



The Preuss School at UCSD:  
School Characteristics and Students' Achievement

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Larry McClure, Betsy Strick,  
Rachel Jacob-Almeida & Christopher Reicher

The Center for Research on Educational Equity,  
Assessment and Teaching Excellence  
University of California, San Diego  
La Jolla California 92024-0036  
<http://create.ucsd.edu/>

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## Executive Summary

The Preuss School, a charter school located on the campus of University of California, San Diego, was founded to expand educational opportunity for students from low-income households.

The School offers all students a rigorous academic curriculum supported by a differentiated system of academic and social supports, including a longer school day, a longer school year, intensive tutoring, mentoring, counseling, and parent education opportunities.

The School admits only students who qualify for federal meal assistance and whose parents or guardians have not graduated from a four-year college. In addition, the School seeks students who show academic promise but who may not have lived up to their full potential. When the number of applicants exceeds the available spaces at the school, applicants are entered into a lottery and the results of that random drawing determine which applicants receive an offer of admission to the school. Students who are unsuccessful in the lottery are placed on a waitlist and these students serve as a control group, enabling comparisons directed at determining the effectiveness of the Preuss School.

Parts 1 and 2 of this report present information from public sources about Preuss School enrollment trends and student demographics, test scores and course-taking patterns from 2000 through 2005 and college enrollment and matriculation information about the Class of 2005. Parts 3 and 4 present information about Preuss School students compared to students who applied to the School but were not chosen for admission in the random drawing. These comparisons are vitally important, because the only systematic difference between Preuss School students and those who were not chosen for admission in the random drawing is, quite literally, the luck of the draw. Therefore comparisons between these two groups are likely to reflect differences resulting from the different school environments of the two groups.

### College enrollment information for the Class of 2005:

- According to the Preuss School all 75 members of the 2005 graduating Class plan to continue their education at either a 2-year or a 4-year institution. 87% will attend 4-year colleges or universities and 13% will enroll in local community colleges.
- 44% will enroll in UC, 27% in CSU, 16% in private colleges (including Harvard, Colgate, Xavier, Howard); 13% will enroll in community colleges with an option to transfer to UC after 2 years.

### Part 1 - Enrollment trends and demographic information about the Preuss School:

- In 2003-2004, the Preuss School had the highest API score in San Diego County for schools with greater than 80% of students eligible for meal assistance and ranked in the top 15 of all schools, regardless of meal assistance eligibility.
- The Preuss School opened with 150 students in grades 6-8 in 1999-2000 and reached its enrollment capacity of 766 in the 2003/2004 school year.
- 58.1% of the student population is Latino, 13.3% is African American, 20% is Asian, 6% is White, 2.2% is Filipino, and 0.4% is Pacific Islander (2003/2004 school year).
- 3.65% of the School population is designated as "English Language Learners"; of that group, 82.2% speak Spanish as a first language
- The 41 full-time teachers in 2003-2004 average 6.8 years of teaching experience; 90% are fully credentialed.

## **Part 2 - Test score information and course-taking patterns:**

- 100% of the Preuss School graduating Class of 2005 completed the UC/CSU A-G requirements; the rate for the graduating Classes in San Diego County from 2001 through 2005 ranged from 35% to 39%.
- 92% of the Preuss School graduating Class of 2006 had passed both portions of the California High School Exit Exam by November 2004.
- Students across grade levels wrote 277 Advanced Placement examinations during the 2003-04 school year; 201 (72.6%) received a score of 3 or higher, potentially earning successful test takers college credit.
- 98% of the Class of 2004 took the SAT-I in 2002-03; the California average was 37% and the SDCS average was 49%.

## **Part 3 - Information about the performance of Preuss School and Comparison Group students on academic indicators:**

### ***Class of 2005***

- On the California Standards Test (CST) in 2003-2004, the Class of 2005 at the Preuss School and in the Comparison Group recorded nearly identical scores across subject areas
- On the CST in 2002-2003, students in the Class of 2005 at the Preuss School and in the Comparison Group recorded nearly identical scores, except in the History portion of the exam, where the Preuss Students scored significantly higher.
- Preuss students in the Class of 2005 had successfully completed more A-G courses in the subject areas of Language other than English, Visual and Performing Arts and College Electives than did the Comparison Group students at the end of the 2003/04 school year (the last year for which complete data is available). Preuss students had completed 3.0 years of Language other than English, 0.82 years of Visual and Performing Arts and 1.0 years of College Electives against 2.2, 0.55 and 0.75 years, respectively, for the Comparison Group. Each of these differences was statistically significant.
- Students in the graduating Class of 2005 at the Preuss School and in the Comparison Group had essentially the same unweighted and weighted GPA through the end of their junior year in 2003-04 (Successful completion of courses designated as Advanced Placement, Honors, or International Baccalaureate earn an additional grade point in recognition of the difficulty of the material. Weighted GPA includes these additional grade points).
- Students in the graduating Class of 2005 at the Preuss School and in the Comparison Group scored essentially the same on the CAT/6 in 2002-03 and in 2003-2004.

### ***Class of 2006***

- On the California Standards Test in 2003-2004, students in the Class of 2006 at the Preuss School and in the Comparison Group recorded nearly identical scores, except in the Geometry examination, where the Preuss Students scored significantly higher.
- On the California Standards Test in 2002-2003, students in the graduating Class of 2006 at the Preuss School and in the Comparison Group recorded nearly identical scores.
- Students in the graduating Class of 2006 at the Preuss School and in the Comparison Group scored similarly on the CAT/6 in 2002-03 and in 2003-04.

- Preuss students in the Class of 2006 had a significantly higher weighted GPA than did Comparison students through the 2003-2004 academic year and unweighted GPA was essentially the same for both groups.
- By the end of the 10<sup>th</sup> grade, Preuss students in the graduating Class of 2006 had completed significantly more A-G course years (9.90) than the Comparison Group (8.20). Courses in History/Social Science and College Electives accounted for this difference.

#### **Part 4 – Preuss & Comparison Class of 2005 educational experiences and college application, acceptance and attendance rates**

- Part 4 reports on the college application, acceptance, and attendance rates of Cohort 2005 in Fall 2005, along with students' perspectives on their educational experiences. It is based on interviews and surveys with 57 students and parents.
- 100% of the 31 Preuss graduates and 63% of the 19 Comparison Group graduates participated in the study, although numerous attempts were made to include all students in both groups.
- Comparison students participating in the study (63.16%) performed slightly better than non-participants (37.84%) on academic and college eligibility measures in 2002-03 and 2003-04, according to academic records, suggesting self-selection among Comparison participants.

#### **College Attendance**

- A higher proportion of Preuss than Comparison Group graduates are attending four-year colleges in Fall 2005. Even if we assume that all Comparison Group students who could not be reached are attending four-year colleges, the Preuss 4-year college attendance rates (90.3%) are higher than Comparison college attendance rates (78.9%): 42.1% of the nineteen graduating Comparison students are attending 4-year colleges, and another 36.8% did not participate in the study.
- Preuss students submitted more college applications (an average of about 10 for Preuss and 4.25 for Comparison students), received more acceptances (averaging 6.8 for Preuss and 3.125 for Comparison students), and had more options about which college to attend; Comparison students were accepted at a higher proportion of the colleges they applied to.

#### **College Eligibility**

- A higher proportion of Preuss than Comparison students took the SAT I (100% vs. 92%) and a significantly higher proportion of Preuss (100%) than Comparison (58%) students took the SAT II. However, Comparison students have higher average scores on the SAT I (1098) than Preuss students (1083), according to self-reported scores, and higher SAT II Language 1 scores (Comparison 611 v. Preuss 539).
- A higher proportion of Preuss than Comparison Group students received funding for attending four-year colleges (100% of 28 Preuss students in 4-year colleges, and 4 of 5 Comparison students who applied for 4-year college funding), though the mean funding received by Comparison students was slightly higher.

## **School Environment**

- Preuss students more consistently received practical supports at their school such as academic counseling, SAT testing, SAT fee waivers, access to advanced courses and support in applying for college funding than did Comparison Group students.
- When asked about their school's mission, Preuss students consistently noted it is to have all students attend four-year colleges, while Comparison students more often describe the school mission as graduating students from high school.
- Preuss offers a single course of study for all students, while Comparison students' comprehensive high schools provide more variety in courses and programs and the expectation of a wide range of student academic outcomes.
- In some cases, Comparison students were unfamiliar with college preparation requirements, and they did not always receive information about how to become college-eligible.
- Preuss students perceive their teachers and counselor as interested in their success and as caring and helpful; this is the case for some but not all Comparison students.
- The great majority of Preuss students are focused on attending college, providing a peer culture that supports college-going. Most but not all Comparison students found friends who shared and encouraged the goal of attending college.

## **Conclusion**

At the time they applied, students in the graduating class of 2005 who were accepted into the Preuss School and students who were not accepted into the Preuss School had similar academic records as measured by State-mandated standardized tests. They also accumulated similar academic records during middle school and high school. Their state-mandated standardized test scores were similar; their GPAs were similar; their SAT I and SAT II scores were similar.

One important difference between Preuss and comparison students concerned preparation for college and enrollment in college. Preuss students completed more courses required for entrance into UC/CSU (the 'a-g' pattern) than the comparison group. A higher proportion of Preuss than comparison students took the SAT I and a significantly higher proportion of Preuss students than comparison students took the SAT II. Whereas 90.3% of Preuss School graduates enrolled in 4-year colleges in Fall 2005, we estimate that between 42.1% and 78.9% of the students in the Comparison Group enrolled in 4-year colleges in Fall 2005.

# Part 1: School Characteristics

## Student Enrollment<sup>2</sup>

### WHAT IS BEING MEASURED?

Reported here are the total numbers of students enrolled, by year (Figure 1.1.1), as well as the number of students at each grade level at the Preuss Model School at UCSD (Figure 1.1.2). Enrollment figures are reported to the California Department of Education during the month of October each academic year.

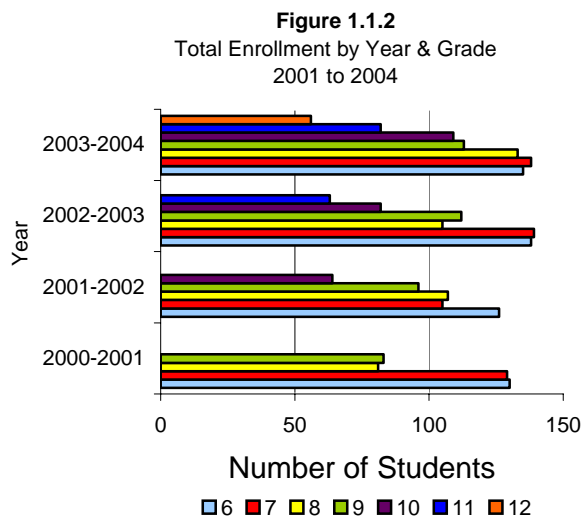
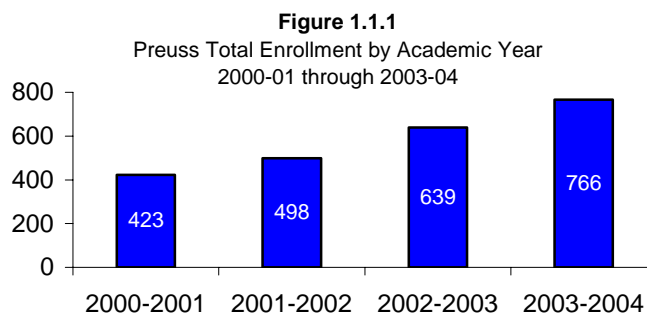
### NOTABLE FACTS:

- Preuss School reached its enrollment capacity of 766 in the 2003/2004 school year.
- From 2000-01 to 2003-04 the Preuss School added both students and grade levels to reach enrollment capacity.

All students in San Diego County area are welcome to apply for admission to the Preuss School. Successful applicants demonstrate a high level of motivation and family support, meet federal guidelines for economic support known as "Title One" or "Free or Reduced Price Lunch" and come from households where parents or guardians did not graduate from a four-year college or university.

When the number of applicants meeting the admission criteria exceeds available space, a lottery is held to ensure that applicants have an equal chance for admission to the school.

The Preuss Model School has grown dramatically since opening its doors to 150 students in grades 6-8 in 1999-00. The maximum planned enrollment was approximately 750 students across grades 6 through 12, and the school reached this enrollment limit in 2003-2004 by steadily adding both grade levels and students in each academic year (Figure 1.1.2).



### SOURCES:

Information regarding student enrollment is available at the California Department of Education Web site at <http://data1.cde.ca.gov/dataquest>. Unless otherwise noted, all data presented in sections 1 and 2 of this report comes from the CDE.

<sup>2</sup> Sections 1 and 2 of this report provide information on all Preuss Students. Sections 3 and 4 are specific and report on the subgroup of students who went through the lottery selection process, were admitted or wait-listed based on the results of the lottery and were in continuous attendance at either at the Preuss School or in one of the schools in the San Diego Unified School District .

# Student Enrollment by Race & Ethnicity

## WHAT IS BEING MEASURED?

The State of California characterizes K-12 students by race and ethnicity using eight classifications: American Indian/Alaskan Native, Asian, Pacific Islander, Filipino, Hispanic or Latino, African American, White or Anglo, and multiple or no response. Parents identify a child's race/ethnicity as part of the enrollment process and this information is reported to the State on an annual basis. Presented here are the enrollments by race and ethnicity for County of San Diego and the Preuss School in the 2003/2004 school year.

## NOTABLE FACTS:

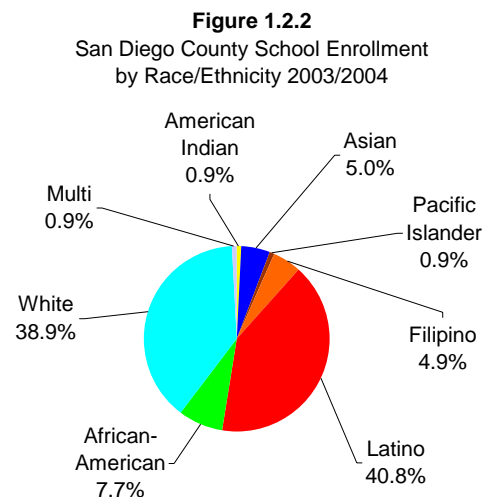
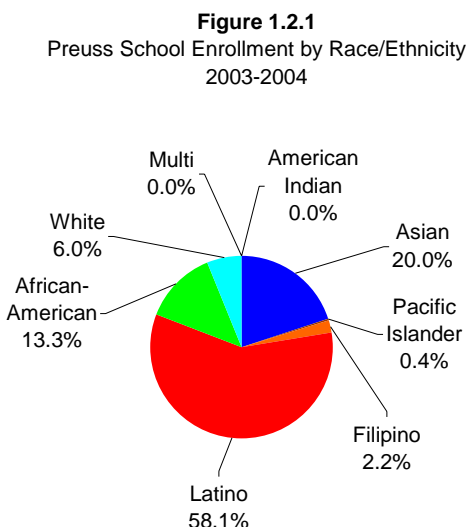
- Preuss has a racially and ethnically diverse learning community different than that found in San Diego County.
- 78% of the students enrolled during the 2003-2004 academic year were Latino & Asian.

The Preuss School has a racially and ethnically diverse student body. While admission to the school is race-blind, the income and parental education requirements for admission have attracted a diverse student body that is quite different from that found in greater San Diego County (Figures 1.2.1 & 1.2.2).

Approximately 94% of the students attending Preuss are nonwhite and when combined, Latino and Asian students represent 78% of the students enrolled at the school. Over the past four years Latino students have been the largest group at Preuss, representing 52% of total students in 1999, 53% in 2000, 56% in 2001, 57% in 2002-03, and 58% during the 2003-2004 school year. The number of Asian students attending Preuss has increased dramatically, nearly doubling, from 11% in 1999-00 to 20% in 2003-2004.

The number of African-American students has declined over the past several years from 24% in 1999-00 to 13% in 2003-2004. The enrollment of African-American students at Preuss in 2003-2004 is substantially higher than in either San Diego County or the State, both at approximately 8 percent.

California enrollment by group in 2003-04 were: approximately 1% American Indian, 8% Asian, 1% Pacific Islander, 3% Filipino, 46% Latino, 8% African American, 32% Anglo, and 1% provided multiple or no response.





## English Learners

### WHAT IS BEING MEASURED?

This section provides information on the number of English Learners (EL) enrolled at the Preuss School. Students complete a “Home Language Survey” when they enroll and students indicating a language other than English as their home language are given the California English Language Development Test (CELDT) to determine their English language proficiency. Students who perform poorly on the CELDT are designated EL students and those performing well are classified as Fluent English Proficient (FEP). EL students at Preuss are retested annually and once CELDT scores indicate proficiency, students are redesignated, moving to FEP status. The rate of redesignation is calculated annually and is determined by dividing the number of redesignated students by the prior year’s EL count, then multiplying by 100.

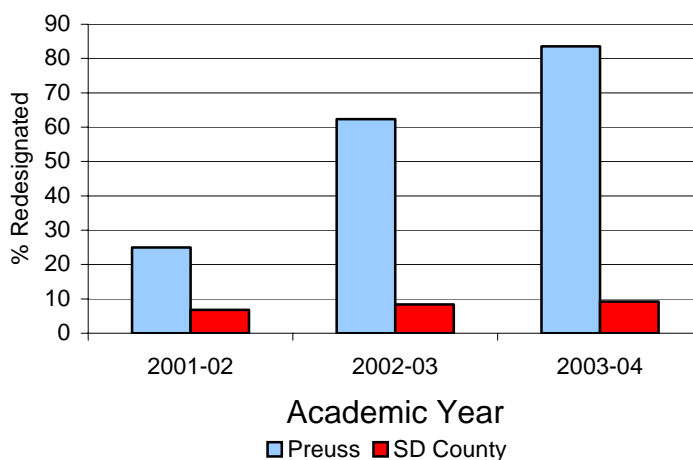
### NOTABLE FACTS:

- Approximately four (3.65%) percent of Preuss students are designated English Learners, a much lower proportion than found in San Diego County (23.4%).
- The lower proportion of EL students at Preuss is due, at least in part, to the higher rate of testing and redesignation to English fluency.

The English Learning (EL) community at the Preuss School is diverse (Figure 1.3.1), with students coming from homes where Spanish, Vietnamese, and Hmong are spoken. Spanish has remained the dominant language in the EL community but has declined over time from 88% in 2000-01 to 82% in 2003-2004.

English Learners accounted for approximately 4% of Preuss students in 2003-2004. This is a substantial drop from previous years where the percentage of students in the EL program was 10%-12%. By comparison, 23.4% of students enrolled in San Diego County are designated English Learners (Figure 1.3.2). This difference is best understood by looking at the redesignation rate from EL to FEP in the two groups. Students at Preuss have taken and passed the CELDT at an unusually high rate relative to the County (Figure 1.3.3). Once the CELDT is passed, students are redesignated FEP and are removed from the English Learner category.

**Figure 1.3.1**  
English Learner Redesignation Rates  
2001-02 through 2003-04



# Teachers

## WHAT IS BEING MEASURED?

The information in Figure 1.4.1 and Table 1.4.2 describe the professional characteristics of the teachers at the Preuss School and in San Diego County. Included is information about classroom experience, degrees earned, credentials obtained, and gender for the 2003/2004 academic year.

## NOTABLE FACTS:

- Teachers at the Preuss School have fewer years of classroom experience when compared to the San Diego County averages.
- 34% of the teachers at the Preuss School are “beginning teachers” with one or two years of classroom experience.

The 41 teachers\* on staff at the Preuss School in 2003-04 were ethnically diverse (Figure 1.4.1) and averaged 6.8 years of experience compared to the San Diego County average of 12.8 years (Table 1.4.2); 43.9% had earned a masters or PhD degree, compared to the county average of 44.3%. According to the CDE, 90.2% of Preuss School teachers and 97.3% of San Diego County teachers were fully credentialed. The Preuss School has a higher proportion of new teachers, those in their first or second year of teaching, 34% at Preuss and 12% in San Diego County. More teachers at Preuss are male than in the County: 48.8% compared to 27.3%.

The number of teachers at the Preuss School has increased as the school has grown; it began with 10 in 1999, more than doubled to 25 in 2000-01, increased to 27 in 2001-02, reached 36 in 2002-03, and 41 in 2003-04.

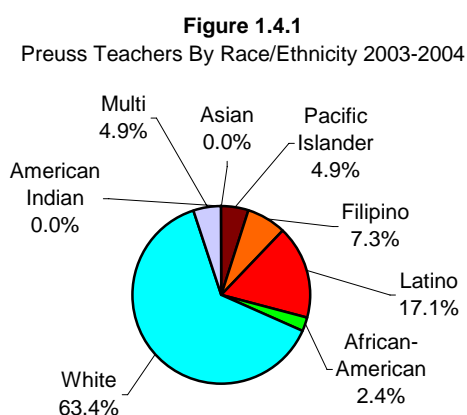


TABLE 1.4.2		
TEACHER DEMOGRAPHICS 2003/2004	PREUSS SCHOOL	SAN DIEGO COUNTY <sup>3</sup>
Number of full time teachers	41	25,145
Average years of teaching Experience	6.8	12.8
Percent holding advanced Degrees	43.9	44.3
Percent fully credentialed	90.2	97.3
Percent 1 <sup>st</sup> or 2 <sup>nd</sup> year Teachers	34.1	12.3
Percent female	51.2	72.7
Percent male	48.8	27.3

*\*For the sake of consistency, information available from the California Department of Education was used in the preparation of the table and graph presented here. According to Preuss School officials, the state's data substantially understates the qualifications of teachers at the school. The school employed 35 full-time teachers during the 2003-04 academic year and those teachers were all fully credentialed. Average teaching experience was 5.82 years and 45.7% of the teachers had a master's degree or above. Of the 35 teachers, ten (28.6%) were first or second year teachers.*

**SOURCES:** Data on teacher figures are available at the California Department of Education Web site at <http://data1.cde.ca.gov/dataquest/>. Additional information was furnished by the Preuss School

<sup>3</sup> Figures for San Diego County include all teachers in K-12.

# Academic Performance Index (API)

## WHAT IS BEING MEASURED?

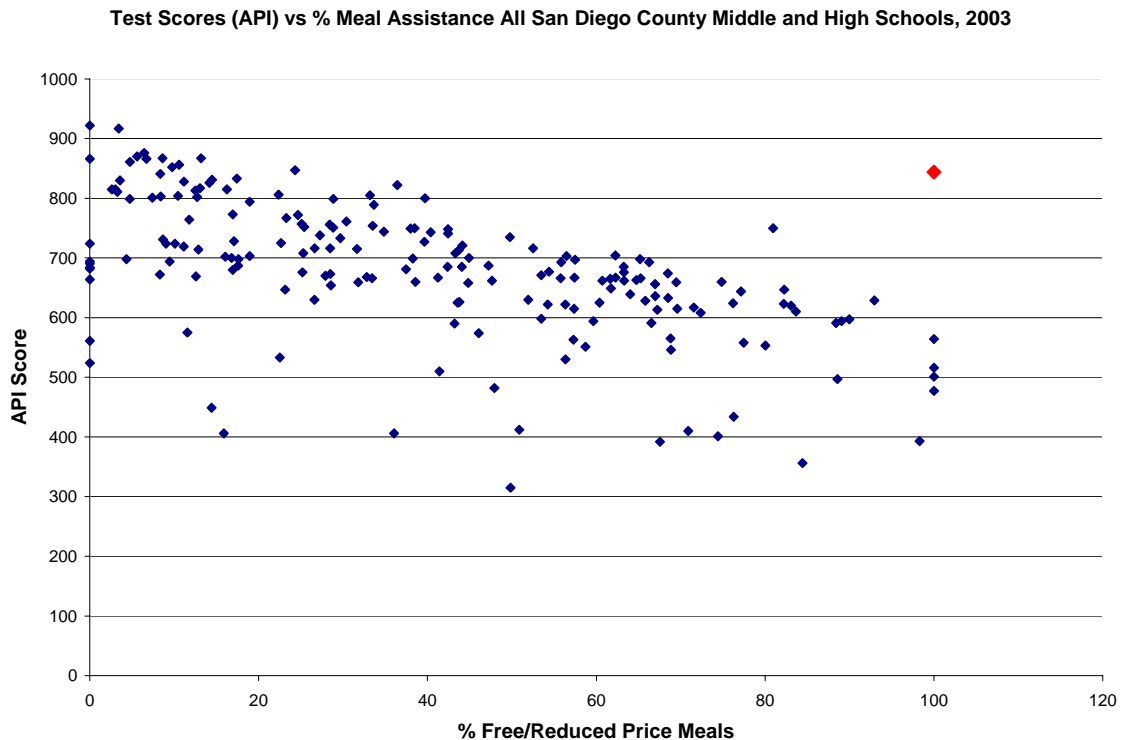
The Academic Performance Index (API) is the overall measure of student achievement for a school calculated by the California Department of Education. It incorporates data from different measures, such as student performance on standardized tests and results from the California High School Exit Examination to produce a base score for each school in the state. In theory, a school's API can range between 200 and 1000 and the goal is for every school to reach a score of 800 or higher. Below, we graph Base 2004 API scores for every middle and high school in the San Diego County against the percentage of students at the school who are eligible for free/reduced-price meals.

