle School			
Johnston MS	-	22	95.5
HISD	**4,358**	**8,092**	**47.5**
Texas	122,969	209,328	47.0
Nation	1,134,235	1,947,937	57.5

Source: 2006 National Summary Data for Public Schools; 2006 Texas Summary Data for Public Schools; 2006 College Board Report.
*Scores not reported for less than 5 students.

For 2006, the number of AP tests taken ranged from 1 at Eastwood and Kashmere to 2,081 at Bellaire. The percentage of scores that were a 3 or higher by high school campus ranged from 0.0% at Wheatley to 86.7% at Bellaire. At the state level, 47.0% of the AP scores were 3 or above, and nine campuses exceeded the state percentage in 2006. There were eight campuses where fewer than 10% of the scores were 3 or above.

Measures of AP success have typically focused on the percentage of students scoring 3 or higher. Although still used, this metric may be inflated, for example, by allowing only top students to test or participate in the AP program. Alternatively, another measure involves centering on the participation in AP exams by school, without looking at the level of performance. This latter measure does examine equity with regard to access to AP courses and testing, but without taking into account the actual performance of the students, the level of excellence cannot be measured (College Board, AP Central, 2005c). Therefore, a new measure of equity and excellence has been put forth by the College Board. It is calculated by taking the "percentage of students in a total population (school, district, state, etc.), who had a least one AP experience resulting in an exam score of 3 or higher" (College Board, AP Central, 2005c).

Appendix D summarizes 2006 AP performance based on the percentage of students enrolled in grades 10, 11, and 12 scoring 3 or higher on at least one AP exam by campus and the graduating class summary. For the former performance measure, students were required to score a 3 or higher during the 2006 administration. Alternatively, the graduating class summary shows the percentage by campus of twelfth grade students that scored 3 or higher at any point in their high school tenure. For tenth grade students, percentages ranged from 0.0% at Austin, Eastwood, Furr, Jones, Kashmere, Waltrip, Wheatley, Worthing, and Yates High Schools, to 30.6% at Carnegie Vanguard High School. For eleventh grade students, percentages ranged from 0.0% at Eastwood, Furr, Jones, Kashmere, MCTC, Sterling, Wheatley, and Yates High Schools to 38.6% at Bellaire. For twelfth grade students, percentages ranged from 0.0% at Eastwood, Furr, Jordan, Kashmere, MCTC, Wheatley, Worthing, and Yates High Schools, to 48.4% at DeBakey.

College summary data indicate that 100% of the graduating senior class attending Reagan High School scored 3 or higher on at least one AP subject exam at some point in their high school tenure. Alternatively, none of the graduating seniors attending Furr, Kashmere, MCTC, Wheatley, or Worthing met this measure.

How has performance in AP subject tests progressed from 1996 to 2006?

Appendix E summarizes the mean AP subject test scores from 1996–2006. Comparisons were made for subject tests that included at least three years of test data. Data from 2006 were compared to data from 1996, if scores were available for those years. If not, the differences were calculated by subtracting the year in which data were first available from the final year of data. Overall, scores have fluctuated slightly with mean score increases occurring in 11 examinations and decreases occurring in 21 out of 33 examinations. Differences ranged from -1.77 points in Statistics to 1.99 points in Art History. Decreases in the mean scores occurred for three of the AP subject tests related to the area of science. These included: Biology (-0.28), Physics B (-1.11), Physics C: Electricity & Magnetism (-0.55), and Physics C: Mechanics (-0.84). Performance did not change for Latin Literature.

Discussion

For the 2005–2006 school year, a total of 7,529 students were enrolled in AP courses, and the number of test-takers for the AP subject exams totaled 4,358. Moreover, in an analysis matching students who completed AP courses and then took the corresponding AP test, only 52.2% of the students who completed the AP course took the corresponding AP test. In addition, 3,156 Hispanic students enrolled in AP courses during the 2005–2006 academic year; however, only 1,788 were test-takers based upon self-reported demographic information. These data suggest that although there are students enrolling in AP courses, all are not taking the examinations.

Although participation in the Advanced Placement program has improved, there is a great deal of variability among campuses. Out of 31 high school campuses for which the College Board provided AP testing results, the percentage of seniors who took AP subject tests ranged from 0.0% to 58.7% while the participation rate for juniors ranged from 0.0% to 60.3%. Since there are benefits such as scholarships, recognition, and college credit/advanced placement, a large number of

students may be missing out on the opportunities afforded them by participating. According to the College Board website (2006f), "Students whose AP grades exempt them from introductory college courses typically do better in subsequent higher-level courses than those students who actually take the introductory college course." To motivate students to take AP tests, incorporate the assistance of parents by educating them on the benefits, particularly, financial ones.

The data indicate that student performance has been declining from a longitudinal perspective. Although more students are participating, strategic planning is needed to increase the level of performance, especially on those campuses where both participation and performance are low. Components to increase student achievement would encompass strengthening professional development, implementing AP vertical teams to strengthen student preparation at the elementary, middle, and high school level, conducting a needs assessment to ensure that sufficiently qualified science and mathematics teachers are available at all schools, providing opportunities for students to take prerequisite science and math courses, and monitoring the quality of the classes.

The State Board of Education recently announced that students entering high school during the 2007–2008 school year will be required to take four years of math and four years of science under the Recommended High School Program. Since AP and IB science courses in Physics, Chemistry, Biology, and Environmental Science are options to fulfill the new requirements, it would behoove the district to strengthen performance in science, since the data indicate that mean scores have declined in biology and physics-related AP exams. Conducting a needs assessment of staff and resources (labs and materials), should also be undertaken to ensure that a fourth course in science can be met at the high school level. Moreover, there are students that show AP potential based upon their PSAT scores, but lack the necessary prerequisites to take the advanced science or math courses. In view of the changes in graduation requirements, additional opportunities to take prerequisite courses for these tenth grade students are needed.

Students require an educational foundation so that they are prepared to take advanced classes in high school. At the elementary level, a greater emphasis should be placed on critical and analytical thinking skills. When students enter middle school, it is imperative they have the opportunity to take advanced courses in the four core areas during their tenure so that they have a foundation onto which they can build for high school and college. All HISD middle school campuses should offer algebra and integrated physics and chemistry. Vertical teams within feeder patterns should be developed at the elementary, middle, and high school level to ensure a seamless transition and a strong educational foundation for all students in the district.

Issues pertaining to performance are more pronounced when looking at campus-level data. There are a few campuses for which participation and performance are high relative to other HISD campuses, such as Bellaire, Carnegie Vanguard, DeBakey, and HSPVA; however, campuses such as Eastwood, Furr, Jones, Kashmere, MCTC, Wheatley, Worthing, and Yates had low levels of participation and performance. It is imperative that these schools emphasize professional development and work in vertical teams to strengthen the preparation of students in grades prior to taking AP courses and exams. Further, provide assistance to ensure that courses offered on the campus level follow the rigorous standards set forth by the Advanced Placement program.

Recommendations

1. Continue to identify successful efforts to promote participation and performance among students, especially minorities and males, by providing information to students and parents about the benefits of the AP program, which includes scholarships, recognition, and college credit/advanced placement.

2. To increase student achievement, continue to provide adequate and relevant professional development opportunities, especially in the area of science. Additionally, strengthen the curriculum in middle school so that students have a strong educational foundation not only academically, but also with regard to the development of higher order thinking skills and time management skills.

3. On the campus level, monitor the students enrolled in AP courses and the students who subsequently take the AP subject examinations.
4. In order to promote equity and excellence, consideration should be given to creating opportunities for

students to take prerequisite math and science courses so that those showing ability or motivation in tenth grade have the necessary foundation to be successful and meet course requirements.

5. For campuses with low participation and performance rates, focus on the development of vertical teams (elementary, middle, and high school) so that student preparation is strengthened prior to taking AP courses and monitor the rigor of the courses.

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APPENDIX A

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Austin High School	All	729	337	46.2
Austin High School	Female	480	222	46.3
Austin High School	Male	249	115	46.2
Austin High School	Asian	22	12	54.5
Austin High School	African American	18	8	44.4
Austin High School	Hispanic	679	314	46.2
Austin High School	Native	2	1	50.0
Austin High School	White	8	2	25.0
Austin High School	Non-Economic Disadv	71	34	47.9
Austin High School	Economic Disadv	656	302	46.0
Austin High School	EconDisadv Missing	2	1	50.0
Bellaire High School	All	2,838	1,626	57.3
Bellaire High School	Female	1,468	857	58.4
Bellaire High School	Male	1,370	769	56.1
Bellaire High School	Asian	1,137	633	55.7
Bellaire High School	African American	118	65	55.1
Bellaire High School	Hispanic	186	105	56.5
Bellaire High School	White	1,397	823	58.9
Bellaire High School	Non-Economic Disadv	2,497	1,436	57.5
Bellaire High School	Economic Disadv	336	187	55.7
Bellaire High School	EconDisadv Missing	5	3	60.0
Carnegie Vanguard	All	750	390	52.0
Carnegie Vanguard	Female	351	183	52.1
Carnegie Vanguard	Male	399	207	51.9
Carnegie Vanguard	Asian	29	16	55.2
Carnegie Vanguard	African American	225	121	53.8
Carnegie Vanguard	Hispanic	143	75	52.4
Carnegie Vanguard	Native	8	3	37.5
Carnegie Vanguard	White	345	175	50.7
Carnegie Vanguard	Non-Economic Disadv	501	261	52.1
Carnegie Vanguard	Economic Disadv	249	129	51.8
Challenge HS	All	465	190	40.9
Challenge HS	Female	269	114	42.4
Challenge HS	Male	196	76	38.8
Challenge HS	Asian	26	10	38.5
Challenge HS	African American	134	52	38.8
Challenge HS	Hispanic	171	76	44.4
Challenge HS	Native	2	1	50.0
Challenge HS	White	132	51	38.6
Challenge HS	Non-Economic Disadv	212	81	38.2
Challenge HS	Economic Disadv	251	108	43.0
Challenge HS	EconDisadv Missing	2	1	50.0