## NOTABLE FACTS:

- In 2003-2004, Preuss had the highest API score in San Diego County for schools with greater than 80% eligibility for meal assistance.

Figure 1.5.1 shows the relationship between API and the percent of students receiving meal assistance. Schools with a high percentage of students eligible for meal assistance tend to have lower API's than schools with students from more affluent households. The Preuss School (the red diamond in the scatter graph) does not follow this trend: it has one of the highest API's in the county and is one of only a few schools to have more than 95% of students eligible for meal assistance. Countywide 32 schools (9 high schools and 23 middle schools) have reached the state target of 800 or higher on the API. Of these schools, only 3 serve student populations with more than 25% eligible for meal assistance, and only the Preuss School serves a population with 50% or more eligible for meal assistance.

**Figure 1.5.1**



**SOURCES:** California Department of Education at <http://api.cde.ca.gov/datafiles.html> and <http://www.cde.ca.gov/demographics/files/afdc.htm> were the sources for figure 1.5.1

## Part 2: Preuss School Students' Achievement

### Standardized Test Results: English-Language Arts

#### WHAT IS BEING MEASURED?

This section discusses student achievement on the California Standards Test (CST), comprised of a series of tests, aligned to state standards and administered to students in Grades 2-11. All students are tested in English Language Arts (ELA) and subtests taken in Mathematics, History/Social Science, and Science are determined by a students' grade level and courses taken.

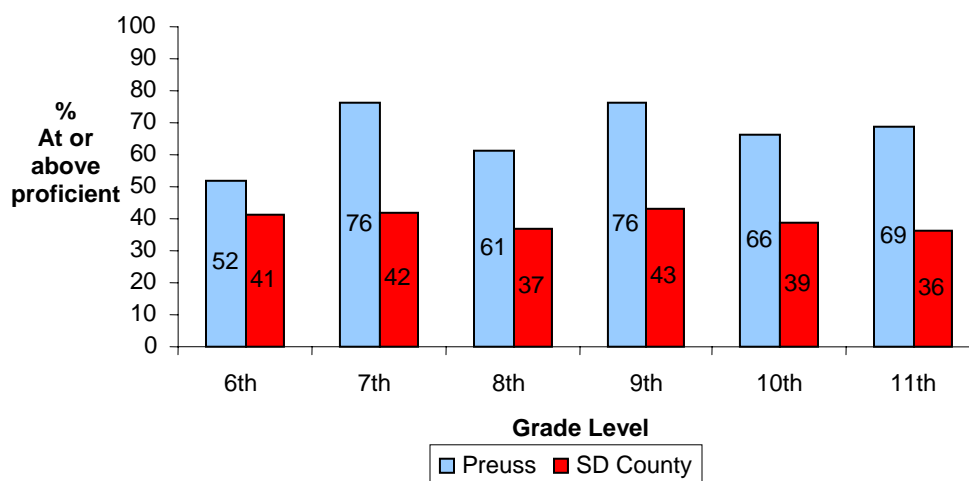
#### NOTABLE FACTS

- At all grade levels, a higher proportion of Preuss students took the CST English Language Arts test than S.D. County students.
- At all grade levels, a higher proportion of Preuss students scored at or above the 50<sup>th</sup> percentile on the CST ELA test than S.D. County students.
- Greater than 75% of all Preuss students scored at or above the 50<sup>th</sup> percentile on the CAT/6 test on Reading.

In 2003/2004 all students at all grade levels at the Preuss School took the CST-ELA examination. San Diego County had lower participation rates during the same academic year, with participation decreasing as the grade levels increased: 98.6% in 6<sup>th</sup> grade, 98.5% in 7<sup>th</sup> grade, 98.1% in 8<sup>th</sup> grade, 96.7% in 9<sup>th</sup> grade, 95.6 in 10<sup>th</sup> grade and 93.7% in 11<sup>th</sup> grade

The Preuss School had a higher proportion of students scoring at or above the proficient level on the CST in each grade level for 2003-2004. Performance on the CAT/6 and the CST cannot be directly compared because the tests have different structures, difficulty levels, and content emphasis. However, CAT/6 reading performance was similar to that seen on the CST; a high proportion of Preuss students scored at or above the 50<sup>th</sup> percentile. Specifically

**Figure 2.1.1**  
Percent of Students, by Grade Level  
Scoring at or Above Proficient  
CST – ELA 2003/2004



## Standardized Test Results: English-Language Arts, by Ethnicity

### WHAT IS BEING MEASURED?

The CAT/6 reading exams are taken by all students in grades 2-11. Here we disaggregate performance by Race/Ethnicity and grade level. All students, including those designated as English Learners and those enrolled in special education programs are required to take the CAT/6 reading exam. Parents/guardians can request, in writing, that their child be excused from testing. Consistent with California Department of Education policy regarding the confidentiality of student records, we do not report data for groups where the number of students is less than ten.

### NOTABLE FACTS

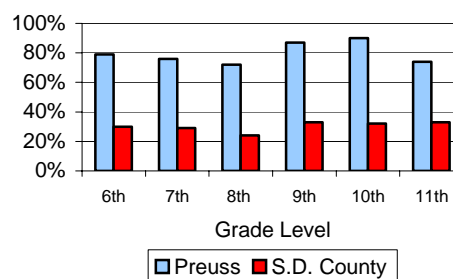
- Preuss School students outperformed the county averages in reading, as measured by the proportion of students at or above the 50<sup>th</sup> percentile.
- Greater than 80% of grade 8-11 Asian students scored at or above the 50<sup>th</sup> percentile in reading Across racial and ethnic groups,

The differences are particularly dramatic for Preuss Latino and African-American students, who earned scores that were at or above the 50<sup>th</sup> percentile at a high rate relative to the County of San Diego (Figures 2.2.1 and 2.2.2.).

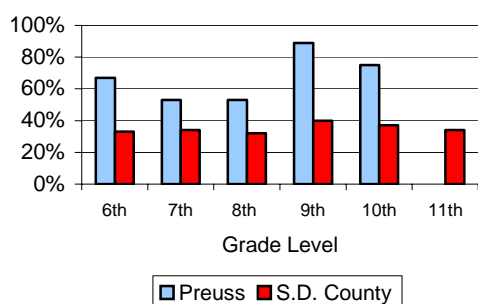
Across grade levels, the proportion of Asian students (Figure 10.3) performing at or above the 50<sup>th</sup> Percentile was greater at the Preuss School than in the county. In grades 8 through 11, the proportion ranged from 87% to 95%.

The Preuss School tested all 684 students enrolled during the administration of the 2003-04 CAT/6. Because of this high test taking rate, the demographic characteristics of the school and of test takers was virtually identical.

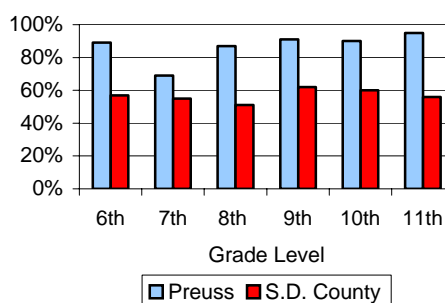
**Figure 2.2.1**  
Latino Students  
Scoring at or Above the 50th Percentile  
CAT/6 Reading 2003-2004



**Figure 2.2.2**  
African-American Students  
Scoring at or Above the 50th Percentile  
CAT/6 Reading 2003-2004



**Figure 2.2.3**  
Asian Students  
Scoring at or Above the 50th Percentile  
CAT/6 Reading 2003-2004



# Standardized Test Results: Mathematics

## WHAT IS BEING MEASURED?

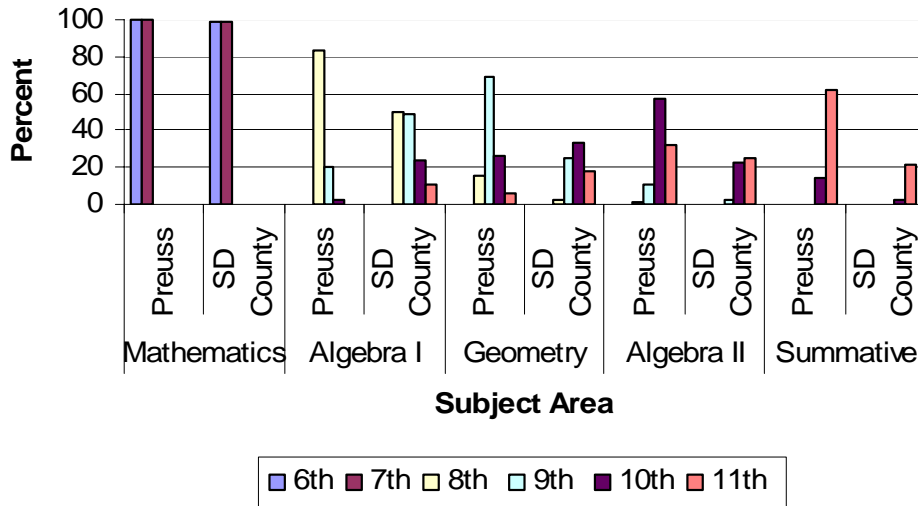
Standardized mathematics exams are taken every school year by students in grades 2-11. The CST subject test that students take for mathematics is determined by the course in which students are enrolled or the course that students have completed during the year of testing. Students enrolled in courses that are more advanced than Algebra II or who are not enrolled in any mathematics courses take the Summative H.S. Math Subject test.

## NOTABLE FACTS:

- In 2003/2004, Preuss students took more advanced subject tests at an earlier grade level relative to San Diego County students). For example, 69.4% of Preuss students were taking the Geometry subtest as 9<sup>th</sup> grade students compared to 25.4% of 9<sup>th</sup> graders in San Diego County.

The CST is best understood by looking at the proportion of students taking a Mathematics subtest at a particular grade level. Figure 2.3.1 provides the percent of students taking each of the subtests in grades 6 through 11. Preuss students are taking Algebra I and Geometry much earlier than students in the greater San Diego County region; also of note is the proportion of students taking the Summative mathematics examination in the 11<sup>th</sup> grade.

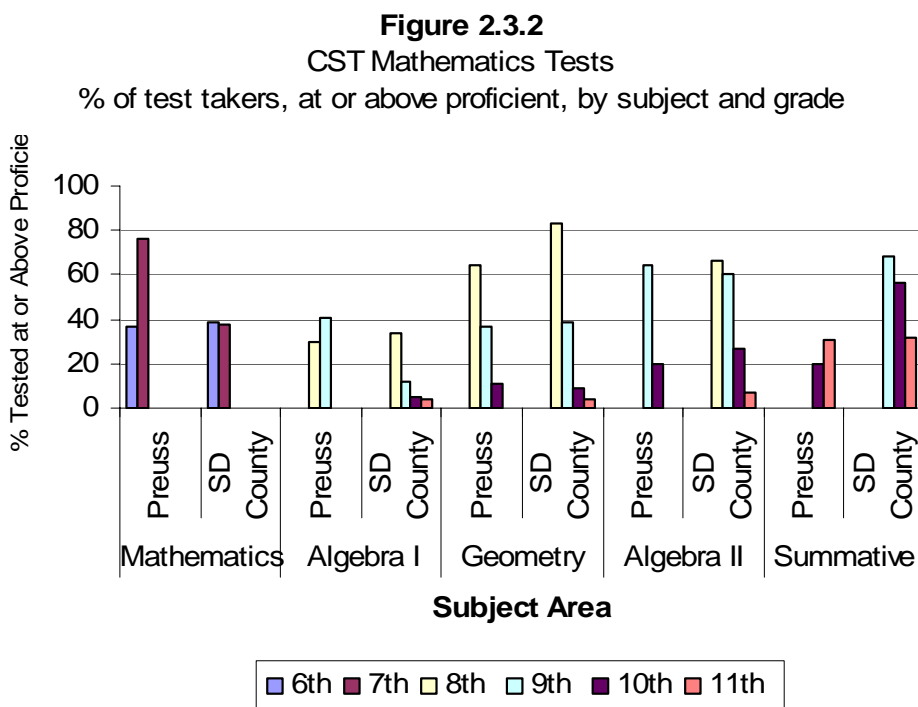
**Figure 2.3.1**  
CST Mathematics Tests  
% of students taking each subject area, by grade



## Standardized Test Results: Mathematics (continued)

Figure 2.3.2 provides information on the proportion of test takers who scored well enough on a subtest to be considered “Advanced” or “Proficient” in that specific area of Mathematics. We provide data for both the proportion taking an examination and those meeting proficiency standards because interpretation can be somewhat confusing.

An example will make this clear. If we look at the percent of 9<sup>th</sup> grade students taking the Geometry examination in Figure 2.3.1 it’s clear a much higher proportion of Preuss students are attempting this course (69.4% Preuss and 25.4% San Diego County) but, looking at Figure 2.3.2 the proportion of students scoring proficient suggests that students in San Diego County are performing better than Preuss students, albeit by a slim margin, 39% to 37%. Which is correct and why? Arguably the best answer is that as courses become more advanced, students are “self-selecting” into courses appropriate to their level of preparation. A high proportion meeting proficiency standards is not particularly meaningful if the proportion attempting the course is small and self-selected.



NOTE: The graphs do not present data for the Integrative Math 1, 2, and 3 subject tests because no Preuss students took them. Also, less than 1% of San Diego County students took them at each grade level, with the exception of 11<sup>th</sup> graders, of which 3.9% took Integrative Math 1.

# Standardized Test Results: Mathematics, by Ethnicity

## WHAT IS BEING MEASURED?

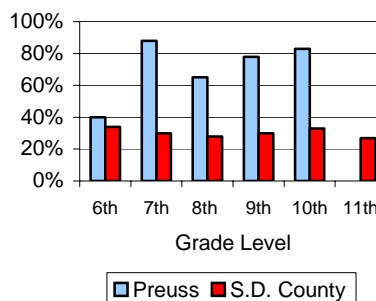
In 2004, students enrolled in grades 2-11 were required to take the CAT/6 mathematics test during the spring semester. The results of that test, by ethnicity, are reported here. Results from the CAT/6 and the CST results cannot be directly compared due to differences in structure, difficulty and content emphasis. Consistent with California Department of Education policy regarding the confidentiality of student records, we do not report data for years or groups where the number of students is less than ten\*.

## NOTABLE FACTS

- A higher proportion of Latino, African American and Asian students scored at or above the 50<sup>th</sup> percentile in Mathematics compared to San Diego County.
- More than 80% of Asian students at each grade level scored above the 50<sup>th</sup> percentile in 2004.

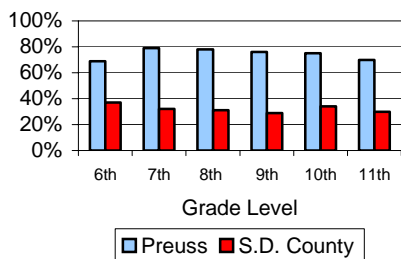
Preuss students performed well on the CAT/6 mathematics test, relative to students in San Diego County. Latino and African American students at Preuss scored above the 50<sup>th</sup> percentile at a high rate when compared to students in the county. Particularly impressive were the 7<sup>th</sup> through 10<sup>th</sup> grade Latino students, and the 7<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> grade African American students, of which more than 75% scored above the 50<sup>th</sup> percentile. (Figures 12.1 and 12.2)

**Figure 2.4.1**  
African American Students  
Scoring at or Above the 50<sup>th</sup> Percentile  
CAT/6 Mathematics 2003-2004

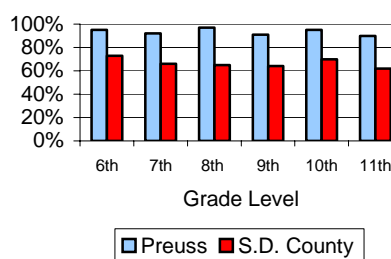


Asian students (Figure 12.3) at Preuss did well on this exam. At each grade level, more than 80% of Asian students scored above the 50<sup>th</sup> percentile.

**Figure 2.4.2**  
Latino Students  
Scoring at or Above the 50<sup>th</sup> Percentile  
CAT/6 Mathematics 2003-2004



**Figure 2.4.3**  
Asian Students  
Scoring at or Above the 50<sup>th</sup> Percentile  
CAT/6 Mathematics 2003-2004



\*Figures showing the performance of students in the White, Filipino, and Pacific Islander categories were not included due to the small number of students in these groups. This was also the case for African American students in the 11<sup>th</sup> grade.



## High School Exit Exam Results (CAHSEE)

### WHAT IS BEING MEASURED?

“State law, enacted in 1999, authorized the development of the California High School Exit Examination (CAHSEE), which students in California public schools would have to pass to earn a high school diploma ...beginning in the 2005-2006 school year, all students are required to pass the CAHSEE to earn a high school diploma.” (*Reporting Individual Student Results for the 2003-04 School Year*, California Department of Education, March 2004)

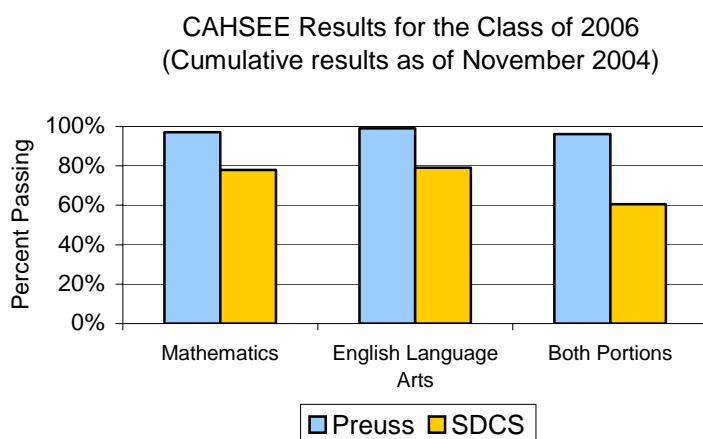
The CAHSEE contains two subtests, English Language Arts and Mathematics. The CAHSEE tests students to ensure that graduates demonstrate proficiency in the state content standards for reading, writing, and mathematics. Presented are the cumulative pass rates for the Preuss School and San Diego City Schools (SDCS) class 2006, the first class required to pass the CAHSEE in order to graduate, through November of 2004. Excluded from the comparison are San Diego County and State pass rates. There are two reasons for this exclusion. The first is that the CDE provides information on the individual tests, but does not report the percentage of students passing both sections of the exam in a given year. The second is that the data does not account for student test taking across years. This is problematic because students can (and do) take and pass the separate portions of the CASHEE in different reporting years. The graph below illustrates the percent of Preuss and San Diego City Schools students who by November, 2004 had passed the CAHSEE. Students, however, have until their last year of high school to pass both portions of the CAHSEE to graduate. Therefore, data presented in the graph below will change by the time students from the class of 2006 graduate.

### NOTABLE FACTS:

- 96% the Preuss class of 2006 had passed both portions of the test by November 2004.

Figure 2.5.1 reflects the cumulative pass rate (through November of 2004) for the class of 2006 in San Diego City Schools and at the Preuss School. At the time these figures were compiled, the Preuss class of 2006 contained 109 students, 104 of whom took the CAHSEE. Of those students, 101 (97%) passed the mathematics portion of the test and 103 (99%) passed the ELA section. Overall, the class of 2006 had 100 students (96%) passing both sections of the CAHSEE, 4 (4%) who did not pass, and 5 who had not taken the examination.

**Figure 2.5.1**



**SOURCES:** Data on CAHSEE results are available at the California Department of education Web site at <http://data1.cde.ca.gov/dataquest/>. The cumulative information for SDCS was kindly provided by San Diego City Schools Research and Reporting Department.

# Advanced Placement Examinations

## WHAT IS BEING MEASURED?

Advanced placement courses are college level courses offered in nineteen subject areas at high schools in the State of California. The Advanced Placement (AP) Examinations are taken each year in May and the results of these tests determine if a student demonstrates sufficient mastery to earn both the additional grade point and college credit associated with an AP course. The examinations are scored on a five-point scale with a score of three required to pass the examination. The exam taking and pass rates of Preuss students are presented here, but comparisons to the state, county, and SDCS are not made due to an incomparability of the data available through the California Department of Education (CDE). Comparisons could not be made because the CDE presents data for 12<sup>th</sup> grade and combined 11<sup>th</sup> & 12<sup>th</sup> grade enrollments, and the Preuss School did not have a 12<sup>th</sup> grade in the 2002-03 reporting cycle.

## NOTABLE FACTS:

- The Preuss School had 32 students named AP Scholars in 2002-2003. These students passed at least 3 AP examinations with a score of 3 or more.

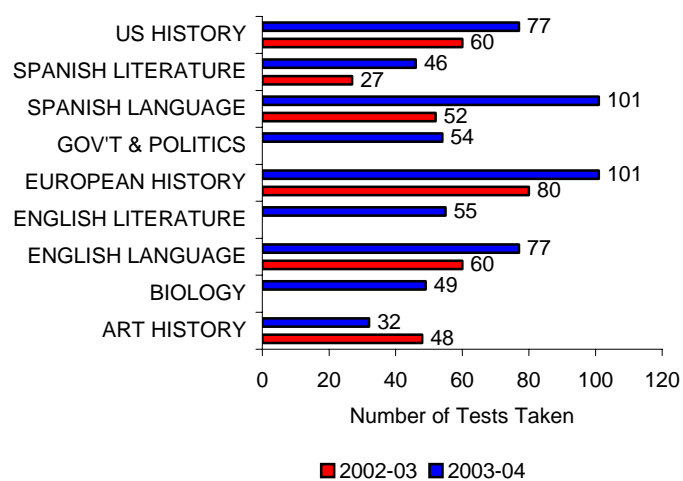
Figure 2.6.1 shows the number of AP exams, by subject area, taken by Preuss students in 2002-2003 and 2003-2004. Figure 2.6.2 provides information on the percentage of those exams receiving a passing score of three or better.

During the 2003/04 school year, there were 596 AP exams taken by students in the ninth through eleventh grades in twelve subject areas. Only those subject areas with ten or more test takers are reported. Of the 596 tests, 34% (201) received a score of three or better.

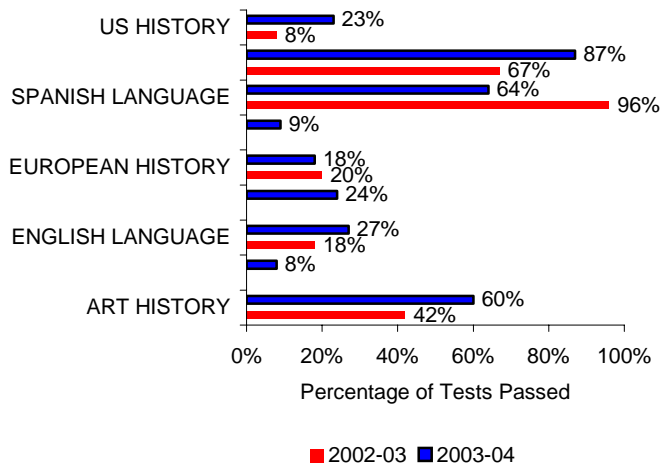
In 2002/2003 there were 327 examinations taken during the academic year by 9<sup>th</sup> through 11<sup>th</sup> grade students. Examinations were taken in six subject areas: Art History, English Language, European History, Spanish Language, Spanish Literature, and US History. Of the 327 exams, 37% (120) received a score of 3 or better.