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Chavez High School	All	1,084	471	43.5
Chavez High School	Female	684	299	43.7
Chavez High School	Male	400	172	43.0
Chavez High School	Asian	87	40	46.0
Chavez High School	African American	93	40	43.0
Chavez High School	Hispanic	846	365	43.1
Chavez High School	White	58	26	44.8
Chavez High School	Non-Economic Disadv	214	90	42.1
Chavez High School	Economic Disadv	865	379	43.8
Chavez High School	EconDisadv Missing	5	2	40.0
Davis High School	All	439	213	48.5
Davis High School	Female	314	153	48.7
Davis High School	Male	125	60	48.0
Davis High School	Asian	3	2	66.7
Davis High School	African American	44	18	40.9
Davis High School	Hispanic	390	192	49.2
Davis High School	White	2	1	50.0
Davis High School	Non-Economic Disadv	86	40	46.5
Davis High School	Economic Disadv	353	173	49.0
DeBakey HSHP	All	1,400	726	51.9
DeBakey HSHP	Female	878	457	52.1
DeBakey HSHP	Male	522	269	51.5
DeBakey HSHP	Asian	636	336	52.8
DeBakey HSHP	African American	374	197	52.7
DeBakey HSHP	Hispanic	285	140	49.1
DeBakey HSHP	Native	12	7	58.3
DeBakey HSHP	White	93	46	49.5
DeBakey HSHP	Non-Economic Disadv	776	400	51.5
DeBakey HSHP	Economic Disadv	624	326	52.2
Eastwood Academy	All	53	26	49.1
Eastwood Academy	Female	23	11	47.8
Eastwood Academy	Male	30	15	50.0
Eastwood Academy	Hispanic	53	26	49.1
Eastwood Academy	Non-Economic Disadv	11	5	45.5
Eastwood Academy	Economic Disadv	42	21	50.0
Furr High School	All	261	147	56.3
Furr High School	Female	169	91	53.8
Furr High School	Male	92	56	60.9
Furr High School	African American	25	17	68.0
Furr High School	Hispanic	220	122	55.5
Furr High School	White	16	8	50.0
Furr High School	Non-Economic Disadv	58	31	53.4
Furr High School	Economic Disadv	203	116	57.1

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Houston High School	All	578	237	41.0
Houston High School	Female	298	123	41.3
Houston High School	Male	280	114	40.7
Houston High School	Asian	14	6	42.9
Houston High School	African American	16	8	50.0
Houston High School	Hispanic	532	216	40.6
Houston High School	White	16	7	43.8
Houston High School	Non-Economic Disadv	66	28	42.4
Houston High School	Economic Disadv	504	207	41.1
Houston High School	EconDisadv Missing	8	2	25.0
HSLEJC	All	420	198	47.1
HSLEJC	Female	293	142	48.5
HSLEJC	Male	127	56	44.1
HSLEJC	Asian	10	4	40.0
HSLEJC	African American	73	36	49.3
HSLEJC	Hispanic	321	153	47.7
HSLEJC	White	16	5	31.3
HSLEJC	Non-Economic Disadv	80	40	50.0
HSLEJC	Economic Disadv	340	158	46.5
HSPVA	All	1,297	740	57.1
HSPVA	Female	923	530	57.4
HSPVA	Male	374	210	56.1
HSPVA	Asian	80	48	60.0
HSPVA	African American	230	135	58.7
HSPVA	Hispanic	177	98	55.4
HSPVA	White	810	459	56.7
HSPVA	Non-Economic Disadv	1,138	641	56.3
HSPVA	Economic Disadv	155	96	61.9
HSPVA	EconDisadv Missing	4	3	75.0
Jones High School	All	134	75	56.0
Jones High School	Female	87	50	57.5
Jones High School	Male	47	25	53.2
Jones High School	Asian	15	8	53.3
Jones High School	African American	84	48	57.1
Jones High School	Hispanic	35	19	54.3
Jones High School	Non-Economic Disadv	30	17	56.7
Jones High School	Economic Disadv	104	58	55.8
Jordan High School for Careers	All	884	474	53.6
Jordan High School for Careers	Female	606	319	52.6
Jordan High School for Careers	Male	278	155	55.8
Jordan High School for Careers	African American	521	286	54.9
Jordan High School for Careers	Hispanic	356	184	51.7
Jordan High School for Careers	Native	5	3	60.0
Jordan High School for Careers	White	2	1	50.0
Jordan High School for Careers	Non-Economic Disadv	233	128	54.9
Jordan High School for Careers	Economic Disadv	649	346	53.3
Jordan High School for Careers	EconDisadv Missing	2	0	0.0

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Kashmere High School	All	123	61	49.6
Kashmere High School	Female	89	45	50.6
Kashmere High School	Male	34	16	47.1
Kashmere High School	African American	102	51	50.0
Kashmere High School	Hispanic	21	10	47.6
Kashmere High School	Non-Economic Disadv	25	11	44.0
Kashmere High School	Economic Disadv	96	48	50.0
Kashmere High School	EconDisadv Missing	2	2	100.0
Lamar High School	All	220	94	42.7
Lamar High School	Female	122	53	43.4
Lamar High School	Male	98	41	41.8
Lamar High School	Asian	35	16	45.7
Lamar High School	African American	39	16	41.0
Lamar High School	Hispanic	37	16	43.2
Lamar High School	White	109	46	42.2
Lamar High School	Non-Economic Disadv	173	73	42.2
Lamar High School	Economic Disadv	47	21	44.7
Lee High School	All	841	308	36.6
Lee High School	Female	499	190	38.1
Lee High School	Male	342	118	34.5
Lee High School	Asian	102	45	44.1
Lee High School	African American	135	49	36.3
Lee High School	Hispanic	551	196	35.6
Lee High School	Native	1	1	100.0
Lee High School	White	52	17	32.7
Lee High School	Non-Economic Disadv	87	26	29.9
Lee High School	Economic Disadv	731	274	37.5
Lee High School	EconDisadv Missing	23	8	34.8
Madison High School	All	708	337	47.6
Madison High School	Female	452	222	49.1
Madison High School	Male	256	115	44.9
Madison High School	Asian	21	11	52.4
Madison High School	African American	470	227	48.3
Madison High School	Hispanic	217	99	45.6
Madison High School	Non-Economic Disadv	172	84	48.8
Madison High School	Economic Disadv	532	250	47.0
Madison High School	EconDisadv Missing	4	3	75.0
MCTC-HS	All	202	90	44.6
MCTC-HS	Female	116	50	43.1
MCTC-HS	Male	86	40	46.5
MCTC-HS	Asian	1	0	0.0
MCTC-HS	African American	150	67	44.7
MCTC-HS	Hispanic	41	19	46.3
MCTC-HS	White	10	4	40.0
MCTC-HS	Non-Economic Disadv	54	22	40.7
MCTC-HS	Economic Disadv	146	68	46.6
MCTC-HS	EconDisadv Missing	2	0	0.0

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Milby High School	All	1,120	519	46.3
Milby High School	Female	663	310	46.8
Milby High School	Male	457	209	45.7
Milby High School	Asian	22	11	50.0
Milby High School	African American	48	19	39.6
Milby High School	Hispanic	1,046	488	46.7
Milby High School	White	4	1	25.0
Milby High School	Non-Economic Disadv	173	71	41.0
Milby High School	Economic Disadv	943	445	47.2
Milby High School	EconDisadv Missing	4	3	75.0
Newcomers Charter	All	26	11	42.3
Newcomers Charter	Female	12	5	41.7
Newcomers Charter	Male	14	6	42.9
Newcomers Charter	Hispanic	26	11	42.3
Newcomers Charter	Non-Economic Disadv	3	1	33.3
Newcomers Charter	Economic Disadv	16	6	37.5
Newcomers Charter	EconDisadv Missing	7	4	57.1
Reagan High School	All	633	324	51.2
Reagan High School	Female	352	184	52.3
Reagan High School	Male	281	140	49.8
Reagan High School	Asian	26	13	50.0
Reagan High School	African American	25	14	56.0
Reagan High School	Hispanic	551	282	51.2
Reagan High School	White	31	15	48.4
Reagan High School	Non-Economic Disadv	84	44	52.4
Reagan High School	Economic Disadv	544	279	51.3
Reagan High School	EconDisadv Missing	5	1	20.0
Scarborough High School	All	299	154	51.5
Scarborough High School	Female	184	102	55.4
Scarborough High School	Male	115	52	45.2
Scarborough High School	Asian	2	1	50.0
Scarborough High School	African American	42	19	45.2
Scarborough High School	Hispanic	145	69	47.6
Scarborough High School	White	110	65	59.1
Scarborough High School	Non-Economic Disadv	145	79	54.5
Scarborough High School	Economic Disadv	154	75	48.7
Sharpstown High School	All	364	174	47.8
Sharpstown High School	Female	198	95	48.0
Sharpstown High School	Male	166	79	47.6
Sharpstown High School	Asian	62	32	51.6
Sharpstown High School	African American	100	50	50.0
Sharpstown High School	Hispanic	161	77	47.8
Sharpstown High School	White	41	15	36.6
Sharpstown High School	Non-Economic Disadv	83	37	44.6
Sharpstown High School	Economic Disadv	276	137	49.6
Sharpstown High School	EconDisadv Missing	5	0	0.0