Thirty-two Preuss students were named AP Scholars in 2003-04: 21 AP Scholars (3 tests with a score of 3 or better), 8 AP Scholars with Honors (4 tests with a score of 3 or better), and 3 AP Scholars with Distinction (5 tests with a score of 3 or better).

**Figure 2.6.1**  
Preuss AP Exams Taken, by Subject Area



**Figure 2.6.2**  
Percentage of Students Receiving a 3 or Better



**Figure 14.1**

**SOURCES:** The data for the Preuss School students were obtained from the Preuss School using records provided by College Board. Further information can be obtained at the California Department of Education Web site at <http://data1.cde.ca.gov/dataquest/>.

# A-G Completion

## WHAT IS BEING MEASURED?

Admission to the California State University and University of California systems (as well as many private institutions) is predicated on several factors, one of which is the accumulation of a specified number of semester units in seven academic areas with a minimum grade of “C”. Collectively these courses are known as the “A-G” requirement. Here we present information on the percentage of graduates completing the A-G requirement. The Preuss School now has two graduating classes (the classes of 2004 and 2005) and data on the 2005 A-G completion rate for the State, San Diego County, and San Diego City Schools will not be available from the CDE until the fall of 2006. For this reason we include information on previous graduating classes in San Diego County, providing a frame of reference (rather than a basis for direct comparison) for the Preuss School completion rates.

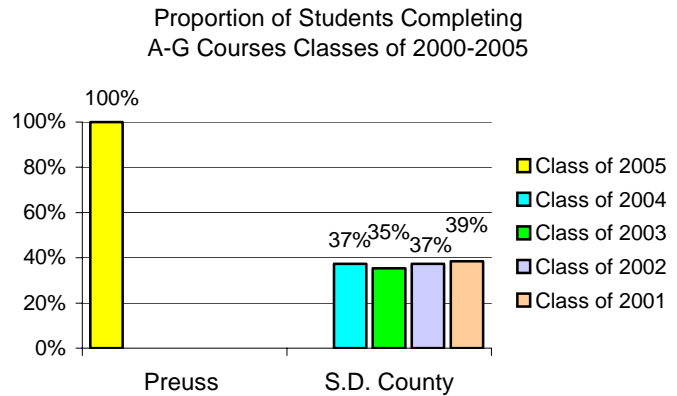
## NOTABLE FACTS:

- Every member of the Preuss graduating class of 2005 has completed the A-G requirement.

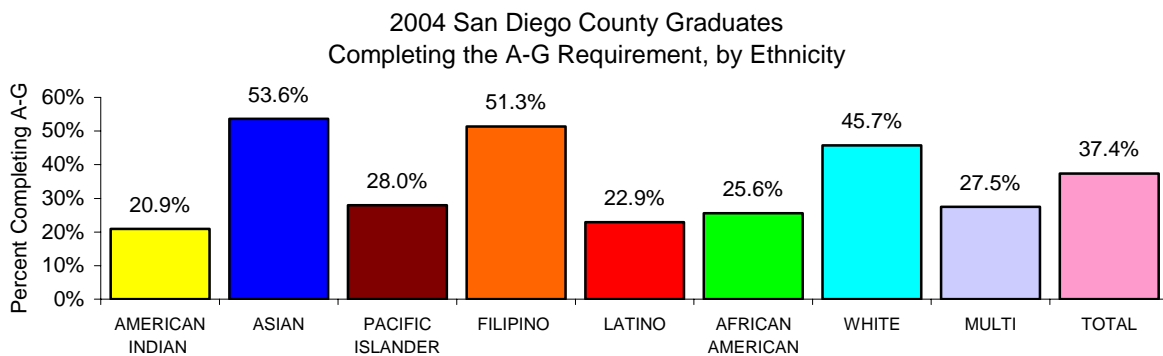
The second graduating class at Preuss had an A-G completion rate of 100% and the completion rate for the graduating classes of 2001-2004 in San Diego County ranged from a low of 35% to a high of 39% (Figure 15.1). The 37.4% completion rate for San Diego County in 2004 is the average completion rate across the different racial and ethnic categories. Different ethnic groups have historically performed better or worse than that average. Figure 15.2 shows the San Diego County completion rate for each of the 8-racial/ethnic categories used by the CDE. The highest completion rate was for Asian students at 53.6% and the lowest was for American Indian students at 20.9%

The Preuss graduating class of 2005 was ethnically diverse with 55% Latino, 27% Asian, 13% African-American, 4% White, and 1% Filipino students. Using figure 15.2 as an historical reference, Preuss students are clearly doing well, especially with students from groups with traditionally low completion rates.

**Figure 2.7.1**



**Figure 2.7.2**



**SOURCES:** Data regarding “A-G” requirements can be obtained at the California Department of Education Web site at <http://data1.cde.ca.gov/dataquest/>. Information regarding Preuss students was provided by the Preuss School.

# SAT I College Entrance Examination

## WHAT IS BEING MEASURED?

The SAT I is a college entrance examination designed to measure the verbal and mathematical reasoning skills of applicants. The exam has a maximum score of 1600, with the verbal and mathematics subsections each worth a maximum of 800 points. Results of the test, along with other indicators (e.g., grade point average) are used to make admission decisions in both public and private colleges and universities.

## NOTABLE FACTS:

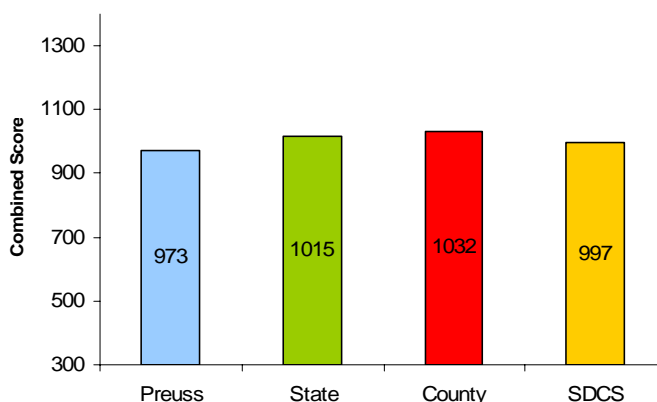
- Only one member of the Preuss Class of 2004 failed to take the SAT I at least once. The overall rate was at least twice that found in California (35%), San Diego County (40%), and San Diego City Schools (SDCS) (50%).

Only 1 student in the 2004 graduating class failed to take the SAT I. The average combined score of the 2004 graduating class at Preuss (973) was similar to the average score recorded in California (1015), San Diego County (1032) and San Diego City Schools (997) (Figure 16.1 and Figure 16.2).

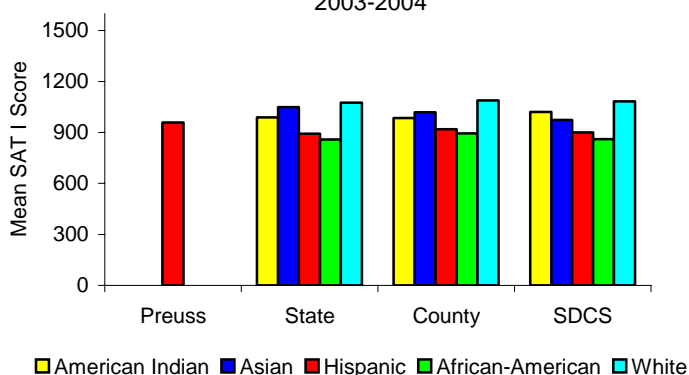
While it is important to report the performance of all Preuss SAT I test takers, this comparison tends to underestimate the actual performance of Preuss students. Almost all, 54 of the 55 (98%) Preuss students took the SAT I – from the best performing to the lowest achieving student. In California, 37% of all students took the SAT I, and it is likely that the majority of those taking the examination came from the top performing half of students.

For this reason, a more appropriate comparison looks at the top half of Preuss test takers and compares their performance against the state, county, and SDCS averages. Important differences begin to emerge with this comparison. The top half of Preuss test takers scored a combined SAT I of 1122 compared to the statewide average of 1012, county average of 1028, and SDCS average of 1003.

**Figure 2.8.1**  
SAT-I Scores - All Test Takers, by Segment



**Figure 2.8.2**  
SAT I Scores by Ethnicity - All Test Takers  
2003-2004



**SOURCES:** Data for Preuss School Students was obtained from the Preuss School using records provided by Educational Testing Service and the College Board. State, county and San Diego Unified (SDCS) test taking rates were obtained from the California Department of Education Web site at <http://data1.cde.ca.gov/dataquest/>.

# SAT II College Entrance Examination

## WHAT IS BEING MEASURED?

Admission to the University of California (UC) requires that students take three Scholastic Assessment Test II (SAT II) subject tests including Writing, Mathematics Level 1 or Level 2, and one test in one of the following areas: English literature, foreign language, science or social studies. Student scores on the SAT II are used along with the SAT I, high school grade point average, A-G completion and other factors to determine eligibility and to make admission decisions. Here we report the scores of the Preuss 2004 graduates admitted to the University of California and the system wide average performance of students admitted to the University of California for the fall of 2004.

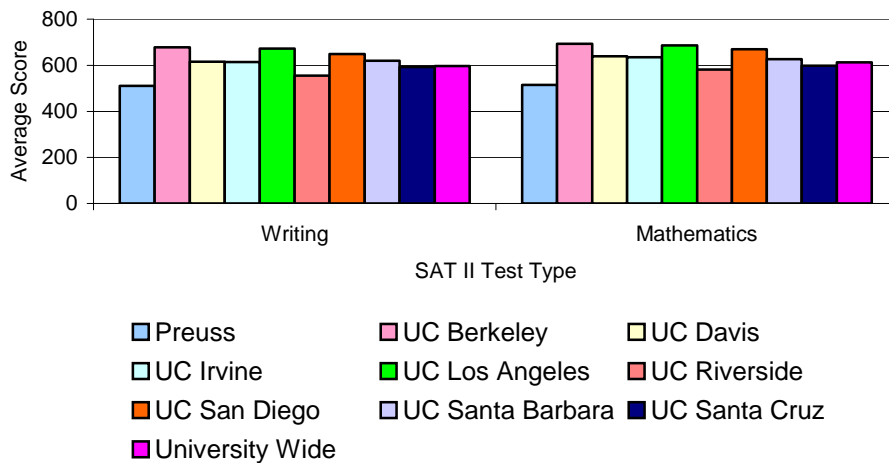
## NOTABLE FACTS:

- Preuss admits to the University of California had lower average SAT II scores when compared to all UC admits.

For Preuss graduates admitted to the University of California, the average score on the SAT II writing examination was 529 and the average Mathematics score was 538.

Figure 2.9.1 compares the average score of Preuss students admitted to the University of California to both the campus averages and the UC system wide average.

**Figure 2.9.1**  
Average SAT II Scores - University of California  
Admitted Students - Fall 2004



**SOURCES:** We thank colleagues from the University of California, San Diego Student Research and Information group for aggregated SAT II data on Preuss students. The campus and system wide SAT II scores for accepted students were obtained from the University of California, Office of the President Web site at [www.ucop.edu/news/studstaff.html](http://www.ucop.edu/news/studstaff.html)

## College Admission and Acceptance

### WHAT IS BEING MEASURED?

This section of the report provides information on both University of California admissions and the “statement of intent to register” (SIR) for students in the 2005 graduating class. Completion of the SIR represents a commitment on the part of a student to matriculate at a particular college or university. Data on Preuss graduate “intent to register” was based on actual SIR’s completed through May 1, 2005.

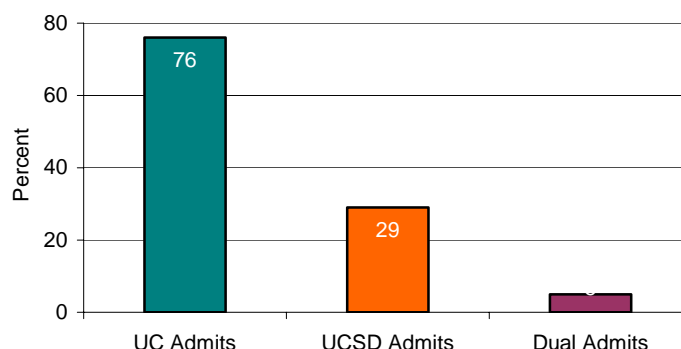
### NOTABLE FACTS:

- 100% of the 2005 graduating class will continue their education at 2 or 4-year institutions.
- 87% of the 2005 graduating class intended to register in a 4-year college or university in Fall 2005.

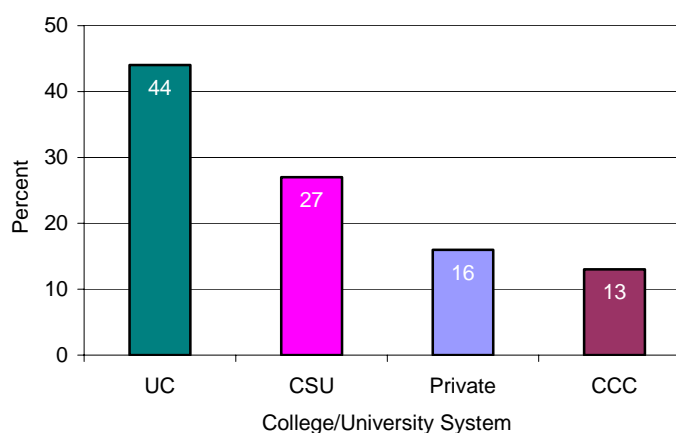
Test scores and grade point averages are important, but they are not the ultimate goal of the Preuss School. Acceptance to, matriculation, and success in college are the real goals of the school. Of the 74 (from a graduating class of 75) students who applied to the University of California, 76% were admitted to one (or more) of the campuses and 29% were admitted to UCSD. Of the remaining students, fourteen (19%) were offered “Dual Admission or Guaranteed Transfer” in which students enter the University of California as juniors after completing two years of community college coursework (Figure 2.10.1).

Acceptance information is useful, but the important question is “Where do Preuss students attend college?” This question is partially answered by looking at the “Student Intent to Register” (SIR). These forms are completed by students and represent a formal acceptance of an offer to attend made by a college or university. The staff at the Preuss School collected information from each student in the graduating class regarding their final college selection and submission of the SIR.

**Figure 2.10.1**  
University of California Admissions  
Preuss Class of 2005



**Figure 2.10.2**  
Preuss 2005 Graduating Class  
% Completing Student Intent to Register



**SOURCES:** We are grateful to the UCSD admissions office and the Preuss School for providing the aggregated information needed to produce this section of the report.

## Part 3: Preuss School and “Comparison Group” Student Achievement<sup>4</sup>

### Overview

In the spring of 1999, the Preuss School accepted applications to fill spaces in grades 6, 7 and 8 for its first school year. Admission was restricted to those meeting demographic criteria (low income & parental education level) and required parents and students to complete an application that included academic records, teacher recommendations, and personal statements. Several readers scored each completed application and identified applicants meeting the demographic criteria and demonstrating academic potential<sup>5</sup>. Applicants passing this initial screening were accepted to the Preuss School or, if the number of applicants exceeded the available spaces (as was the case for the 6<sup>th</sup> and 7<sup>th</sup> grades), students were entered into a lottery and “luck of the draw” determined which students were offered admission.

Because the lottery splits the applicant pool into two demographically matched groups, accepted and wait-listed students,<sup>6</sup> we are able to follow the progress of students over time and determine if (and how) the groups are different on several academic indicators<sup>7</sup>.

In this report we focus on the performance of the students in the initial lottery groups from the 1999/2000 academic year because these students have the longest academic records, representing the graduating Classes of 2005 and 2006.<sup>8</sup> For these two Classes we include analyses of standardized test scores, grade point averages (GPA's) and progress toward completion of the “A-G requirements,” a prescribed group of courses required for admission to the CSU/UC systems. Because lotteries are used to determine admission whenever the number of qualified applicants exceeds the number of spaces available, we also include analyses of standardized test performance for graduating classes through the year 2010. Each group is identified by its year of graduation, for example, students entering as 6<sup>th</sup> graders in 2003/2004 are identified as the “Class of 2010,” as they are expected to graduate in the Spring of that year.

We examine the academic performance of the various groups through the end of the 2003/2004 school year. This is because we won't receive complete information for the 2004/2005 school year from the school districts supporting this work until the end of 2005. For this reason we cannot include several important comparisons, such as the final A-G completion rate and the grade point averages of the graduating class of 2005. These analyses will be included as part of next year's report.

### Analysis Issues

We examined several issues to ensure that the analyses presented were reasonable and that treatment of data was transparent. In particular we were concerned with the following three issues:

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4 We wish to acknowledge the generous assistance of Dr. Julian Betts for his thought provoking input and careful review of this report.

5 It is our understanding, from discussions with personnel at the Preuss School, that the criteria for “academic potential” was broad. Applicants were not required to demonstrate high academic achievement, only potential, defined as performance at or above the 50th percentile on one subtest of the Stanford 9 (or the current State mandated standardized test). Students lacking a single subtest above the 50th percentile were also admitted if they had strong letters of support from teachers or personal statements that indicated academic potential.

6 Students who are not admitted via the lottery are “wait-listed” at the Preuss School and are offered admission, in subsequent years, as space becomes available and in a priority based on their “lottery number” from the initial draw.

7 San Diego City Schools (SDCS) has generously granted access to academic data for the students in the Comparison Group, allowing us to perform the analyses presented here. Only students in the comparison group who attended one of the San Diego City Schools are included in this report.

8 We examine the performance of those students who were in continuous attendance at either the Preuss School or in San Diego City Schools from the year after the lottery through the 2003-2004 academic year.

1. Did the groups of Preuss and Comparison students start out the same? This is important because “luck of the draw” in a single lottery drawing could result in an uneven distribution of academic talent in the resulting groups.
2. Was there a difference in the number of students leaving the Preuss or Comparison group over time and were the students who left substantially different from those who remained? We wanted to identify situations where something other than learning and school characteristics could be influencing an analysis.
3. Does limited access to student academic records work against a fair assessment of the academic achievement of students? Our concern is that if we are unable to track the progress of a large proportion of students, especially students in the Comparison Groups, our ability to perform analyses or to reasonably interpret analyses might be compromised.

#### 1) PRE-LOTTERY STANDARDIZED TEST PERFORMANCE:

The pre-lottery performance of the Preuss and Comparison Group students is of interest because it provides a base against which subsequent performance can be measured. Ideally, random selection by lottery will split the applicant pool into Preuss and Comparison Groups with nearly the same pre-lottery performance on standardized tests. When this is the case we can have more confidence that any post-lottery group differences on standardized tests are attributable to the effect of education & environment and not pre-existing group differences. While “luck of the draw” will generally result in groups with similar starting characteristics it will occasionally result in an uneven distribution of “academic talent.” It is important that groups with an uneven “start” be identified and that any initial inequalities are reflected in the statistical analyses reported.

Table 3.1.0 provides information on which tests were used “pre-lottery” to establish baseline performance, as well as the tests taken in subsequent years, for each of the graduating classes. Two points are worth noting. The first is that there was no lottery for the Class of 2007. This is because the Preuss School was rapidly adding grade levels and expanding the size of each grade level so that all qualified applicants were admitted to the school that year. The second is that the type of standardized test administered to students has changed over time. California has, over the past several years, changed standardized tests in an attempt to improve the alignment between curriculum and test content. Because the three tests administered (SAT-9, CAT-6, and CST) have different content and test construction, scores cannot be compared across tests. These relatively rapid changes in the type of test used limit our ability to perform longitudinal analyses and for this reason, the results presented in the standardized testing sections of this report are single year comparisons.

We used standardized test scores to establish pre-lottery “equivalence” of academic performance because there are no other objective measures of academic performance consistently in use. We deliberately choose not to use academic marks as a baseline indicator because standards (and marks) vary from school to school for reasons other than academic performance and this is especially true in the elementary school grades K-6, where baseline measures are made.

In years where pre-lottery standardized test performance for Preuss and Comparison Groups is statistically indistinguishable, it is important to remember that being able to say that there was “no statistically significant difference” is not the same as saying there were no academic differences between the groups. The best claim that can be made is that available evidence does not suggest an academic difference between the groups.



**Table 3.1.0**

Class By Graduating Year	ACADEMIC YEAR & TEST TYPE					
	SAT-9				CAT-6 & CST	
	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004
2005	6	7	8	9	10	11
2006	5	6	7	8	9	10
2007	- No Lottery Held -					
2008			5	6	7	8
2009				5	6	7
2010					5	6

To determine if the pre-lottery performance of the Preuss and Comparison groups within a graduating class was similar, we compared scaled<sup>9</sup> scores from tests administered in the Spring of the application year. Figures 3.1.1 through 3.1.5 show the pre-lottery performance of Preuss and Comparison Groups on the test used in California at the time of testing.

Statistical analyses failed to detect a significant initial difference between Preuss and Comparison Group students, across subject areas, for the 2005, 2006 and 2008 graduating classes. The scores are remarkably similar and suggest that the groups are starting out on an equal academic “footing.”

A different pattern of results emerged from the analysis of test performance for the Classes of 2009 and 2010. While the point differences were small (less than 3%), the Class of 2009 had statistically significant initial group differences (identified with a \*) on Language & Mathematics subtests, with the Preuss Group having the higher scores. Students in the Class of 2010 Comparison Group scored significantly higher than Preuss Students on the CAT-6 Mathematics test, but failed to show a similar difference on the CST Mathematics test taken in the same year. These results suggest that, for the Classes of 2009 and 2010, some caution should be exercised when interpreting post-lottery differences, in these directions and subject areas.

<sup>9</sup> Scale scores are raw test scores which have been adjusted to account for content differences in versions of a standardized test. They allow for an “apples to apples” comparison of test performance. „Raw scores identify the number of items answered correctly on a test or sub-test. Raw scores are limited in their measurement precision because of differences among test items. For example, some items are more difficult than others. A scaled score takes item differences into account and is calculated to provide a more precise measure of the knowledge or skills tested. Through this calculation, an increase of one point at one place on the scale is described as being equal to a one- point increase anywhere else on the scale. Scaled scores are particularly useful for reporting changes over time,» (California Department of Education).