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Sterling High School	All	183	84	45.9
Sterling High School	Female	105	48	45.7
Sterling High School	Male	78	36	46.2
Sterling High School	Asian	4	2	50.0
Sterling High School	African American	150	68	45.3
Sterling High School	Hispanic	25	12	48.0
Sterling High School	White	4	2	50.0
Sterling High School	Non-Economic Disadv	61	28	45.9
Sterling High School	Economic Disadv	119	54	45.4
Sterling High School	EconDisadv Missing	3	2	66.7
Waltrip High School	All	1,427	693	48.6
Waltrip High School	Female	781	381	48.8
Waltrip High School	Male	646	312	48.3
Waltrip High School	Asian	27	15	55.6
Waltrip High School	African American	215	104	48.4
Waltrip High School	Hispanic	715	338	47.3
Waltrip High School	White	470	236	50.2
Waltrip High School	Non-Economic Disadv	721	360	49.9
Waltrip High School	Economic Disadv	706	333	47.2
Washington High School	All	852	481	56.5
Washington High School	Female	325	178	54.8
Washington High School	Male	527	303	57.5
Washington High School	Asian	22	13	59.1
Washington High School	African American	553	310	56.1
Washington High School	Hispanic	215	123	57.2
Washington High School	White	62	35	56.5
Washington High School	Non-Economic Disadv	361	204	56.5
Washington High School	Economic Disadv	482	271	56.2
Washington High School	EconDisadv Missing	9	6	66.7
Westbury High School	All	862	476	55.2
Westbury High School	Female	527	300	56.9
Westbury High School	Male	335	176	52.5
Westbury High School	Asian	69	39	56.5
Westbury High School	African American	325	182	56.0
Westbury High School	Hispanic	312	152	48.7
Westbury High School	White	156	103	66.0
Westbury High School	Non-Economic Disadv	376	215	57.2
Westbury High School	Economic Disadv	474	251	53.0
Westbury High School	EconDisadv Missing	12	10	83.3
Westside High School	All	3,241	1,692	52.2
Westside High School	Female	1,668	872	52.3
Westside High School	Male	1,573	820	52.1
Westside High School	Asian	546	307	56.2
Westside High School	African American	460	219	47.6
Westside High School	Hispanic	617	307	49.8
Westside High School	Native American	11	6	54.5
Westside High School	White	1,607	853	53.1

APPENDIX A (CONT'D)

AP Course Completion by Race/Ethnicity, Gender, Economic Status, and Campus

School name	Group	# Enrolled	# Completed	% Completed
Westside High School	Non-Economic Disadv	2,367	1,234	52.1
Westside High School	Economic Disadv	851	442	51.9
Westside High School	EconDisadv Missing	23	16	69.6
Wheatley High School	All	201	110	54.7
Wheatley High School	Female	129	68	52.7
Wheatley High School	Male	72	42	58.3
Wheatley High School	African American	149	85	57.0
Wheatley High School	Hispanic	52	25	48.1
Wheatley High School	Non-Economic Disadv	2	1	50.0
Wheatley High School	Economic Disadv	195	106	54.4
Wheatley High School	EconDisadv Missing	4	3	75.0
Worthing High School	All	257	132	51.4
Worthing High School	Female	188	96	51.1
Worthing High School	Male	69	36	52.2
Worthing High School	Asian	3	2	66.7
Worthing High School	African American	240	122	50.8
Worthing High School	Hispanic	8	5	62.5
Worthing High School	Native American	4	2	50.0
Worthing High School	White	2	1	50.0
Worthing High School	Non-Economic Disadv	62	33	53.2
Worthing High School	Economic Disadv	193	98	50.8
Worthing High School	EconDisadv Missing	2	1	50.0
Yates High School	All	376	187	49.7
Yates High School	Female	266	132	49.6
Yates High School	Male	110	55	50.0
Yates High School	Asian	6	2	33.3
Yates High School	African American	346	173	50.0
Yates High School	Hispanic	24	12	50.0
Yates High School	Non-Economic Disadv	143	73	51.0
Yates High School	Economic Disadv	233	114	48.9

APPENDIX B

Comparison of HISD and National Mean AP Scores by Subject, Gender, and Ethnicity, 2006

Subject	HISD						National					
	F	M	Asian	Hisp.	Af.Am	White	F	M	Asian	Hisp.	Af. Am.	White
Art: History	3.38	3.80	*	2.83	-	4.07	2.75	2.85	2.70	2.10	1.94	2.76
Art: Studio Drawing	3.10	2.75	3.00	*	*	3.00	3.05	2.93	3.28	2.81	2.58	3.06
Art: Studio 2-D	3.58	3.50	3.00	*	-	4.00	2.91	2.95	3.07	2.71	2.55	2.95
Art: Studio 3-D	-	-	-	-	-	-	2.93	3.07	2.87	3.04	2.70	2.99
Biology	2.90	3.22	3.58	2.12	1.59	3.91	2.89	3.24	3.31	2.16	1.94	3.10
Calculus AB	2.66	2.75	3.25	2.02	2.25	3.38	2.89	3.14	3.21	2.22	1.95	3.11
Calculus BC	3.70	3.77	3.71	2.60	3.44	4.09	3.56	3.82	3.87	2.98	2.88	3.68
Chemistry	2.67	3.26	3.84	1.73	2.00	3.19	2.61	3.04	3.14	1.98	1.82	2.84
Comp. Sci. A	2.81	3.08	3.05	3.17	*	3.14	2.64	2.95	3.00	2.06	1.67	3.07
Comp. Sci AB	-	3.00	*	*	-	2.80	3.22	3.40	3.48	2.90	2.49	3.38
Econ. Micro	3.47	3.24	3.92	2.09	2.00	3.92	2.71	3.19	3.21	2.01	1.89	3.06
Econ. Macro	3.04	3.08	3.38	2.12	2.00	3.37	2.49	2.95	2.99	1.84	1.82	2.85
Eng.Lang.&Comp.	2.04	2.09	2.87	1.55	1.37	2.97	2.83	2.69	2.74	2.01	1.89	2.76
English Lit. & Comp.	2.24	2.38	2.95	1.74	1.74	3.14	2.89	2.89	2.93	2.22	1.97	2.99
Env. Sci.	1.78	2.51	2.33	1.60	1.86	2.80	2.41	2.81	2.70	1.86	1.56	2.71
European History	2.67	3.92	3.67	2.29	3.00	3.95	2.86	3.14	3.06	2.34	2.17	3.02
French: Lang.	2.53	2.56	2.14	2.33	2.00	3.11	2.62	2.64	2.49	2.07	2.61	2.57
French: Lit.	1.88	*	*	*	-	1.80	2.99	2.84	2.95	1.38	2.32	2.76
Germ. Lang.	4.29	3.88	4.00	*	-	4.17	3.24	3.02	3.02	2.39	2.32	3.08
Gov. Pol. U.S.	2.02	2.35	2.96	1.48	1.48	3.02	2.60	2.90	2.80	2.02	1.97	2.90
Gov. Comp.	-	*	*	*	-	*	2.58	2.88	2.82	1.93	1.72	2.82
Human Geog.	3.67	3.61	3.96	3.43	3.33	3.62	2.70	3.02	3.18	2.02	1.88	3.02
Italian Language	-	*	-	*	-	*	2.69	2.57	1.93	3.12	2.29	2.45
Latin: Vergil	2.63	2.60	*	*	-	2.67	2.98	2.93	3.17	2.06	2.45	2.70
Latin: Lit.	*	*	*	-	-	*	3.16	3.04	3.17	2.50	2.33	2.88
Music Theory	3.70	3.22	3.29	*	2.50	3.95	3.05	3.19	3.47	2.36	2.44	3.22
Phys. B	1.91	2.67	3.07	1.31	2.00	3.67	2.50	2.91	2.86	1.87	1.78	2.84
Phys.C: Elec.& Mag.	*	4.27	3.93	-	*	4.75	3.26	3.56	3.59	2.81	2.94	3.52
Phys.C: Mechanics	4.20	3.61	3.87	*	*	4.43	2.90	3.41	3.38	2.41	2.41	3.33
Psychology	3.12	3.51	3.69	1.79	2.23	3.85	3.11	3.20	3.27	2.44	2.16	3.28
Spanish: Lang	3.98	3.91	3.00	4.10	2.00	3.44	3.40	3.32	2.84	3.85	1.99	2.72
Spanish: Lit.	2.90	2.64	3.86	2.57	-	3.75	2.82	2.72	3.27	2.64	2.31	3.02
Statistics	2.51	3.08	3.56	1.59	1.82	3.00	2.66	3.05	3.08	2.05	1.78	2.94
U.S. History	2.23	2.39	3.28	1.54	1.42	3.30	2.64	2.86	2.87	1.93	1.83	2.83
World History	1.97	2.44	3.38	1.44	1.55	2.80	2.45	2.83	2.90	1.87	1.79	2.77

*No scores reported for less than five students

Source: National Summary Report and 2006 College Board Report. Hispanic students include Mexican American, Puerto Rican, and Other Hispanic. If scores were not available on the national level, they were not included in the calculations. The national data reflect totals for Public School Students by race/ethnicity. The data presented for gender reflect all students.