Figure 3.1.1

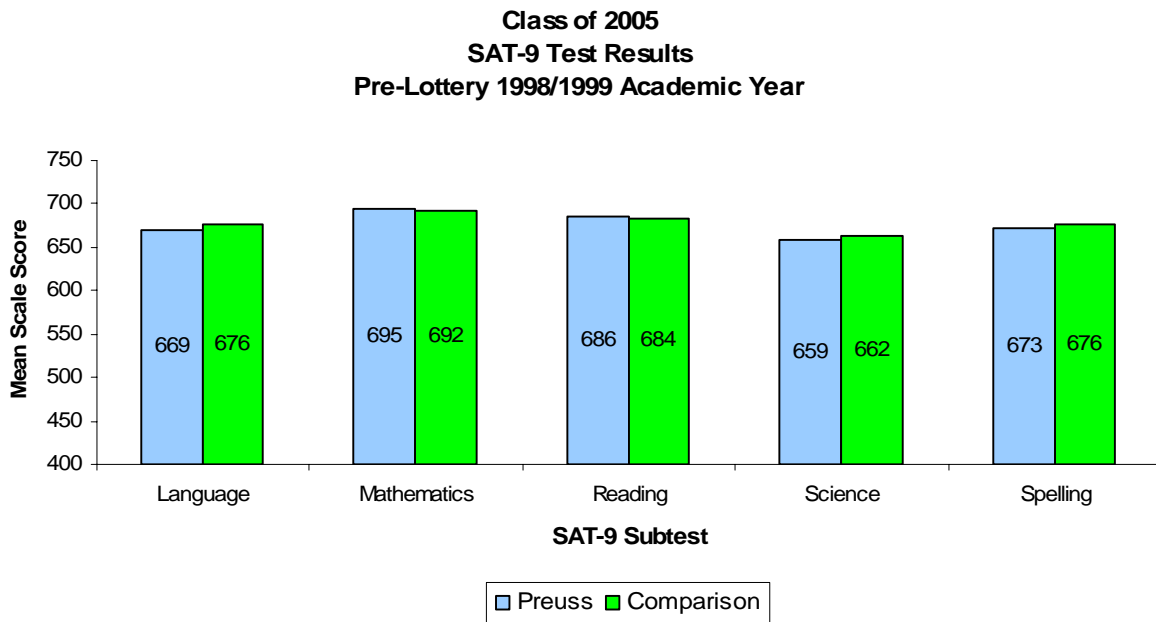


Figure 3.1.2

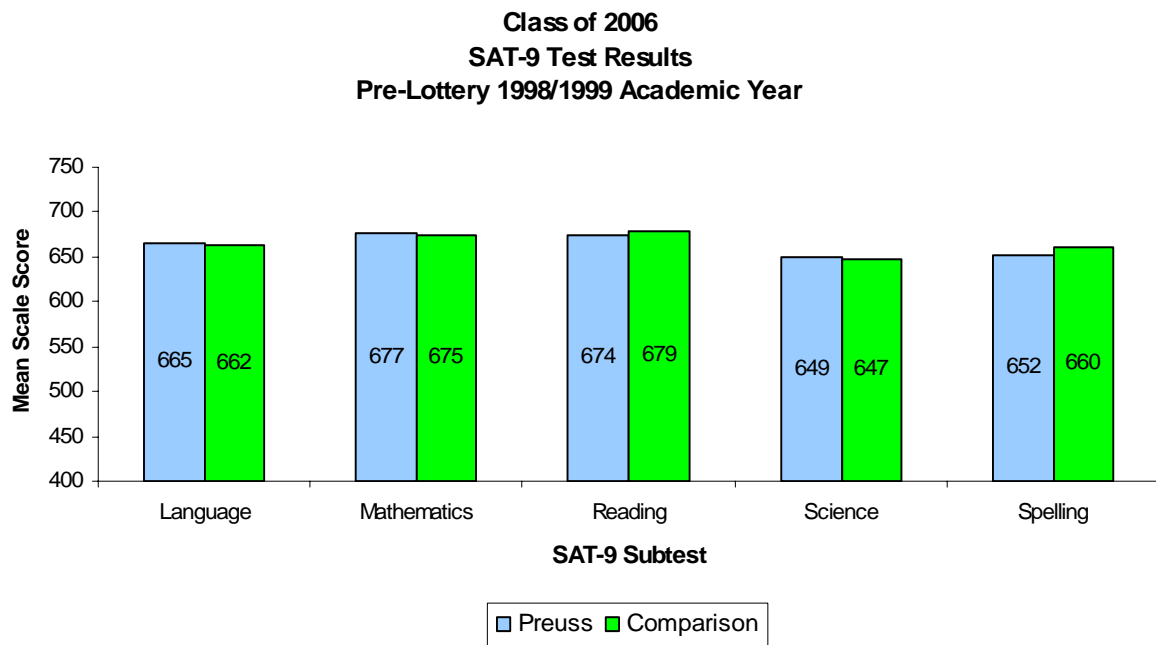


Figure 3.1.3

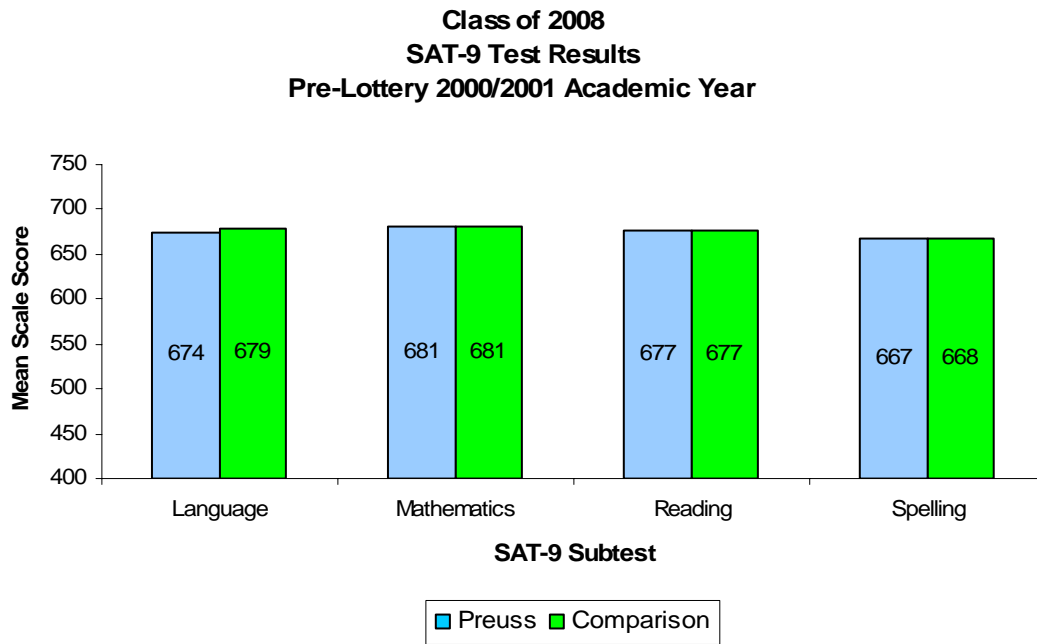


Figure 3.1.4

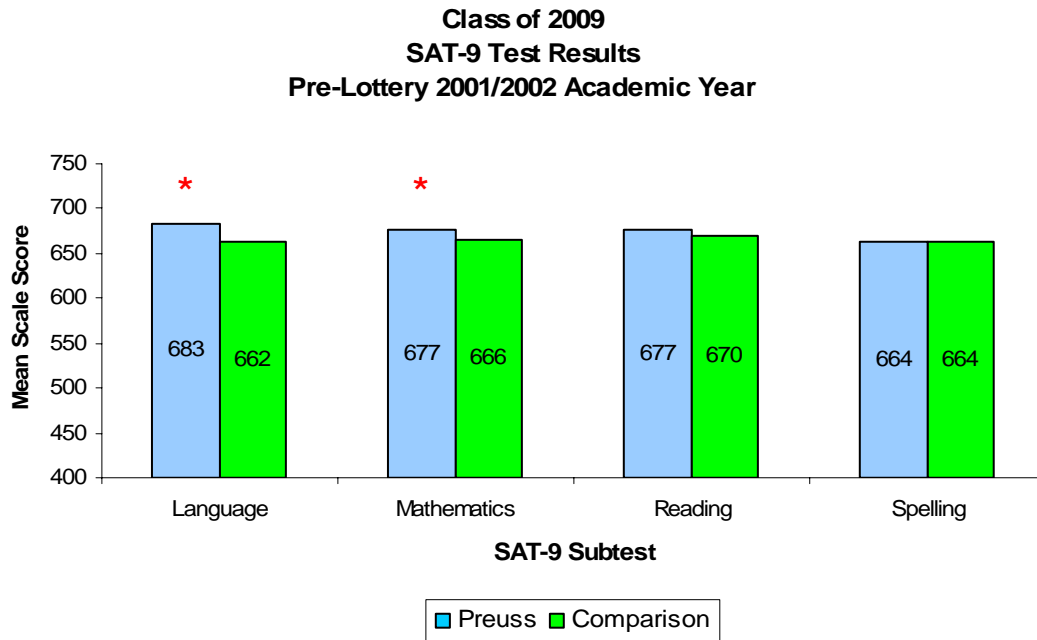


Figure 3.1.5

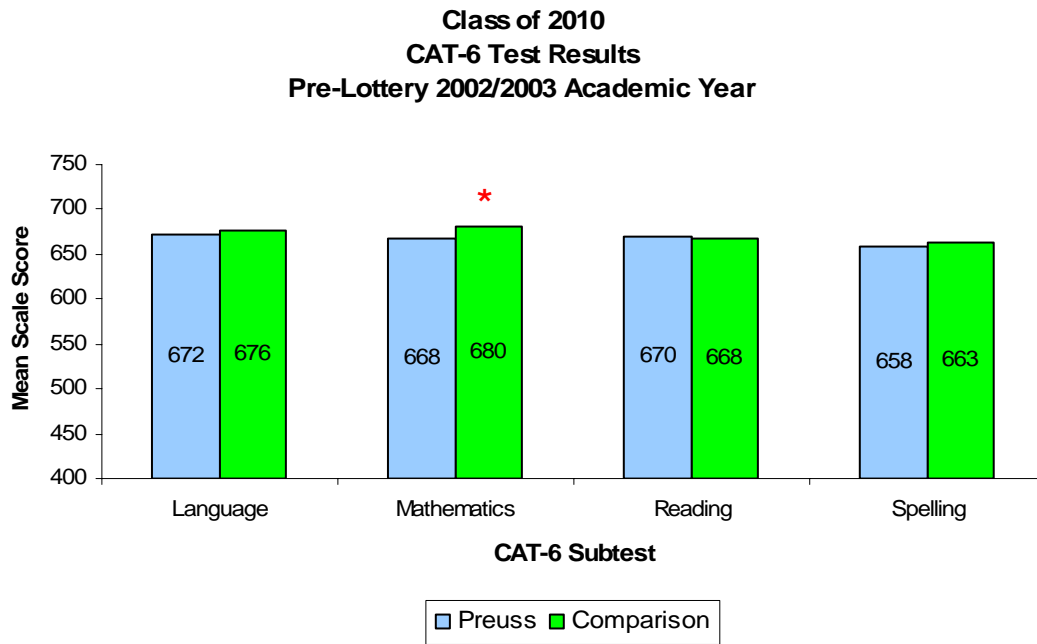
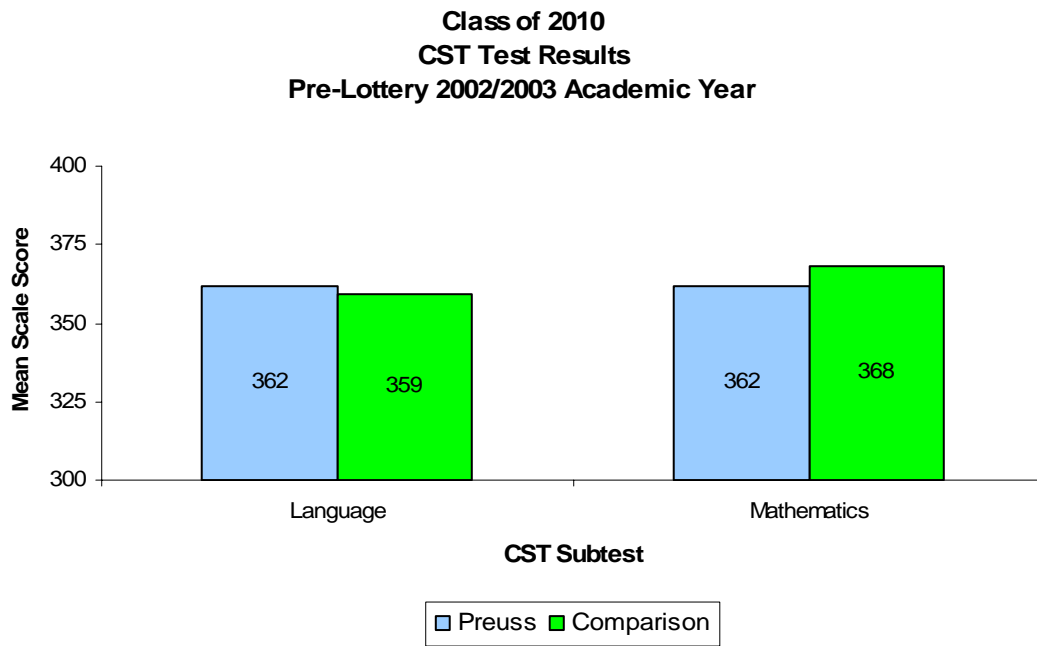


Figure 3.1.6



## 2) EFFECT OF ATTRITION:

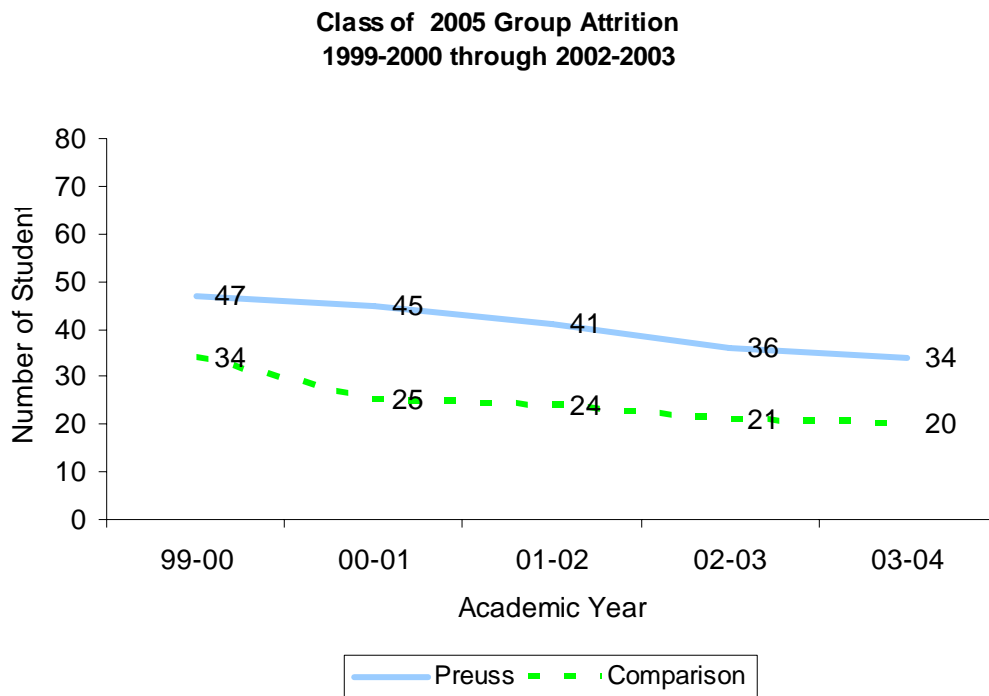
A second concern was that, with the passage of time, the Preuss and Comparison Groups might have experienced different rates of loss. While the number of students leaving is important, a larger concern is that either the Preuss or Comparison Group(s) might have had proportionally more of their best (or worse) performing students leave the group, introducing a bias in statistical analysis having nothing to do with the amount of student learning.

Figure 3.1.7 shows the initial group sizes and attrition for the Class of 2005. After five years, the proportion of original members of the Class of 2005 remaining in both the Preuss and Comparison Groups was different: Preuss had retained 72% (from 47 to 34) and the Comparison Group 59% (from 34 to 20) of their initial members.

We performed analyses to determine if students leaving a group were different from those remaining in a group using the 1998/1999 and 1999/2000 subtests of the SAT-9 (Mathematics, Reading, Spelling, Science and Language Arts) as outcome measures. The 13 students leaving the Preuss Group were not statistically different from the 34 remaining at Preuss on any subtest of the SAT-9. Two marginal<sup>10</sup> differences emerged, both in the Science subtest, with those leaving the group performing better on this subtest (1998/1999 examination,  $p = 0.085$  and 1999/2000 examination,  $p = 0.092$ ).

With one exception, no statistical or marginal differences emerged between the 14 students leaving and the 20 remaining in the Comparison Group. Students leaving the Comparison Group were significantly worse spellers when compared with the students who remained with the group (1999/2000 examination,  $p = 0.046$ ). Taking into account the differences between those leaving and remaining in the groups, it does not appear that attrition is a major source of bias and will not have a substantial impact on analyses of academic performance for the Class of 2005.

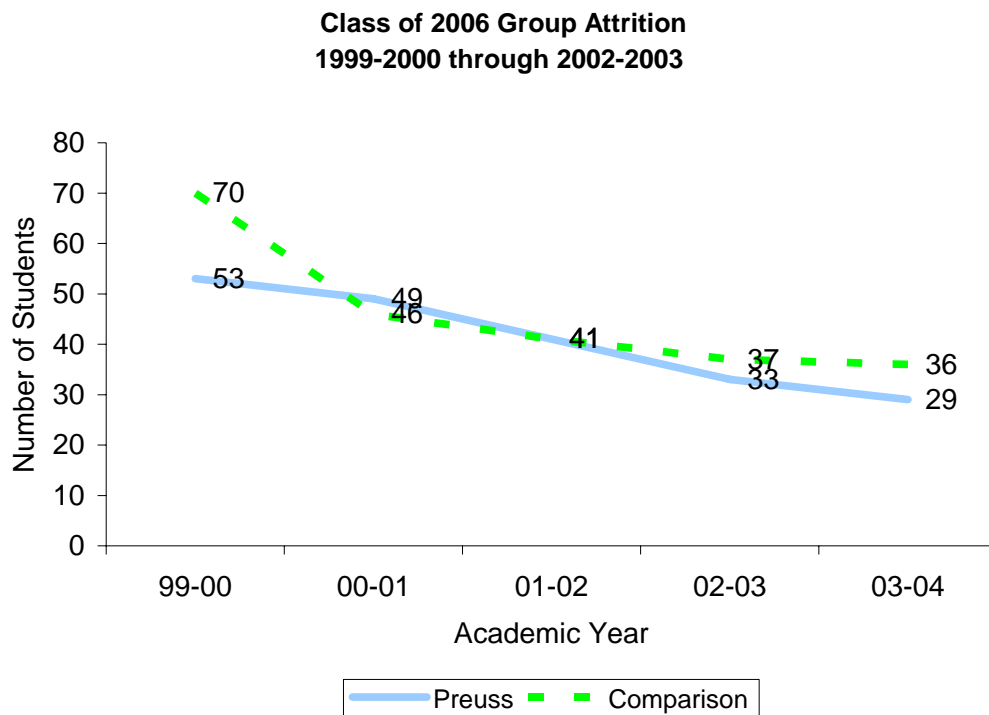
**Figure 3.1.7**



<sup>10</sup> As opposed to statistically significant – which is defined as  $p \leq 0.05$ , a value typically used in the Social Sciences and deemed sufficiently stringent to rule out a “false alarm” or saying that there is a difference between groups when the result is due to chance. Marginal significance, for the purpose of this report requires an observed  $p$  value between 0.051 and roughly 0.10. The intent is to identify those test which failed to meet a conventional threshold but are still of potential interest, especially in light of the low power associated with small sample sizes.

Figure 3.1.8 shows the initial group sizes and attrition over time for the Class of 2006. There was similar overall group attrition, with the Preuss Group retaining 55% (from 53 to 29 students) and the Comparison Group retaining 51% (from 70 to 36) of their students. While the loss in the Preuss Group appears fairly steady over time, most of the loss in the Comparison Group occurred after the first year, with the group dropping from 70 to 46 students. The expansion of the Preuss School in the 2000/2001 school year accounts for this large drop. Of the 24 students leaving the Comparison Group after the 1999/2000 school year, 20 were offered and accepted admission to the Preuss School in 2000/2001.

**Figure 3.1.8**



The 24 students leaving the Preuss Group after the 1999/2000 school year did not differ statistically from the 29 students remaining at the school on subtests of the SAT-9. Two marginal differences emerged, with those leaving the group scoring lower on the Mathematics and Science portions of the 1999/2000 SAT-9 ( $p = 0.06$  and  $p = 0.09$ , respectively).

The 34 students leaving the Comparison Group were statistically different from the 36 remaining with the group. Students leaving the group scored lower on the Language Arts ( $p < 0.01$ ) and Spelling ( $p < 0.01$ ) subtests in 1998/1999 and the Spelling ( $p < 0.01$ ) subtest in 1999/2000. In addition to these significant differences, students leaving the group were marginally lower on both the Language Arts ( $p = 0.08$ ) and Mathematics ( $p = 0.09$ ) portions of the 1999/2000 examination.

While statistical analyses suggest that both the 2006 Preuss and Comparison Groups lost members with weaker test scores, the pattern of differences is more pronounced in the Comparison Group. The net effect of the observed differences is difficult to assess, but might result in bias favoring the Comparison Group in post-lottery comparisons.

Preliminary attrition and standardized test data is available for Classes of 2008, 2009 and 2010. Because the Class of 2008 did not enter High School until the 2004/2005 school year, assessments on indicators such as A-G courses taken, grade point averages and high school exit exam completion will not be available until later in their academic careers. The Class of 2008, finishing the 8<sup>th</sup> grade in 2003/2004, has retained 79% of Preuss students (105 of 133) and 86% (31 of 36) Comparison Group students. There were no statistically significant differences in the 2001 SAT-9 scores (pre-lottery, all subtests) between the Preuss and Comparison groups. The Class of 2009, at the end of 7<sup>th</sup> grade, has retained 93% (132 of 142) of the Preuss Group (132/142) and 94% (49 of 52) of Comparison Group students. The 2009 Preuss group demonstrated higher pre-lottery scores in the Language Arts and Mathematics subtests, with the two groups indistinguishable on the remaining subtests. The Class of 2010 began with 134 members in the Preuss group and 120 in the Comparison Group. First year attrition for this Class will be reported when we receive data sets for the 2004/2005 academic year from supporting districts. The Comparison Group in this Class started with significantly higher pre-lottery scores on the 2003 CAT-6 Mathematics subtest; all other subtests failed to reach significance.

### 3) EFFECT OF DATA AVAILABILITY:

Our third concern has to do with data availability. We have access to student academic records from two of the 42 school districts in San Diego County: San Diego City Schools (SDCS) and the Sweetwater Union High School District (SUHSD).<sup>11</sup> While this access is invaluable, it also means that we are unable to track the progress of students who leave the Preuss or Comparison Groups and continue their education in one of the other 40 districts in the county (or move to a different county or state).

Data availability and attrition are somewhat synonymous in the context of this report. A student lost from a Group is lost only because of our inability to track them at his or her new school sites. The baseline and attrition analyses presented previously suggest that, for the Classes of 2005 and 2006, limited data access does not present a serious problem. Attrition, (our inability to track students) resulted in Groups with roughly equal baseline performance and we are confident that the issue of bias is well addressed for these Classes. From a purely analytic perspective, we are concerned that future applicant pools may draw an increasing number of students from outside SDCS and SUHSD. At this time it is impossible to predict if this will be the case and at what point the number of students we are unable to track becomes large enough to impact our ability to perform meaningful analyses. This is an important issue which we will monitor closely and include in future reports.

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<sup>11</sup> Sweetwater is a High School rather than a unified district and has only middle and high schools. Because most students enter the Preuss School in the 6<sup>th</sup> grade, baseline test scores are unavailable for applicants from this district.

## California Standards Test (CST)

### WHAT IS BEING MEASURED?

“The California Standards Tests in English language arts, mathematics, science, and history/social science are comprised of items that were developed specifically to assess students' performance on California's content standards. The State Board of Education adopted the content standards specifying what all California children are expected to know and be able to do. The content standards are grade and course specific” (SDCS Standards, Assessment and Accountability Division – 2003 STAR Report).

### CST ANALYSIS ISSUES:

Unlike the CAT-6 and SAT-9 examinations, in some subject areas the classes taken by a student and not current grade level determine which subtest of the CST is taken in a given year. This difference has two important consequences for group analyses: fragmentation and selection.

Fragmentation is best explained by looking the yellow shaded portion of Table 3.2.1. Instead of taking a single examination, the 34 students in the Preuss Group were taking three different Mathematics tests in 2002/2003, determined by the course they took in that year. The net result of fragmentation is a reduction in the sample size available for an “apples to apples” analysis of Preuss and Comparison Group performance. Reduction in sample size results in a loss of statistical “power,” or the ability to detect group differences, should they exist. Along with a reduction in power, fragmentation also reduces our ability to perform statistical analyses. For example, so few students took the Biology and Physics examination in 2002/2003 that it is impossible for us to perform a meaningful test in these subject areas. For this reason, in subject areas where the number of students taking the test was small we have not attempted to perform an analysis and group performance is not reported in the pages that follow.

The second analysis issue has to do with selection. In past years all students were required to take the CAT-6 or SAT-9 subtests appropriate to their grade level. With CST test selection driven by the courses a student has taken, it is possible that some students are never required to take a test in a particular subject area. The blue shaded area of table 3.2.1 illustrates this point. Note that over the course of the 2002/2003 and 2003/2004 school years all 34 members of the Preuss Group (plus one “repeat”) took the CST Chemistry subtest, compared with 12 of the 20 students in the Comparison Group. In this example, selection biases the analysis of group performance in favor of the Comparison Group. This is because all students at Pruess, from best to worst, took a Chemistry course and the examination and they are being measured against the 60% (12/20 students) of Comparison Group students academically prepared to take the course. Tables 3.2.1 through 3.2.5 provide information on the number of students in each group and graduating class taking the various CST subtests.

A third issue is not directly tied to, but has implications for analysis of group performance. The premise behind the CST dictates that subtests' be closely tied to course content and course content changes as students advance through the grade levels. This very specific testing poses a problem because it prevents us from tracking changes in student performance over time. Figures 3.2.1 and 3.2.2 provide a good example of this problem. Notice that in the first year (Figure 3.2.1) students are tested in World History and Chemistry and the following year (Figure 3.2.2) in U.S. History and Biological Science. Individually, these tests may be reasonable and well constructed, but it makes little sense to attempt a comparison between scores on a Chemistry test from one year with scores on a Biology test the following year. For this reason, each of the figures in this section presents single year performance which cannot be reasonable compared with performance from other time periods.



**Table 3.2.1 – Class of 2005 - Test Takers by Subtest and Year**

SUBTEST	PREUSS (2002-2003)	COMPARISON (2002-2003)	PREUSS (2003-2004)	COMPARISON (2003-2004)
English	34	20	34	18
World History	34	19	0	0
U.S. History	0	0	34	18
Algebra 2	18	8	14	6
Geometry	15	8	1	3
H.S. Math	1	1	19	7
Integrated Math 1	0	0	0	2
Biology	0	4	32	12
Chemistry	33	9	2	3
Physics	1	2	0	2

**Table 3.2.2 – Class of 2006 - Test Takers by Subtest and Year**

SUBTEST	PREUSS (2002-2003)	COMPARISON (2002-2003)	PREUSS (2003-2004)	COMPARISON (2003-2004)
English	29	33	29	34
World History	0	0	29	34
Algebra 1	2	12	1	1
Algebra 2	14	1	9	20
Geometry	13	22	7	11
9 <sup>th</sup> Grade Math	0	1	0	0
H.S. Math	0	0	12	1
Biology	0	4	0	3
Chemistry	0	0	27	29
Physics	29	25	2	2

**Table 3.2.3 – Class of 2008 - Test Takers by Subtest and Year**

SUBTEST	PREUSS (2002-2003)	COMPARISON (2002-2003)	PREUSS (2003-2004)	COMPARISON (2003-2004)
English	105	31	103	31
History	0	0	95	31
Algebra 1	0	0	80	30
Algebra 2	0	0	2	0
Geometry	0	0	19	0
7 <sup>th</sup> Grade Math	105	31	0	0
General Math	0	0	0	1

**Table 3.2.4 – Class of 2009 - Test Takers by Subtest and Year**

SUBTEST	PREUSS (2002-2003)	COMPARISON (2002-2003)	PREUSS (2003-2004)	COMPARISON (2003-2004)
English	132	49	127	46
6 <sup>th</sup> Grade Math	132	49	0	0
7 <sup>th</sup> Grade Math	0	0	130	47

**Table 3.2.5 – Class of 2010 - Test Takers by Subtest and Year**

SUBTEST	PREUSS (2002-2003) (PRE LOTTERY)	COMPARISON (2002-2003) (PRE LOTTERY)	PREUSS (2003-2004)	COMPARISON (2003-2004)
English	124	120	133	117
5 <sup>th</sup> Grade Math	124	120	0	0
6 <sup>th</sup> Grade Math	0	0	133	117

## ANALYSIS:

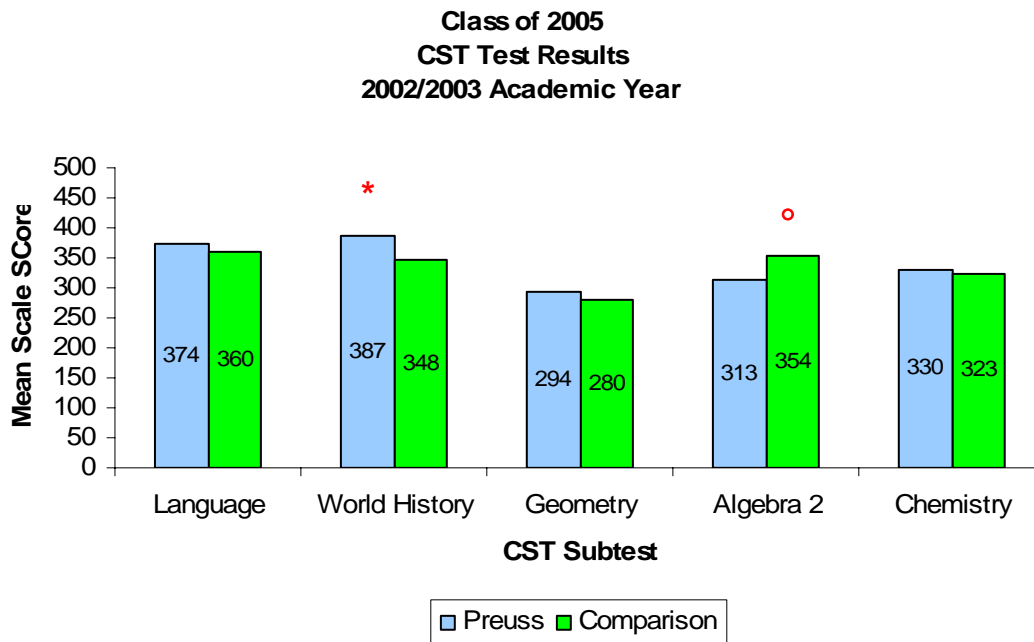
Figures 3.2.1 through 3.2.9 provide information on Group performance and the CST subtests analyzed, beginning with the Class of 2005. In analyzing scores for the Class of 2005, the Preuss Group scored significantly better than Comparison Group students on the 2002/2003 subtest in World History ( $p = 0.004$ ) and a marginal difference in Algebra 2 scores favored the Comparison Group ( $p = 0.059$ ). There was no evidence for differences on the other subtests of the CST in this year. In 2003/2004 there were no significant or marginal differences between the groups across the subtests of the CST.

Analysis of the 2002/2003 subtests for the Class of 2006 failed to show differences on the English, Geometry or Physics subtests, the only analyses possible with the sample sizes available. Analysis of data from the 2003/2004 subtests showed students in the Groups significantly better on Geometry ( $p = 0.014$ ) and marginally better on the English ( $p = 0.062$ ) and Chemistry ( $p = 0.083$ ) portions of the exam.

The Class of 2008 showed no statistically significant group differences on the CST Language or Mathematics subtests in 2003/2003, but in 2003/2004, Preuss students scored better on the History ( $p = 0.043$ ) and Comparison Group students better on the Algebra 1 ( $p = 0.039$ ) subtests of the examination.

Preuss students in the Class of 2009 demonstrated significantly higher scores in Mathematics for both years and for English Language Arts in 2003/2004, but it is important to remember that Preuss students demonstrated superiority in these subject areas on the SAT-9 baseline tests taken in 2001/2002. The Comparison Group in the Class of 2010 demonstrated higher pre-lottery performance in Mathematics on the CAT-6 (but not the CST) and continued to demonstrate that initial difference on the 2003/2004 CST Mathematics subtest.

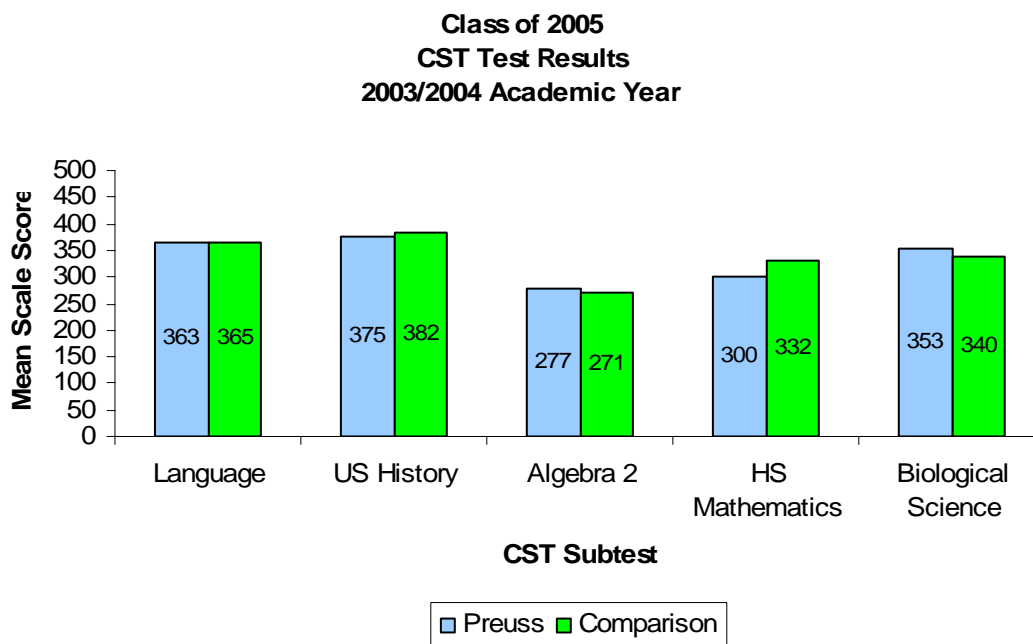
**Figure 3.2.1 – Class of 2005**



\* There was a significant difference in World History,  $p = 0.004$

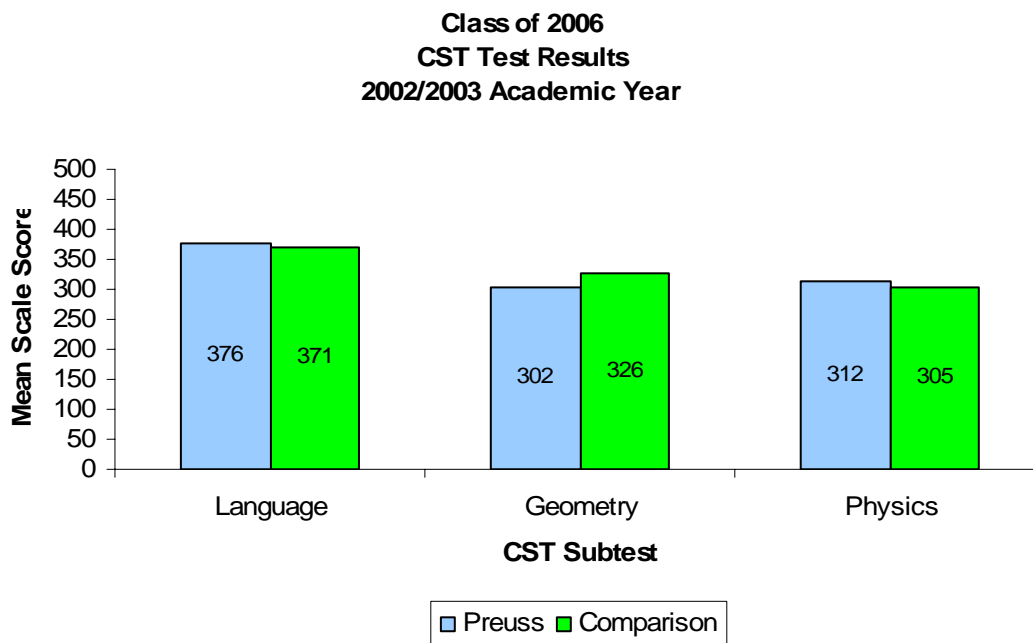
◦ There was a marginal difference in Algebra 2,  $p = 0.059$

**Figure 3.2.2 – Class of 2005**



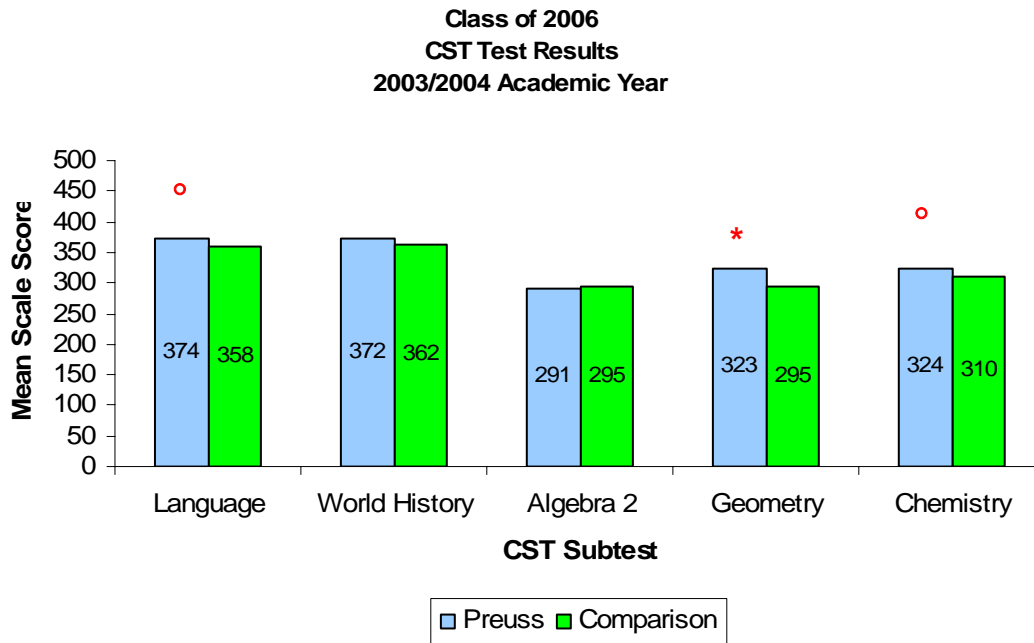
There were no statistical significant or marginal differences between Preuss and Comparison Groups on these measures.

**Figure 3.2.3 – Class of 2006**



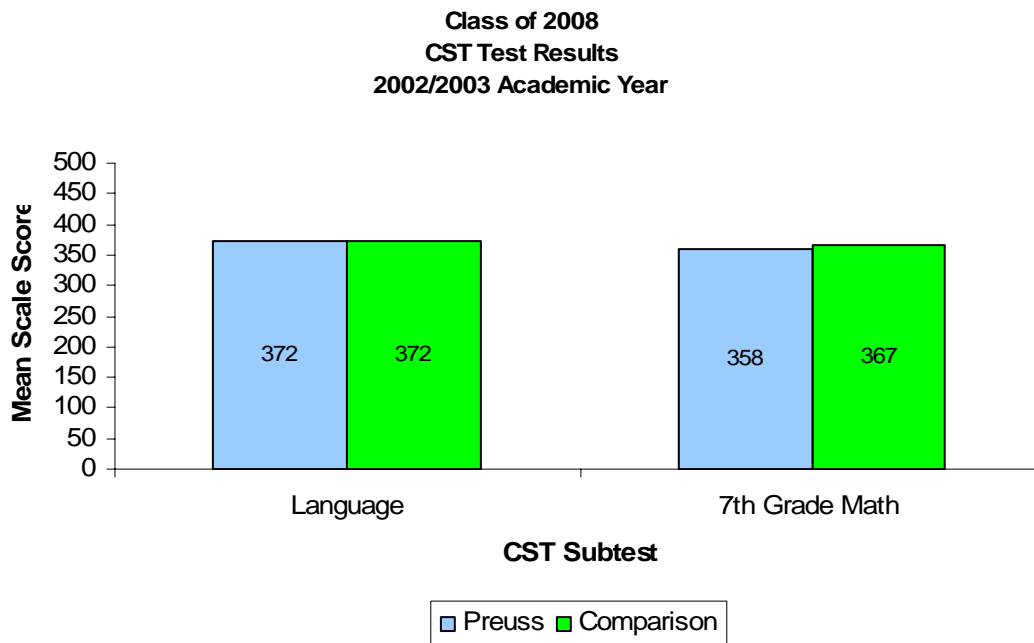
There were no statistical significant or marginal differences between Preuss and Comparison Groups on these measures.

**Figure 3.2.4 – Class of 2006**



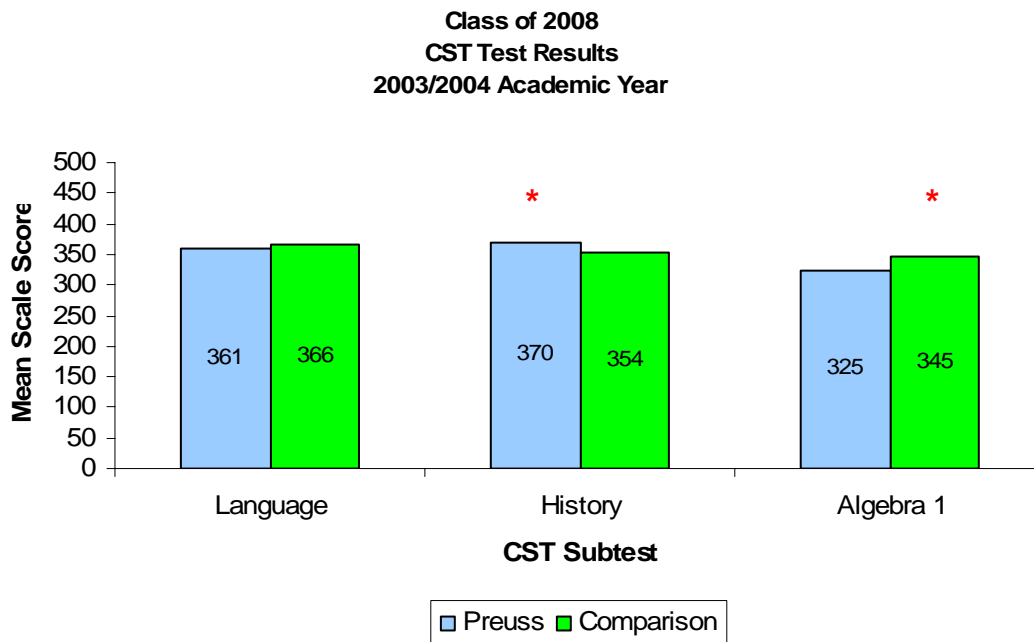
- \* There was a significant difference in Geometry,  $p = 0.014$
- There was a marginal differences in Language,  $p = 0.062$  and Chemistry,  $p = 0.083$

**Figure 3.2.5 – Class of 2008**



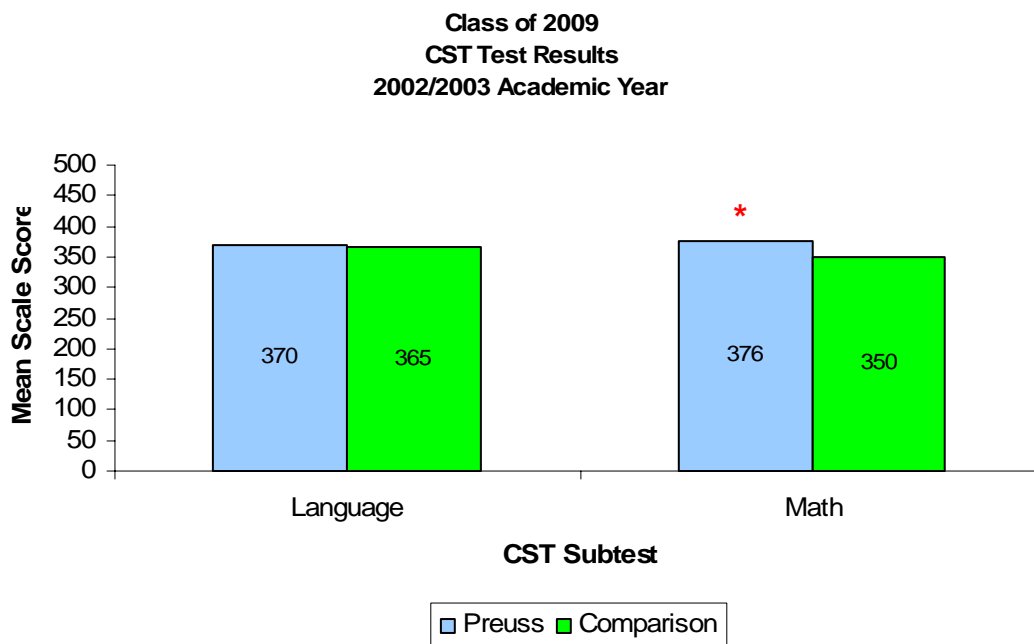
There were no statistical significant or marginal differences between Preuss and Comparison Groups on these measures.

Figure 3.2.6 – Class of 2008



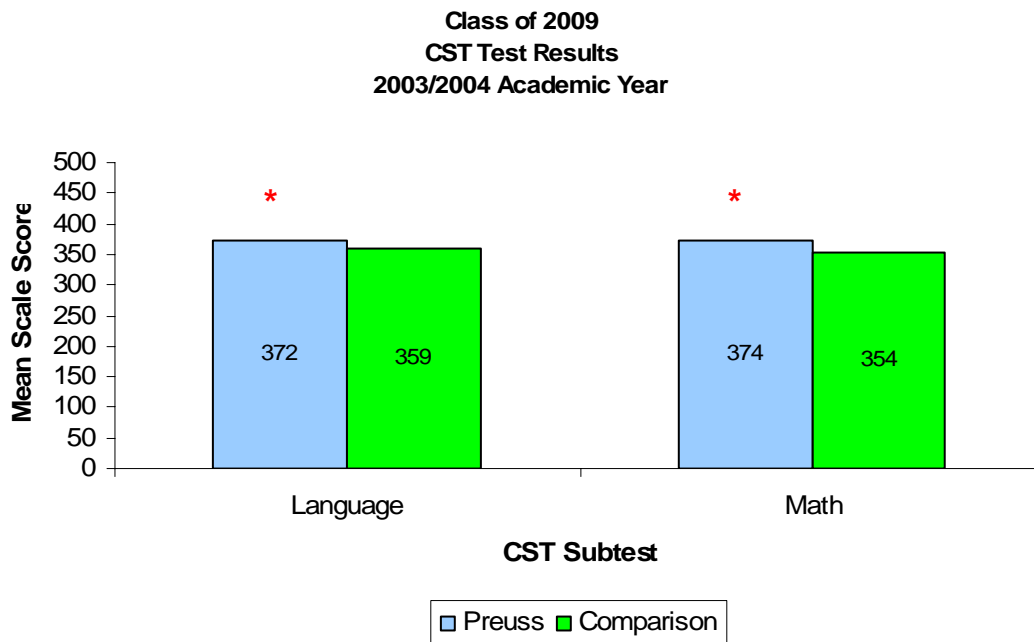
\* There were significant differences in both History,  $p = 0.043$  and in Algebra 1,  $p = 0.039$

Figure 3.2.7 – Class of 2009



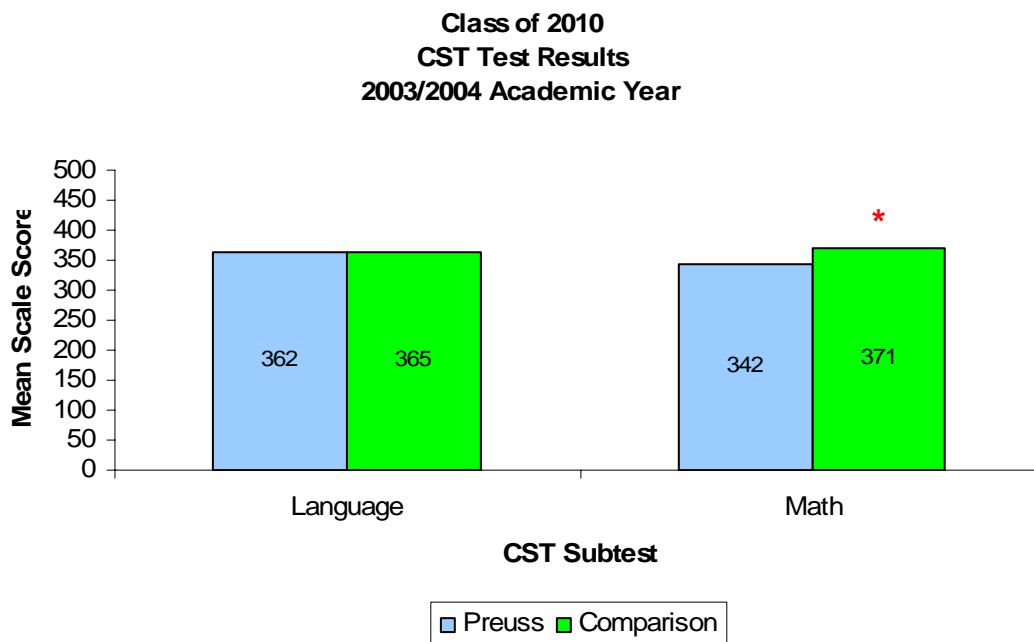
\* There was a significant difference on the Mathematics portion of the CST,  $p = 0.008$ . While they are different examinations, it is important to remember that the Preuss Group appears to have started out with better academic credentials, scoring significantly higher, pre-lottery, on both the Language and Mathematics portions of the SAT-9 in 2001/2002.