APPENDIX C

Ethnic and Gender Differential, 2006

	2006		
Subject	Male-Female	White-Af.Am.	White-Hisp.
Art: History	0.42	N/A	1.24
Art: Studio 2-D	-0.08	N/A	N/A
Art Studio 3-D	N/A	N/A	N/A
Art: Studio Drawing	-0.35	N/A	N/A
Biology	0.32	2.32	1.79
Calculus AB	0.09	1.13	1.36
Calculus BC	0.07	0.65	1.49
Chemistry	0.59	1.19	1.46
Comp. Sci. A	0.27	N/A	-0.03
Comp. Sci AB	N/A	N/A	N/A
Econ. Macro	0.04	1.37	1.25
Econ. Micro	-0.23	1.92	1.83
Eng. Lang.&Comp.	0.05	1.60	1.42
English Lit.	0.14	1.40	1.40
Environmental Sci.	0.73	0.94	1.20
European Hist.	1.25	0.95	1.66
French: Lang.	0.03	1.11	0.78
French: Lit.	N/A	N/A	N/A
German: Lang.	-0.41	N/A	N/A
Gov. Politics Comp	N/A	N/A	N/A
Gov. Politics U.S.	0.33	1.54	1.54
Human Geog.	-0.06	0.29	0.19
Italian Language	N/A	N/A	N/A
Latin: Lit.	N/A	N/A	N/A
Latin: Vergil	-0.03	N/A	N/A
Music Theory	-0.48	1.45	N/A
Phys. B	0.76	1.67	2.36
Phys.C: Elec& Mag.	N/A	N/A	N/A
Phys. C: Mech.	-0.59	N/A	N/A
Psychology	0.39	1.62	2.06
Spanish: Lang	-0.07	1.44	-0.66
Spanish: Lit.	-0.26	N/A	1.18
Statistics	0.57	1.18	1.41
U.S. History	0.16	1.88	1.76
World History	0.47	1.25	1.36

APPENDIX D

2006 AP Performance Based on Percentage of Students Enrolled in Grades 10, 11, and 12 scoring 3 or higher on at least one AP exam and Graduating Class Summary

School Name	AP test-takers scoring 3 or Higher Based on Enrollment by Grade: % of 10th Grade	% of 11th Grade	% of 12th Grade	% of Graduating Class
Austin	0.0	8.1	2.0	9.3
Bellaire	20.1	38.6	36.6	46.3
Carnegie Vanguard	30.6	37.6	34.4	56.3
Challenge Early College HS	27.9	13.0	4.9	17.1
Chavez	1.0	4.6	5.6	18.6
Davis	1.6	10.2	5.0	11.7
DeBakey	3.9	37.8	48.4	59.5
Eastwood	0.0	0.0	0.0	3.8
Furr	0.0	0.0	0.0	0.0
Houston	2.5	4.0	2.9	6.3
HSLEJC	4.8	21.6	9.6	27.2
HSPVA	6.1	37.7	19.4	31.6
Jones	0.0	0.0	1.1	1.7
Jordan	7.6	3.4	0.0	2.8
Kashmere	0.0	0.0	0.0	0.0
Lamar	0.2	1.3	7.0	9.1
Lee	0.2	1.2	4.8	8.2
Madison	0.4	0.6	1.9	2.3
MCTC-HS	2.2	0.0	0.0	0.0
Milby	1.9	3.8	6.8	13.6
Reagan	16.4	23.2	31.4	100.0
Scarborough	0.5	0.5	2.7	9.1
Sharpstown	0.3	5.7	6.8	9.0
Sterling	0.4	0.0	0.5	1.0
Waltrip	0.0	3.8	1.3	2.6
Washington	0.8	2.9	3.6	4.3
Westbury	1.2	1.4	2.1	4.0
Westside	12.4	18.0	25.5	38.2
Wheatley	0.0	0.0	0.0	0.0
Worthing	0.0	0.4	0.0	0.0
Yates	0.0	0.0	0.0	0.3

Source: 2006 College Board Report.
Note: Results do not include data for students enrolled in ninth grade or lower. The percentage of enrollment by grade measures the students enrolled in grades 10, 11, and 12 who scored 3 or higher on at least one AP exam during the 2006 school year. The Graduating Class Summary shows what percentage of students in grade 12 scored a 3 or higher at any point in their high school years.