Figure 3.2.8 – Class of 2009



\* There was a significant difference on the Mathematics portion of the CST,  $p = 0.009$  and the Language subtest,  $p = 0.034$ . The same caution in the previous Figure applies here. The groups started out scoring differently on the SAT-9 Language and Mathematics subtests and continue to exhibit an advantage in these subject areas on the CST.

Figure 3.2.9 – Class of 2010



\* There was a significant difference on the Mathematics portion of the CST,  $p < 0.0001$ .

## California Achievement Test (CAT/6)

### WHAT IS BEING MEASURED?

California Achievement Test ("CAT/6") is used to assess student performance across a variety of subject areas: English Language Arts, Spelling, Mathematics and Science. We report the mean scaled scores for both Preuss and Comparison groups for the Classes of 2005 through 2010. Unlike the California Standards Tests, all students in the State are expected to take the CAT/6, which is tied to grade level rather than courses completed.

### ANALYSIS:

Figures 3.3.1 through 3.3.4 provide information on the CAT/6 for the Classes of 2005 and 2006.

For the Class of 2005, an analysis of the scaled scores of Preuss and Comparison Group students across all subtests of the CAT/6 failed to detect either significant or marginal group differences in the 2002/2003 testing year. Observed  $p$  values ranged from a low of 0.651 on the English Language Arts subtest, to a high of 0.953 on the Mathematics portion of the examination. This pattern was repeated in the 2003/2004 testing.

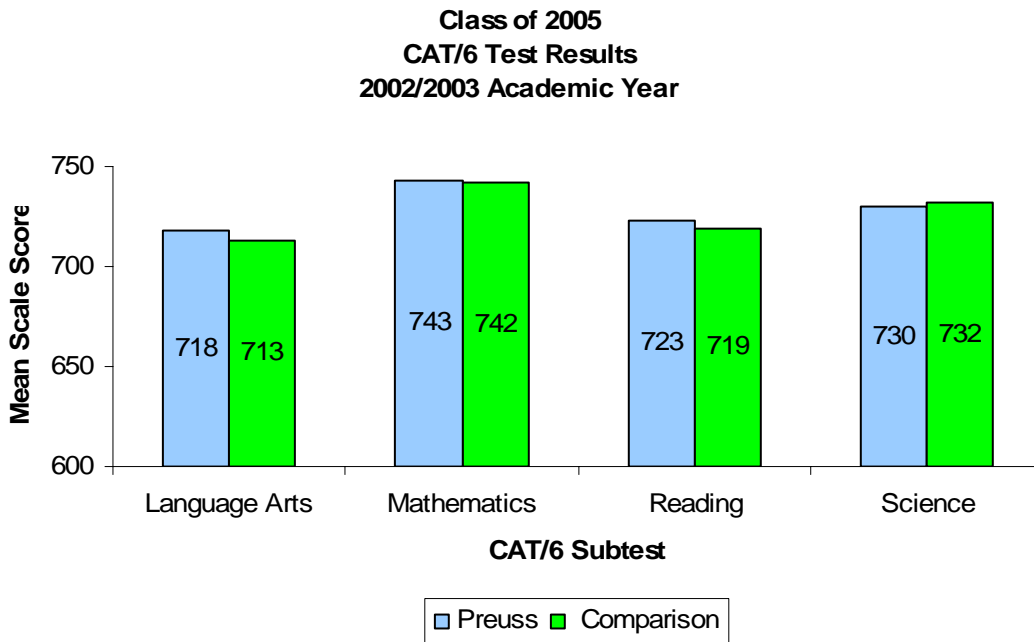
The Class of 2006 had no significant or marginal group differences across the subtests in 2002/2003. The 2003/2004 scores for this Class were marginally different on the English Language Arts and Reading subtests, favoring the Preuss students ( $p = 0.10$  and  $p = 0.088$ , respectively).

Figures 3.3.5 through 3.3.10 provide information on the CAT/6 for the Classes of 2008 through 2010. For the Class of 2008, there was no statistically significant or marginal difference between the Preuss and Comparison Groups in either the 2002/2003 or 2003/2004 testing years on any subtest of the CAT/6 (across the years,  $p$  values ranged from 0.305 to 0.947).

The Class of 2009 showed significant differences in favor of the Preuss students on pre-lottery SAT-9 scores taken in 2001/2002. The CAT/6 scores in 2002/2003 reached significance on the Mathematics subtest ( $p = 0.026$ ) in favor of the Preuss Group, but no other section of the exam approached a marginal or statistically significant difference. In the 2003/2004 test year no subtest comparison reached significance, however the Mathematics subtest was marginally in favor of the Preuss Group ( $p = 0.076$ ).

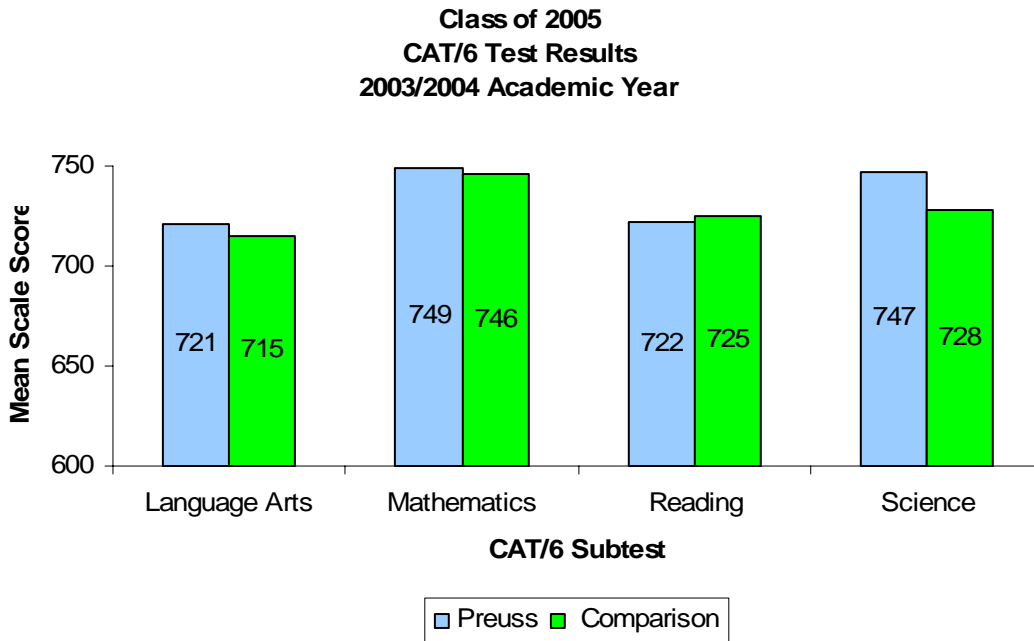
Pre-lottery test scores for the Class of 2010, taken in 2002/2003, were different only on the CAT/6 Mathematics subtest, with Comparison Group students scoring significantly better than the Preuss Group. This suggested a preexisting Group difference in Mathematics achievement, and that difference persisted in an analysis of the scale scores of the 2003/2004 CAT/6. Comparison Group students scored significantly better ( $p = 0.0001$ ) on the Mathematics subtest, but no other subtest approached statistical significance.

Figure 3.3.1 – Cohort 2005



There were no statistically significant or marginal differences between Preuss and Comparison Groups on these measures.

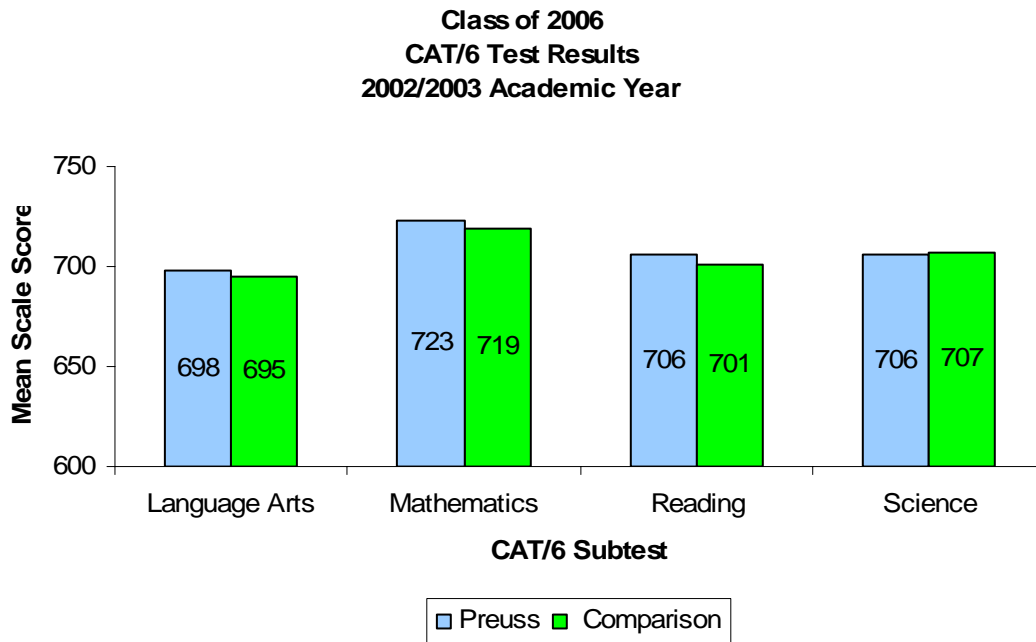
Figure 3.3.2 – Cohort 2005



There were no statistically significant or marginal differences between Preuss and Comparison Groups on these measures.

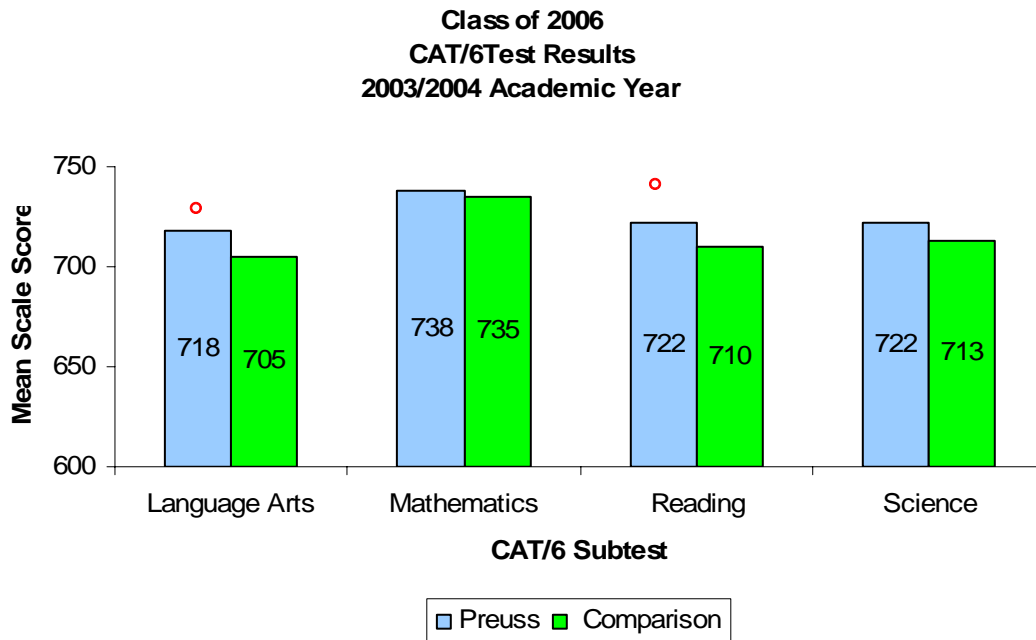


Figure 3.3.3 – Cohort 2006



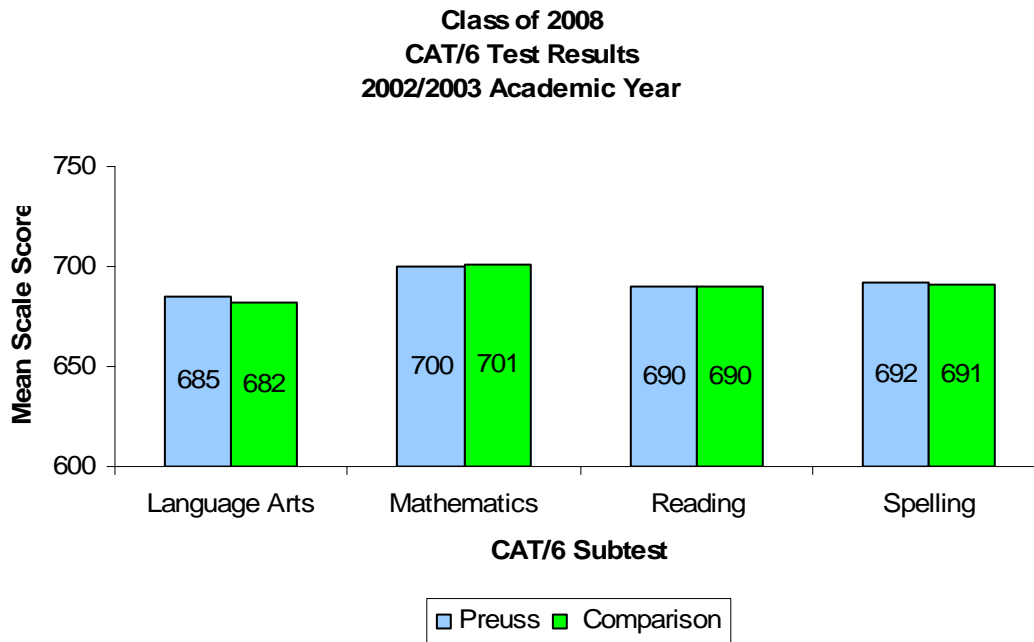
There were no statistically significant or marginal differences between Preuss and Comparison Groups on these measures.

Figure 3.3.4 – Cohort 2006



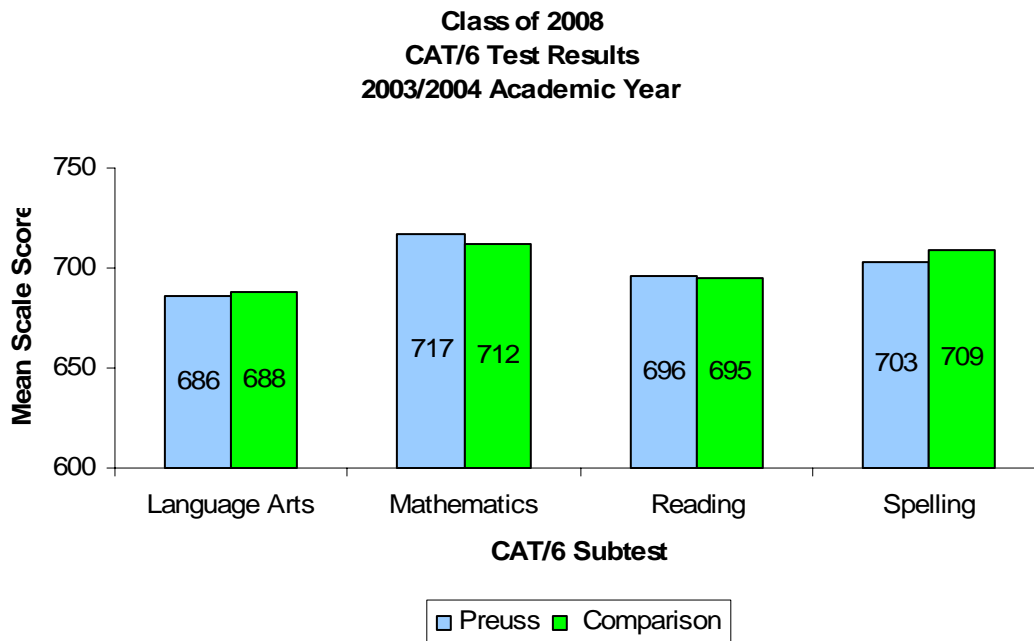
◦ There were marginal differences in Language and Reading scores

**Figure 3.3.5 – Cohort 2008**



There were no statistically significant or marginal differences between Preuss and Comparison Groups on these measures.

**Figure 3.3.6 – Cohort 2008**



There were no statistically significant or marginal differences between Preuss and Comparison Groups on these measures.

Figure 3.3.7 – Cohort 2009

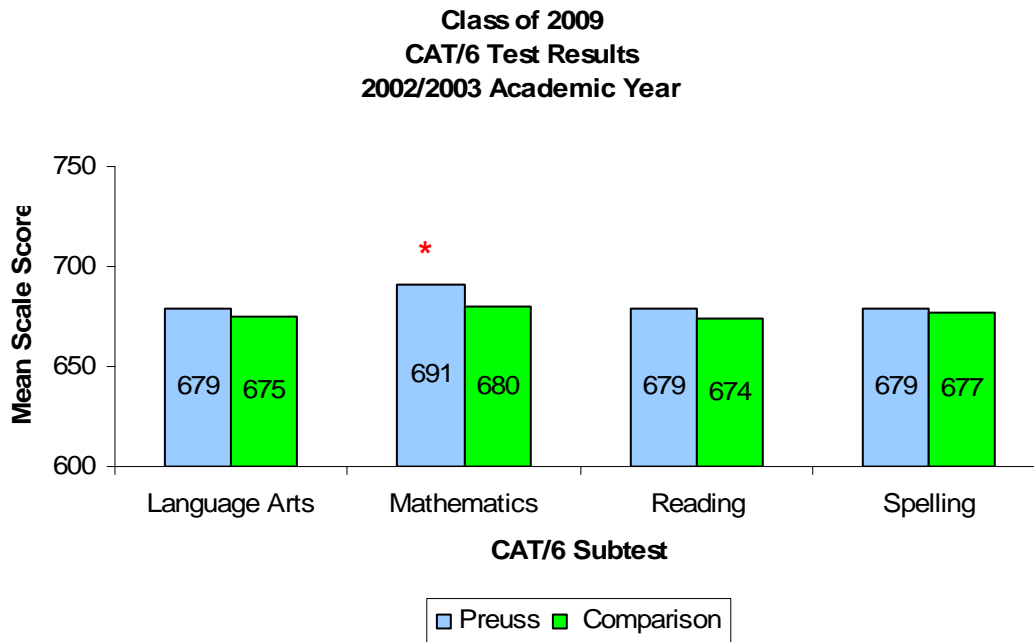


Figure 3.3.8 – Cohort 2009

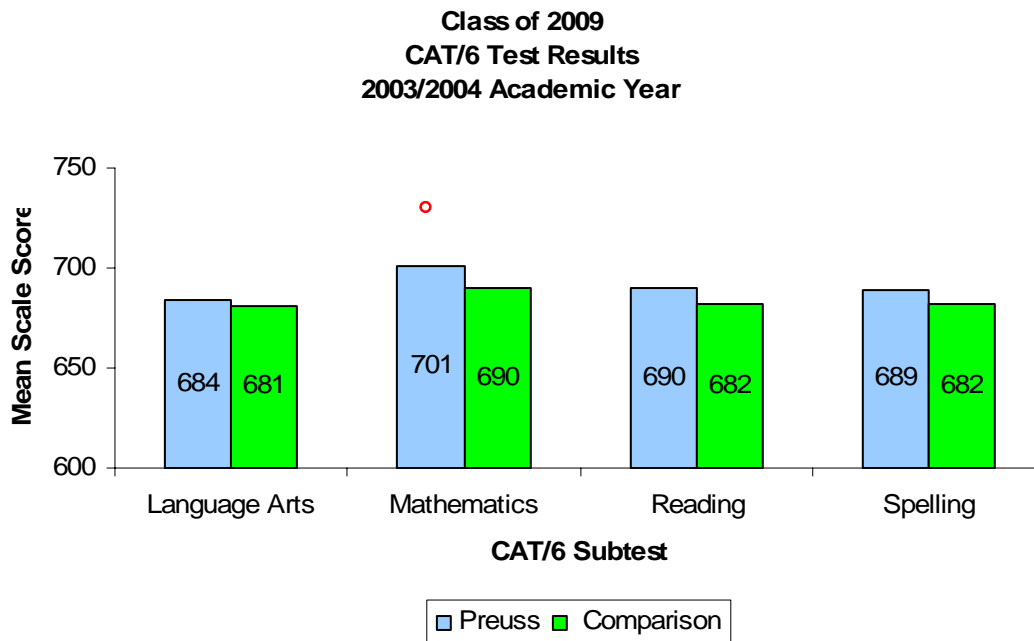


Figure 3.3.9 – Cohort 2010

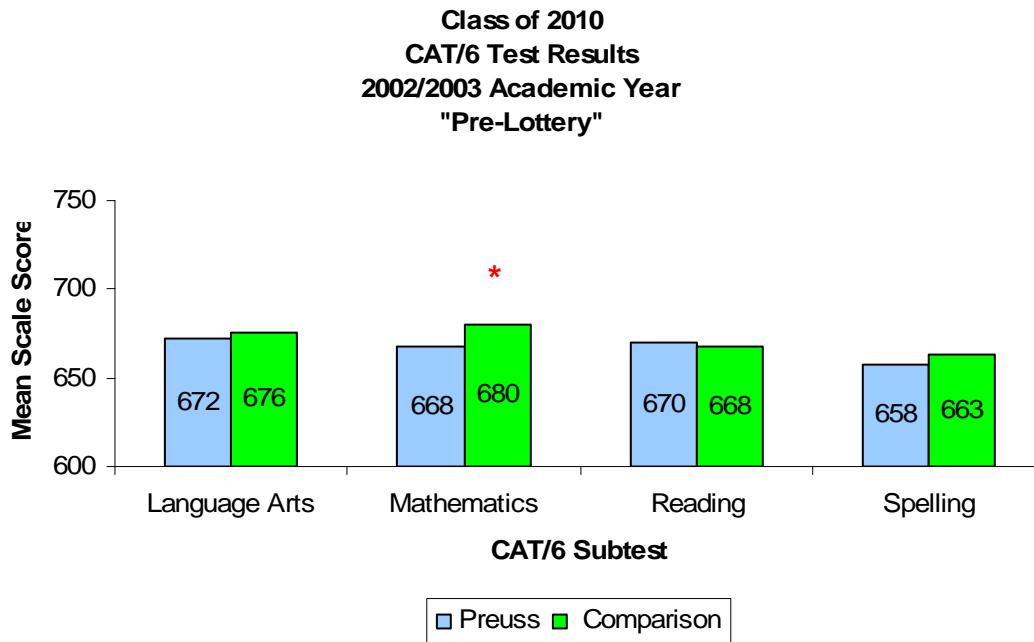
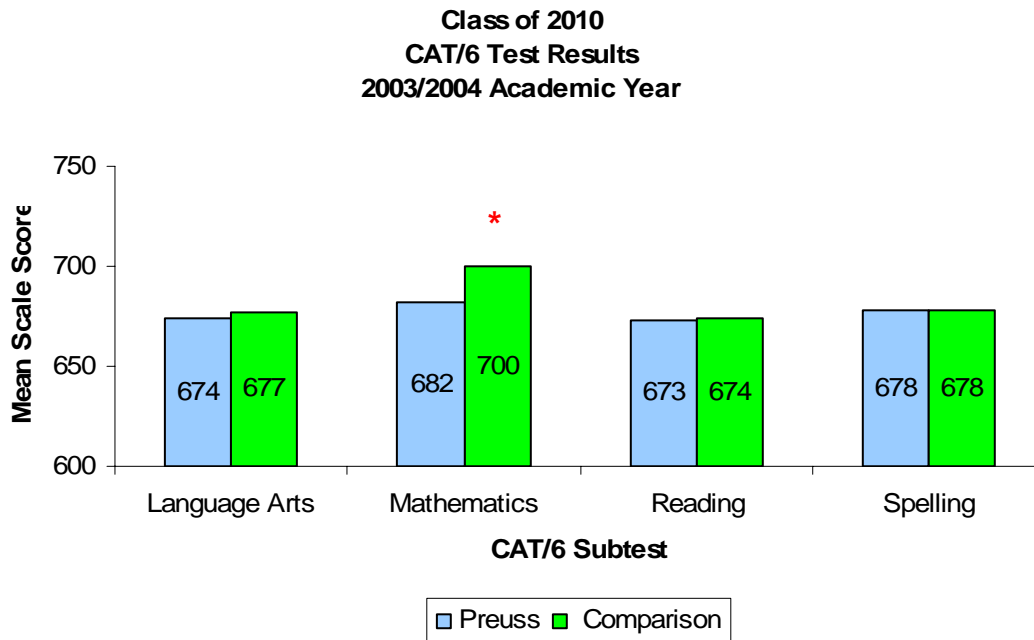


Figure 3.3.10 – Cohort 2010



# Unweighted Grade Point Average

## WHAT IS BEING MEASURED?

For every student, college admissibility is largely determined by three factors: grade point average (GPA), college entrance examination scores, and the courses taken during the high school years. Unweighted GPA represents the grades earned for courses taken without adjusting for course difficulty. The unweighted GPA of the Preuss and comparison students are presented in this section of the report.

## ANALYSIS:

Figures 3.4.1 and 3.4.2 depict the unweighted High School GPA's for Preuss and Comparison Group students and their cumulative GPA through the end of the 2003/2004 school year. The Class of 2005 Preuss and Comparison Groups did not have significantly different or marginally different GPA's in any single year or in their cumulative GPA's.

The Preuss Group in the Class of 2006 did not have statistically different GPA's in the 9<sup>th</sup>, 10<sup>th</sup>, or in their cumulative GPA, but they were marginally different in each of those categories ( $p = 0.083$ ,  $p = 0.101$ ,  $p = 0.0779$  respectively). While the difference between Preuss and Comparison students may not have reached "statistical significance," the roughly  $\frac{1}{4}$  grade point observed difference may have "real world" implications and represent the difference between attending or not attending college (or having a choice of which college to attend). Because these students are only half way through high school, it is possible that the observed difference will grow as additional years of course work are included in the analysis.

**Figure 3.4.1 – Class of 2005**

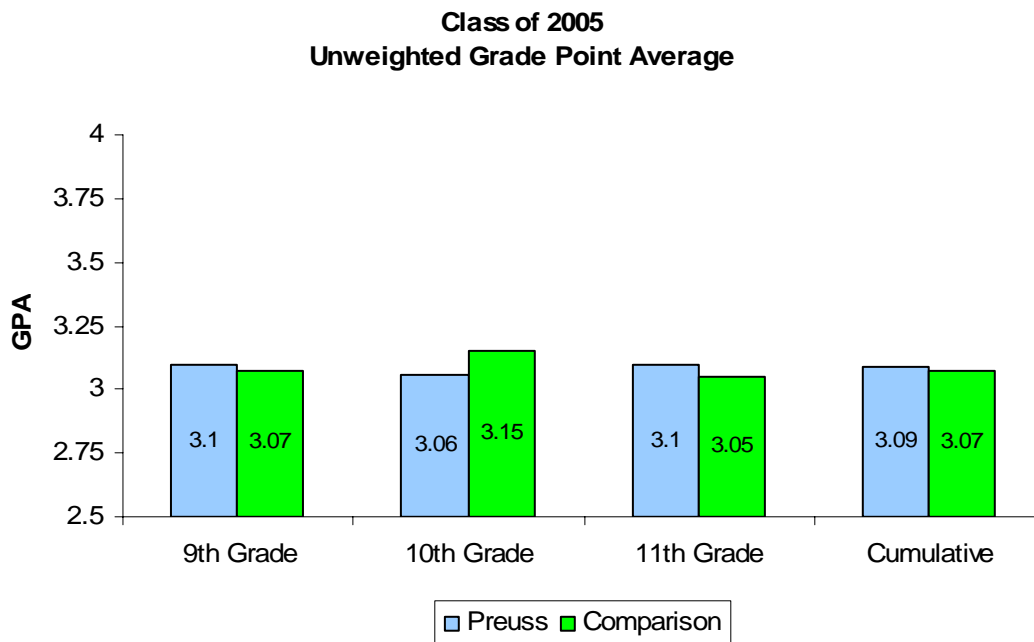
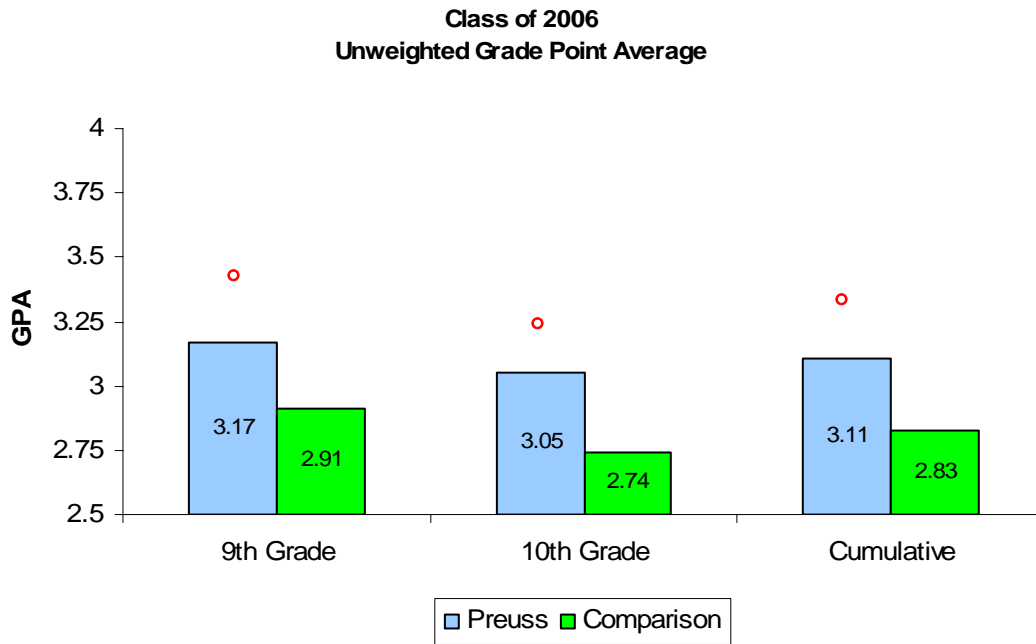


Figure 3.4.2 – Cohort 2006



○ There were marginal differences at both grade levels and in the cumulative GPA for the Class of 2006.

# Weighted Grade Point Average

## WHAT IS BEING MEASURED?

The weighted GPA of the Preuss and comparison students are presented in this section of the report. Students earn additional grade points for each advanced placement and honors course taken and passed, and these additional grade points are factored into the weighted GPA. Colleges and universities use the weighted GPA in making their admission decisions.

## ANALYSIS:

Figures 3.5.1 and 3.5.2 depict the weighted GPA for Preuss and comparison group students since 9<sup>th</sup> grade and the cumulative weighted GPA through the end of the 2003/2004 school year. For Cohort 2005, statistical analysis of the grades earned failed to detect significant group differences or marginal differences for any individual year or for the cumulative GPA. Significance aside, the growth in weighted GPA for Preuss students is worth noting because students have moved from 3.17 to 3.25 to 3.42 over the three years reported.

The Preuss students in the Class of 2006 just failed to reach statistical significance in 9<sup>th</sup> grade ( $p = 0.053$ ) and were statistically different from Comparison Group students in 10<sup>th</sup> grade ( $p = 0.031$ ) and in their cumulative weighted GPA ( $p = 0.028$ ). Aside from statistical significance, the observed 1/3 grade point difference could have practical implications, both in college admissibility and college selection. It is worth noting that these students have only completed the first two years of High School and most of the opportunities to take “added value” courses occur in the final two years.

**Figure 3.5.1 – Class of 2005**

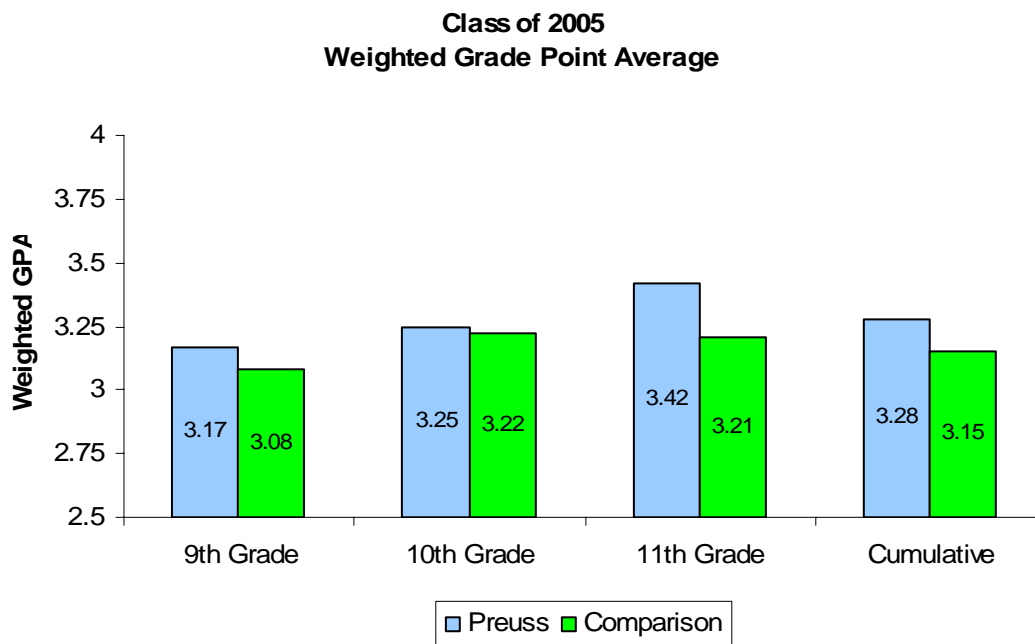
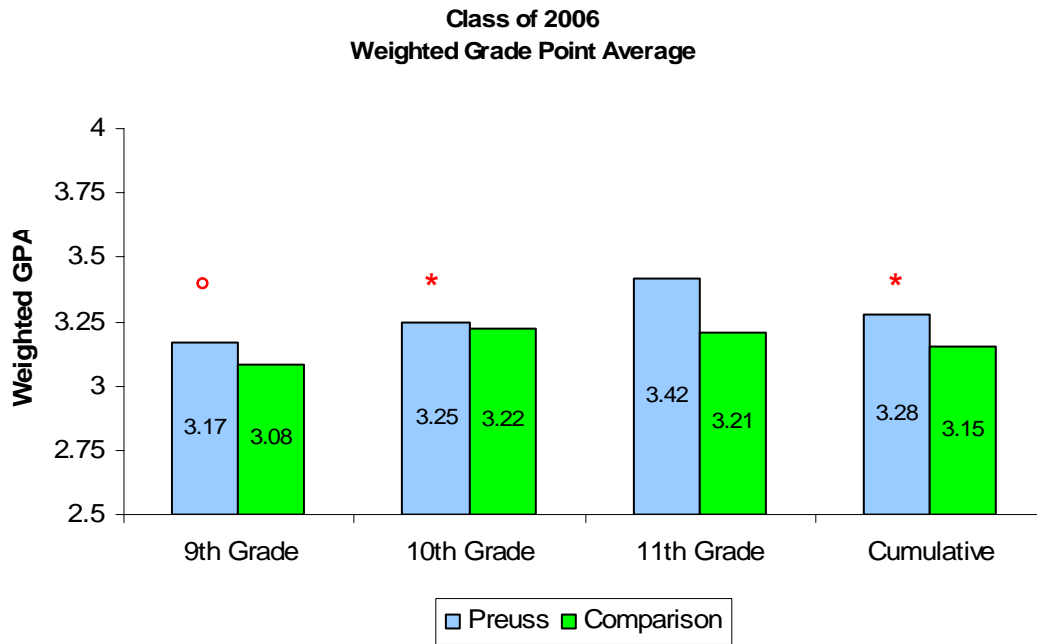


Figure 3.5.2 – Cohort 2006



○ Marginally significant difference in 9<sup>th</sup> grade weighted GPA

\* Statistically significant differences in both 10th grade weighted GPA and cumulative weighted GPA



## Cumulative “A-G” Courses

### WHAT IS BEING MEASURED?

The University of California and the California State University have jointly determined both the subject areas and number of courses a student must take and pass (with a grade of “C” or better) to be eligible for admission to public four-year institutions in California. Collectively, these requirements are referred to as the “A-G” requirement. The following table shows each of the subject areas and the minimum and recommended number of years of study required for college eligibility:

REQUIREMENT	SUBJECT AREA	YEARS OF STUDY REQUIRED
“A”	History / Social Science	2
“B”	English	4
“C”	Mathematics	3 required (4 recommended)
“D”	Laboratory Science	2 required (3 recommended)
“E”	Language other than English	2 required (3 recommended)
“F”	Visual and Performing Arts	1
“G”	Electives	1
	<b>Total Years</b>	<b>15 required, 18 recommended</b>

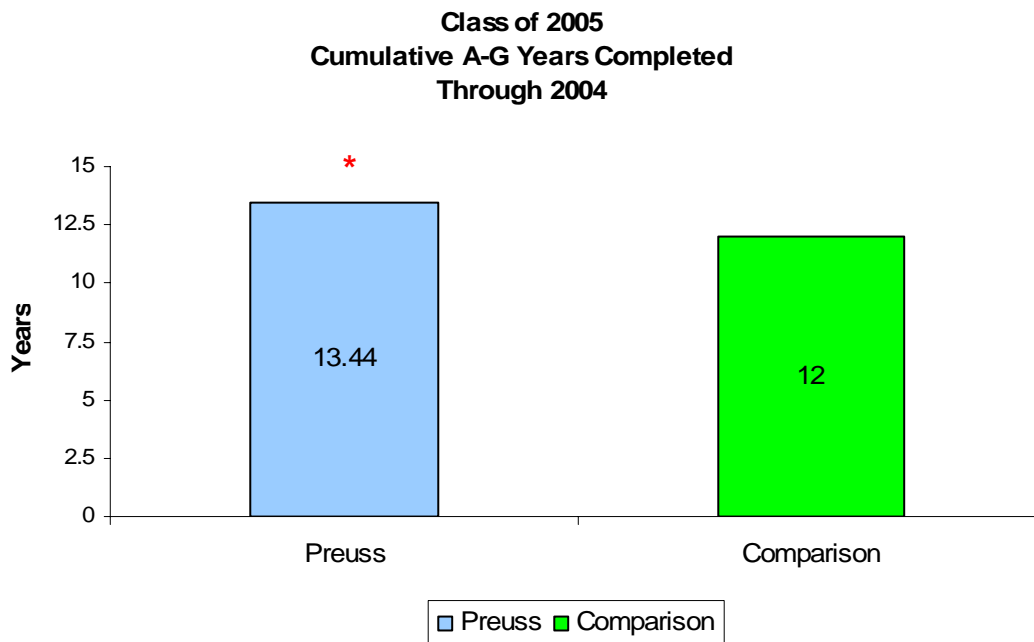
### ANALYSIS:

Figures 3.6.1 and 3.6.2 depict the cumulative years of A-G courses taken through the end of the 2003/2004 academic year. Collapsing across the A-G subject areas and counting the number of years of study needed to meet all requirements, a student must complete a total of 15 years of study for minimum eligibility. The Preuss students in the Class of 2005 had, at the end of eleventh grade, taken and passed the equivalent of 13.44 years of A-G course work, while students in the Comparison Group had taken accumulated an average of 12.00 years (Figure 3.6.1), for a statistically significant difference of 1.44 years ( $p = 0.021$ ).

A statistical analysis of the cumulative A-G courses taken and passed by the Class of 2006 reveals a statistically significant difference of 1.82 course years, with the Preuss students accumulating more A-G courses ( $p = 0.003$ ). The Preuss students in the Class of 2006 had, at the end of tenth grade, taken and passed the equivalent of 10.28 years of A-G course work while students in the comparison group had taken an average of 8.46 years (Figure 3.6.2).

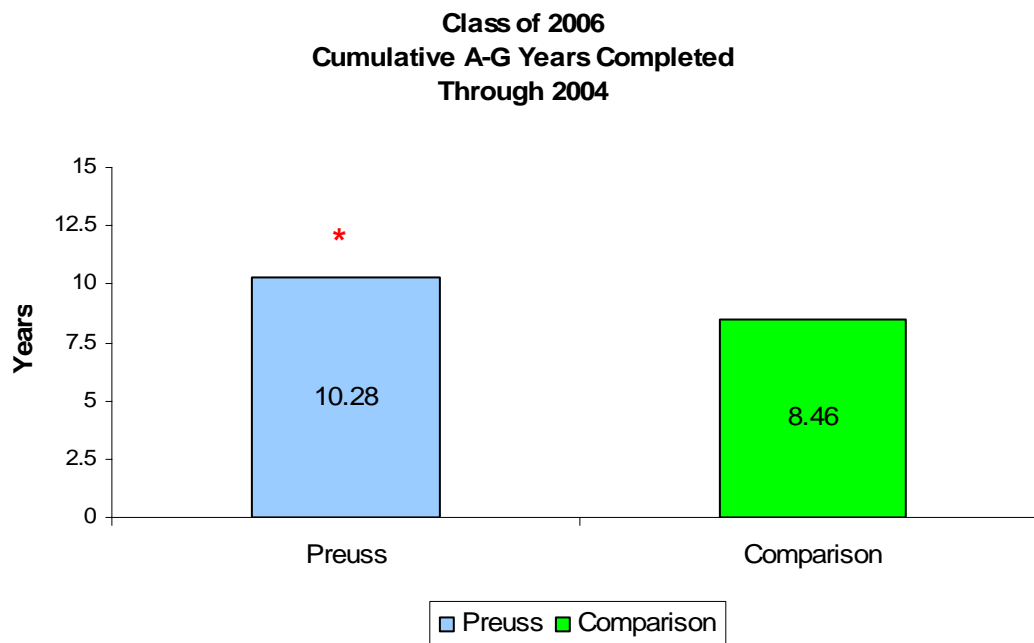
The Preuss students in the Class of 2005, with one year left of High School are, on average, 90% of the way to the 15-year-long course minimum requirement, while the comparison group has completed 80% percent of the requirement. The Preuss students in the Class of 2006, at the mid-point of high school are, on average, 68.5% of the way to the 15-year-long course minimum requirement, while the comparison group has completed 56.4% percent of the requirement. Course accumulation, especially in the first two years of high school, is critical because there is little opportunity to “make-up” courses that were skipped or failed in the time remaining to graduation. A comparison of the years of A-G courses completed is useful because it provides a rough indicator of early progress.

Figure 3.6.1 – Cohort 2005



\* Significant at  $\alpha = 0.05$ , two-tailed. See text for observed  $p$  values.

Figure 3.6.2 – Cohort 2006



\* Significant at  $\alpha = 0.05$ , two-tailed. See text for observed  $p$  values.

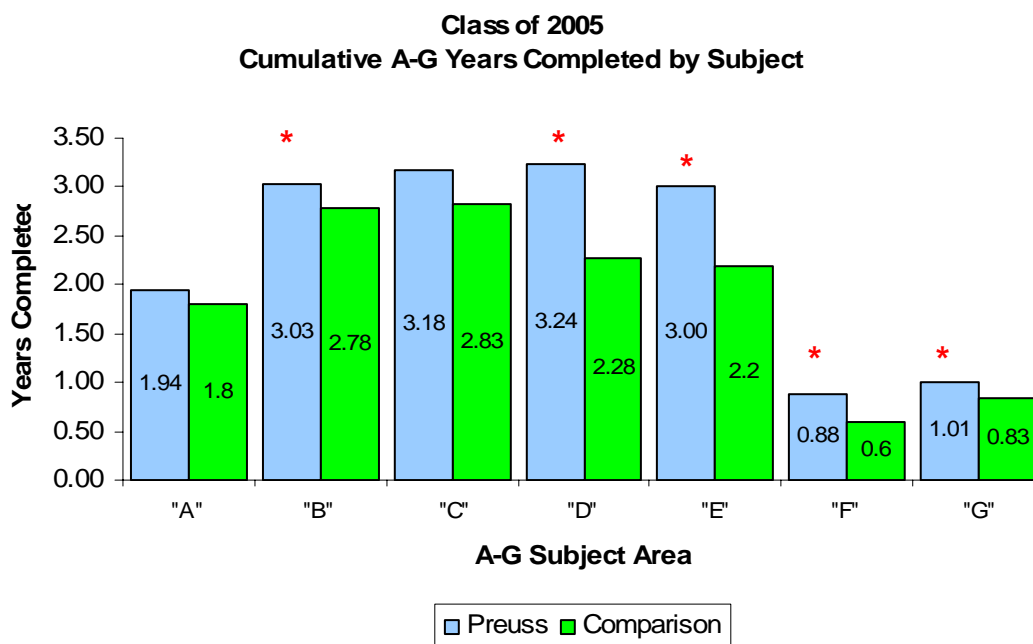
While looking at accumulated A-G years can be useful, it's also true that the margin of error for completing the requirements is quite small; without careful planning a student can find themselves with enough "years" of A-G courses and still fail to meet the A-G requirements because they took few courses in a particular subject area.

Figures 3.6.3 and 3.6.4 provide information on the number years accumulated in each of the A-G subject areas, for the Preuss and Comparison Groups. Figures 3.6.3 and 3.6.4 track progress toward the “recommended” course of study rather than minimum eligibility as provided in the previous figures. These are calculated differently because some of the additional “recommended” courses may also count toward the College Elective requirement and for this reason appear twice in the totals. In particular, advanced courses in Mathematics, Laboratory Science and English beyond the minimum requirement were counted both toward the recommended requirement in those subject areas and in the College Elective category. The rationale was that we wished to provide information on “competitive eligibility,” but not at the expense of A-G completion.

For the Class of 2005, analysis of the course taking patterns of the two groups reveals statistically significant differences in multiple subject areas. Preuss students had, at the end of 11<sup>th</sup> grade, accumulated significantly more courses in English ( $p = 0.019$ ), Laboratory Science ( $p = 0.028$ ), Language other than English ( $p = 0.0001$ ), Visual and Performing Arts ( $p = 0.0127$ ), and College Elective ( $p = 0.0035$ ) categories of the A-G.