APPENDIX E

HISD Mean Scores by AP Subject Test, 1996–2006

Subject	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Art: History	-	*	*	*	*	1.55	3.16	3.72	3.84	3.21	3.54
Art: Studio Drawing	*	3.20	3.58	3.27	*	3.79	3.20	2.42	3.55	3.63	2.94
Art: Studio General	-	-	*	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Art: Studio 2-D Design	N/A	N/A	N/A	N/A	*	*	2.33	3.40	3.50	2.58	3.56
Art: Studio 3-D Design	N/A	N/A	N/A	N/A	-	-	-	-	-	-	-
Biology	3.32	3.38	3.39	3.57	3.26	3.18	3.14	2.84	3.09	2.73	3.04
Calculus AB	2.94	2.51	2.79	2.73	2.96	2.89	2.97	3.06	2.85	2.51	2.70
Calculus BC	2.89	3.57	3.04	2.93	3.26	3.25	3.46	3.58	3.69	3.70	3.74
Chemistry	2.89	3.29	2.69	2.81	3.24	2.25	2.88	2.57	2.96	3.11	3.00
Comp. Sci. A	*	*	*	2.30	2.05	2.64	2.65	2.77	2.87	2.86	3.00
Comp. Sci AB	*	*	*	-	3.33	3.00	3.75	3.00	*	*	3.00
Econ. Micro	3.38	3.32	3.80	3.38	3.02	2.41	2.78	3.00	3.04	3.37	3.31
Econ. Macro	3.55	3.47	3.49	3.84	3.57	3.83	3.79	3.68	3.43	3.43	3.06
Eng. Lang.&Comp.	2.91	3.01	3.11	2.95	2.58	2.55	2.52	2.49	2.37	2.20	2.06
English Lit.&Comp.	3.14	3.14	3.06	2.67	2.80	2.80	2.73	2.73	2.62	2.36	2.30
Environmental Sci.	-	-	-	1.09	1.36	1.19	1.78	1.38	2.49	2.52	2.12
European Hist.	2.83	2.75	2.91	2.78	3.04	2.51	2.97	2.73	3.56	2.65	3.44
French: Lang.	3.11	2.95	3.10	3.19	2.36	2.66	2.89	2.58	2.29	2.31	2.55
French: Lit.	*	*	*	*	3.17	*	3.33	2.86	2.67	2.53	1.90
German: Lang.	*	*	2.60	3.83	2.88	4.00	4.06	2.20	3.65	3.31	4.07
Gov. Politics U.S.	3.18	3.46	3.09	2.75	2.73	2.85	2.86	2.76	2.56	2.30	2.16
Gov. Politics Comp	-	*	3.43	2.50	2.42	2.38	*	*	*	1.88	2.50
Human Geog.	N/A	N/A	N/A	N/A	-	4.38	3.43	3.94	4.06	3.03	3.64
International Eng. Lang.	-	-	-	-	-	-	*	-	-	-	-
Italian Language	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	*
Latin: Vergil	2.60	-	-	*	*	-	-	*	2.75	*	2.62
Latin: Lit.	-	-	-	*	-	-	1.00	3.00	*	3.60	1.00
Music Theory	*	*	3.77	3.79	3.92	4.14	3.87	4.23	3.81	3.70	3.49
Phys. B	3.50	2.31	1.67	1.56	2.15	2.70	2.77	3.20	2.55	2.52	2.39
Phys.C: Elec& Mag.	4.71	4.55	3.67	3.75	2.80	2.00	4.10	4.06	3.67	3.85	4.16
Phys. C: Mech.	4.55	4.21	3.76	4.20	2.47	2.67	3.38	3.77	4.28	3.35	3.71
Psychology	-	1.70	3.40	3.16	2.77	2.33	2.00	3.00	3.63	3.27	3.26
Spanish: Lang	4.19	4.19	4.09	4.24	4.23	4.37	3.96	4.22	4.02	3.59	3.96
Spanish: Lit.	2.67	2.83	2.92	3.20	3.22	3.23	3.06	2.82	2.70	2.81	2.81
Statistics	-	4.57	4.15	4.50	4.00	3.83	3.61	3.10	2.79	2.82	2.80
U.S. History	2.89	2.33	2.45	2.36	2.20	2.13	2.24	2.16	2.38	2.13	2.30
World History	N/A	N/A	N/A	N/A	-	-	2.67	3.03	2.45	2.48	2.17

Source: College Board Reports, 1996–2006. Data reflect the most current results.