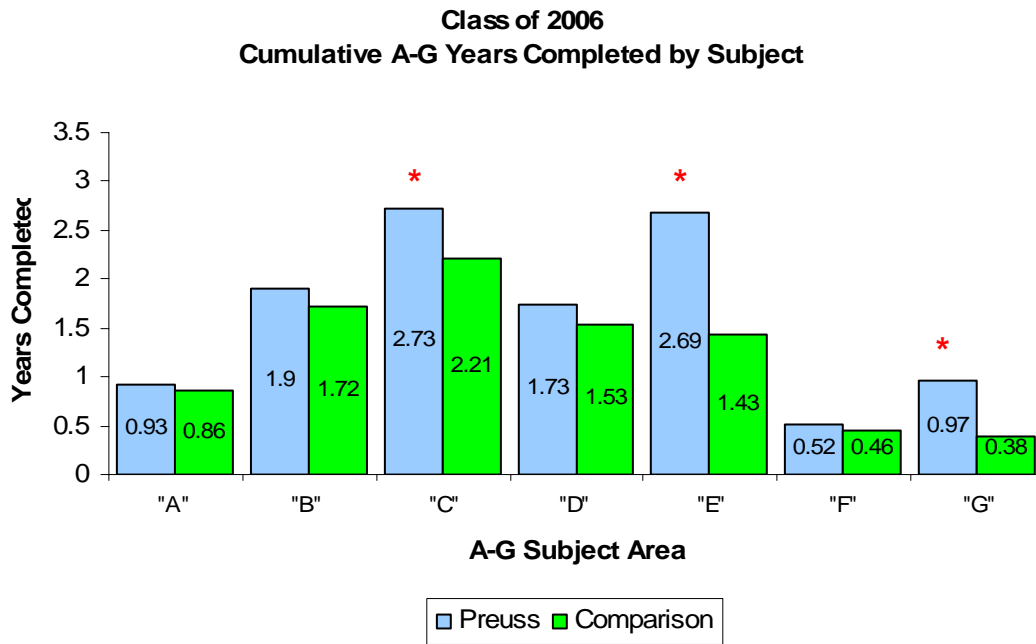
Statistical analysis of the course taking patterns of the Class of 2006 showed Preuss students accumulating significantly more Mathematics ( $p = 0.050$ ), Language other than English ( $p < 0.001$ ) and College Elective ( $p < 0.001$ ) courses than students in the Comparison Group at the mid-point of their progress through High School.

**Figure 3.6.3 – Cohort 2005**



\* Significant at  $\alpha = 0.05$ , two-tailed. See text for observed  $p$  values.

Figure 3.6.4 – Cohort 2006



\* Significant at  $\alpha = 0.05$ , two-tailed. See text for observed  $p$  values.

## Part 4: Trends in College Attendance for the Class of 2005 Preuss School and “Comparison Group” Graduates: A Pilot Study

### Overview

This pilot study presents preliminary findings of research on college-going trends among 2005 Preuss School graduates who attended the school continuously since 7<sup>th</sup> grade and Comparison Group students who were part of the same lottery pool and attended San Diego City Schools during the same period, graduating in 2005. These are graduates from the population represented as Cohort 2005 in Part 3 of this report.

- 100% of the 31 Preuss graduates and 63% of the 19 Comparison graduates participated in this study, though repeated efforts were made to contact and interview as many students as possible.
- Participation was voluntary, and 2003-04 academic record data indicates that Comparison students participating in the research were, on average, somewhat closer to college eligibility than non-participants; given this apparent pattern of self selection, there is no reason to expect that Comparison Group performance would have been substantially better with the inclusion of non-participating Comparison students.
- A higher proportion of Cohort 2005 Preuss than Comparison Group graduates are attending four-year colleges in Fall 2005.<sup>12</sup> Even if we assume that the 37% of Comparison Group students who could not be reached are attending four-year colleges, the Preuss 4-year college attendance rates (90.3%) are higher than Comparison college attendance rates (78.9%): 42.1% of the nineteen graduating Comparison students are attending 4-year colleges, and another 36.8% did not participate in the study. 9.7% of Preuss School graduates in Cohort 2005 are attending community colleges, in contrast to 15.8% of the Comparison students.
- Preuss students submitted more UC and CSU college applications than Comparison students and received more acceptances, and were accepted at a lower proportion of the UC colleges they applied to than Comparison students.
- A higher proportion of Preuss School students made themselves eligible for UC and CSU colleges by taking the SAT I, and a significantly higher proportion of Preuss students took the SATII, however, based on self-reported scores, the Comparison Group SAT I scores were marginally higher.
- 100% of Preuss School graduates and 4 out of 5 Comparison Group students received funding for attendance at four-year colleges, and the average funding received by Comparison Group students was slightly higher.
- Preuss students more consistently received practical supports at their school such as academic counseling, SAT testing, SAT fee waivers, access to advanced courses and support in applying for college funding than did Comparison Group students.
- Preuss students consistently indicate their school’s mission is to have all students attend four-year colleges, while Comparison students more often describe the mission as graduating students from high school. Preuss offers a single course of study for all students, while

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<sup>12</sup> In this section of the report, Preuss and Comparison Graduates refers to students who were part of the original lottery pool, and attended either the Preuss School (31 students) or San Diego City Schools (19 students) continuously from 7th grade through graduation in 2005. In contrast, Part 1 of this report includes both the 31 Preuss Cohort students and 44 students who entered the Preuss 2005 graduating class after 1999-00, and were admitted outside of the lottery selection process.

Comparison students' comprehensive high schools provide more variety in courses and programs and the expectation of a wide range of student academic outcomes.

- In some cases, Comparison students were unfamiliar with college preparation requirements, and they did not always receive information about how to become college-eligible.
- Preuss students perceive their teachers and counselor as interested in their success and as caring and helpful; this is the case for some but not all Comparison students.
- The great majority of Preuss students are focused on attending college, providing a peer culture that supports college going. Most but not all Comparison students found friends who shared and encouraged the goal of attending college.

In addition to providing information on college-going trends, this pilot study suggests the value of future research on the education provided to Preuss and Comparison students through longitudinal research with students and graduates, to understand longer term outcomes and the factors contributing to students' success in college.

## Introduction

The report is intended to raise questions rather than provide definitive answers, offering an intermediate picture of high school graduates in the Class of 2005, focusing on those who entered The Preuss School as 7<sup>th</sup> graders in 1999-00, and those who were on the Preuss School waiting list in the same year. Insofar as the Preuss School's goal is to improve students' opportunity to enter and succeed in four-year colleges, a longitudinal study is required to fully assess the educational impact of the school; this report initiates such a study

The following pages report whether the Preuss and Comparison Group graduating seniors applied to colleges, where they were accepted, and which colleges they are attending. It provides some information on college eligibility at the time of graduation, the experiences shared by Class of 2005 seniors from Preuss and the Comparison Group and factors distinguishing them. By applying to The Preuss School students and their parents evidenced a pursuit of educational opportunities. A central question is the degree to which Preuss School adds substantively to this base of interest and motivation, or whether the Preuss students and the Comparison Group are indistinguishable upon graduation from high school. In addition to the Preuss and Comparison groups, the study includes some who left Preuss, their reasons for leaving, their reflections on their experiences, and their college plans.

Two significant caveats must be mentioned at the outset: The Preuss and Comparison groups are very small, and only a portion of the Comparison Group (63%) participated in the study. The characteristics of participating and non-participating Comparison students are presented on page 6.

The following pages include a review of research methodology, research findings, a comparison of practical supports offered to Preuss and Comparison students by their schools, and the school environment, including students' beliefs about their schools' purpose, and the perceived influence of school staff and peers.

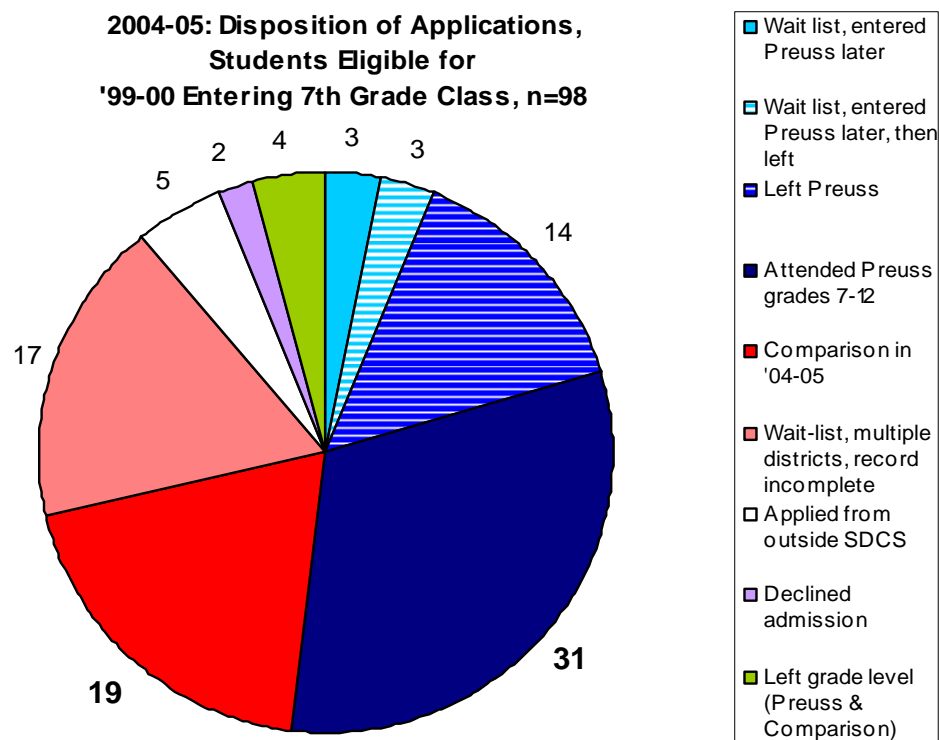
### **4.1 Methodology**

The study focuses on students who applied to attend 7<sup>th</sup> grade at the Preuss School in 1999-2000 and met the eligibility requirements of the school. Students were selected by lottery from among those eligible to attend, and students not selected were placed on a waiting list. When additional spaces opened at the school, lottery numbers were used to invite those next on the waiting list to attend the Preuss School; however, no waiting list students were accepted after 8<sup>th</sup> grade, and later entrants to this Preuss class were not part of the original lottery pool. Some students left the Preuss School between the 7<sup>th</sup> and 12<sup>th</sup> grades, and the research reported here included a few students who left the school. This report includes four distinct groups who were part of the same pool of applicants: Those attending The Preuss School

continuously, those attending San Diego City Schools other than Preuss continuously, and those who left The Preuss School; two students on the waiting list who attended schools outside the SDCS were also interviewed. The main research focus is on Preuss students and the Comparison group, with less emphasis on those who left the school or attended private schools or enrolled in other school districts. Nonetheless, repeated efforts were made to contact and interview as many students as possible in all these categories.

*Study Population: Inclusion Criteria.* There were 173 applicants to the Preuss School for the 7<sup>th</sup> grade class of 1999-00. Sixty-six of the applications were disqualified, and nine applications were incomplete. The chart below represents the remaining ninety-eight applications: A lottery determined which of the ninety-eight students were accepted to the Preuss School, and forty-six were placed on the waiting list while forty-five students were accepted to the Preuss School in the 7<sup>th</sup> grade class of 1999-00. Of the forty-five students accepted to The Preuss School, thirty-four students remained through 11<sup>th</sup> grade in 2003-04, and 31 remained through 12<sup>th</sup> grade in 2004-05. Of the forty-six students placed on the waiting list, nineteen attended San Diego City Schools from 7<sup>th</sup> through 12<sup>th</sup> grades, and twenty attended San Diego City Schools from 7<sup>th</sup> through 11<sup>th</sup> grade in 2003-04 and are called Cohort 2005 Comparison Group students in Part 3 of this report. Fourteen students in the original Preuss School class left the Preuss School before graduation, three wait-listed students were invited to attend in 2000-01 and remained through 12<sup>th</sup> grade, another three entered Preuss in 2000-01 and subsequently left, two students declined admission, and four left the grade level targeted for research. Five students (5%) were not matched with SDCS students, and contact information was not available for them.

**Figure 4.1.1**



*Study Participants:* A total of fifty students and seven parents were interviewed or responded to surveys. All thirty-one of the Preuss School seniors who attended Preuss from 7<sup>th</sup> grade through 12<sup>th</sup> grade were interviewed, along with one parent. Nineteen other students and six parents participated in the study: sixteen students and six parents were interviewed and three students responded to surveys.

*Research Period and Contact Methods:* Comparison Group contact efforts began in February of 2005 and continued through early September of 2005. The Preuss students were interviewed between June and mid-July of 2005. As detailed below, two contact efforts were extended to Preuss seniors, and seven attempts were made to contact Comparison seniors.

**Preuss Cohort 2005:** Students attending the Preuss School continuously between 7<sup>th</sup> and 12<sup>th</sup> grades were asked to visit their Advisory class one day during their lunch break. The CREATE researcher visited the class while the teacher was present, and explained the research project and provided packets of information for students and their parents. The Advisory teacher helped clarify the project for the students. Students were invited to write their phone numbers on a sign-up sheet if they were interested in being interviewed, and were given CREATE contact information. The interviews commenced soon after, and each student was given a \$25 incentive payment at the end of the interview. For the first few interviews the incentive consisted of a Target gift card, and later incentives were Scrip checks issued by UCSD in the amount of \$25.

About two-thirds of Preuss seniors provided contact information, and interviews with the sample of Preuss School seniors began. A few weeks later a second visit was made to classrooms, and all but one of the remaining seniors associated with the study indicated an interest in being interviewed and provided contact information. One student was absent from school both days, and this student was interviewed on one of the last days of school.

**Comparison Group:** Repeated attempts were made to contact forty-four students who had addresses on file with the SDCS District and were identified by the CREATE Research Group as part of either the Comparison Group or students who left The Preuss School from the target class. Seven contact attempts were made altogether. Given that contact with these students was not maintained in any way during the six years since they were denied admissions to the Preuss School, and contact was only initiated in the last half of their senior year while many were busy with college and job applications, it is not surprising that efforts to contact them were only partially successful. Since those participating in Comparison Group interviews are a small non-random sample of the Comparison Group, the information derived from interviews and surveys cannot be attributed to the Comparison Group as a whole.

The San Diego Unified School District did not want CREATE to contact students directly until the students expressed an interest in participating in the study. Therefore, District identification numbers of Comparison Group students were obtained from a database, and the ID numbers were provided to the Research and Reporting Department of the San Diego Unified School District<sup>13</sup>. The CREATE researcher took stamped envelopes containing project information to the Research and Reporting office, which attached mailing labels and mailed the envelopes to students and their parents the third week in February. Comparison Group students were invited to phone the CREATE office if they were interested in being interviewed or wanted further information, and were given the phone number and a stamped envelope addressed to CREATE. The letter to the Preuss and Comparison Group students was the same except for explanation of why they were being contacted; the Preuss letter stated they were contacted as members of the Preuss School, while the Comparison Group was told they were contacted because they had applied to or previously attended the Preuss School. They were offered a \$25 Target gift card as a post-interview incentive. A few replies were received, and the same letter was sent a second time in mid-March, prompting no further response.

A third letter was sent in mid-April, increasing the post-interview incentive to \$50 in the form of a Scrip check issued by UCSD, and changing the introductory letter. While the first two letters were addressed generically to graduating seniors ("Dear Students"), the new letter was personally addressed to each student, and focused on learning their opinions about their own high schools. The purpose of this change was twofold. First, it was recognized that both groups of students would be interviewed about their own high schools, while the original letter implied that Preuss students would be asked about their high schools, and the Comparison Group would be asked about a school they had not attended; the new letter gave a more accurate representation of the interview topics. Second, students might find their own high

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<sup>13</sup> We wish to express our thanks for the extensive help provided by the Research and Reporting Department at SDCS. The research could not have been conducted without their help.



school experiences more relevant than their registration with the Preuss School six years earlier. This mailing prompted further responses.

Next, the researcher suggested meeting with or contacting the students at or through their schools, and the Research and Reporting office agreed to send CREATE's invitational letters to the schools attended by Comparison Group students, along with a letter from the District explaining the project, asking the schools to distribute the letters and invite students to provide their phone numbers if they were interested. In early June, packets were given to the District to mail to the schools. Unfortunately, by the time the letters arrived some schools had begun their summer break. Efforts were made to phone the schools and learn if letters had been distributed. This effort produced two more interviews.

The success rate at this point was approximately a third, and CREATE decided to send brief surveys to non-respondents. The survey consisted of the first six questions in the interview protocol. The survey was sent on July 12<sup>th</sup>. Three people returned the surveys, and another three people returned the surveys and expressed an interest in the interviews. While two of those responding had not been contacted before (a new data search had identified three new names which later proved to be outside the Comparison Group), five others had been sent all earlier letters.

In mid August, another set of surveys was mailed to those not yet responding, along with an invitation to be interviewed. However, three additional ID numbers had been located in the database, and these three students were sent the survey and the interview invitation, as was one newly identified waiting-list student who had attended multiple school districts. The Comparison Group response rate was 63.16%. The final mailing was on September 1<sup>st</sup>, before Labor Day weekend, and elicited no further response.

The Preuss and Comparison Group seniors were re-contacted in late August and early September, to learn whether they were following the college plans they stated earlier. Some had already left for college, and the researcher spoke with a parent or guardian.

*Research Instruments:* Two research instruments were employed in different phases of the project, an open-ended interview protocol and an open-ended and multiple-choice survey. The interview protocol was used in interviews with the Preuss and Comparison Group students, and the survey was sent to Comparison Group students who had not responded to earlier invitations. The interview protocol drew on questions that have proven fruitful in other CREATE high school research projects and introduced additional topics. The survey consisted of the first six questions in the interview protocol, the content of which been pre-tested in interviews. Interviews with Preuss seniors and Comparison Group seniors and their parents were audio tape-recorded, and notes were taken during the interviews. Written surveys provided additional information from three Comparison Group members. In one case parents were interviewed by telephone, and written notes recorded the responses.

*Location:* The majority of interviews with Preuss seniors took place at the Preuss School, in a conference room or the library, and a few interviews were held at students' homes. Most interviews with Comparison Group seniors were held in their homes, and some took place in public libraries or school libraries. Interviews with parents took place at their homes, libraries, and their places of work.

*Limitations of the Study:* This was a pilot study, intended to gather information about how a larger study should be conducted in the future. Since the data are derived from interviews and surveys and the number of students in the samples is small, a very high response rate from both Preuss seniors and the Comparison Group is necessary for the results to be reliable. While the response among Preuss seniors is 100%, response from the Comparison Group is 63%, and it is not possible to estimate the answers the non-responding Comparison Group seniors would have given had they participated. However, it is possible to consider whether Comparison Group students participating in the study differ from Comparison Group students who did not participate. To this end, the Academic Performance Index Rankings of schools attended by participating and non-participating Comparison Group students, along with their completion of A-G courses and A-G subjects, their weighted and un-weighted GPAs, and their performance on 2003 English CST tests are presented below.

**Table 4.1.1**

	Mean API Ranking
Comparison participating	6.27
Comparison not participating	5.71

As can be seen in table 4.1.1, participating Comparison Group students attended schools with slightly higher mean Academic Performance Index rankings than did Comparison Group students not participating in the study. That is relevant because higher API schools are often found in more prosperous neighborhoods with a higher level of parent education, and students and parents may seek out high API schools to take advantage of their assumed educational resources.

There is a small difference in the mean weighted and unweighted GPAs of participating and non-participating Comparison Group students in 2003-04, and in the number of A-G courses passed, and the number of A-G subjects completed by 2003-04, and the average results are higher for those participating in the research. Those participating have taken on average 1.244 more A-G classes, completed an average of 1.655 more A-G subjects, and their mean unweighted and weighted GPA are .45 and .56 points higher respectively. There is a difference in performance on the 2003 English CST, and an independent samples t-test was significant,  $t(2.47)$ ,  $p=.024$ , and those participating in the study had higher CST scores ( $M = 382.4$ ,  $SD = 38$ ) than those not participating ( $M = 336.6$ ,  $SD = 40.6$ ).

A second limitation is the reliance on memory and self-report for Statistical Aptitude Test (SAT) scores. Both Comparison Group and Preuss students were asked their highest SAT scores and, in addition, records of SAT scores are available for Preuss seniors but not the Comparison Group. The Preuss students' stated and recorded scores were very close. Some students reported that they could not remember the exact scores received on the mathematics and verbal portions of the test; some provided a possible range and others were asked to guess. When students offered a range of scores, the highest score was used. If they did not recall their scores, they were invited to estimate, and their estimate was used. While all the Preuss seniors interviewed took the SAT I, one Comparison Group student did not take the test. While all the Preuss seniors took the SAT II, five of the twelve participating Comparison Group students did not take the test.

A third point is a caution about the interpretation of data. There are differences in the requirements placed on students at the Preuss School and at other SDCS, such as the Preuss School requirement that seniors take the SAT I and II, the requirement to apply to four-year colleges including UCSD and SDSU, and the requirement to apply for scholarships. Since these are requirements for Preuss students, they cannot be interpreted as reflecting differences in Preuss and Comparison students' interest in college. But it will be important to track the consequences of these policies: As a result of having fulfilled these requirements, do more Preuss students attend and remain in four-year universities?

## **4.2 Findings**

### **College Application, Acceptance and College Attendance in Fall 2005**

#### *College Attendance:*

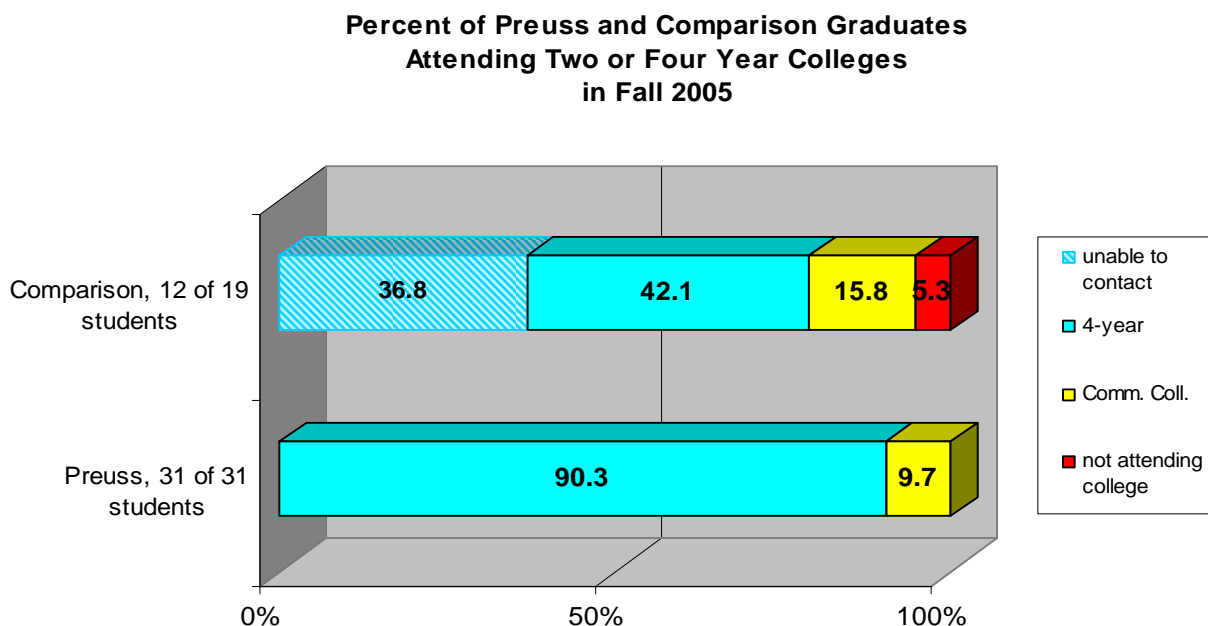
Figure 4.2.1, below, shows that a higher proportion of the Class of 2005 Preuss than Comparison Group graduates are attending four-year colleges in Fall 2005.<sup>14</sup> Even if we assume that all Comparison Group

<sup>14</sup> In this section of the report, Preuss and Comparison Graduates refers to students who were part of the original lottery pool, and attended either the Preuss School (31 students) or San Diego City Schools (19 students) continuously from 7th grade through graduation in 2005. In contrast, Part 1 of this report includes both the 31 Preuss Cohort students and 44 students who entered the Preuss 2005 graduating class after 1999-00, and were admitted outside of the lottery selection process.

students who could not be contacted are attending four-year colleges, the Preuss four-year college attendance rates (90.3%) are higher than Comparison college attendance rates (78.9%): 42.1% of the nineteen graduating Comparison students are attending 4-year colleges, and another 36.8% did not participate in the study. 9.7% of Preuss School graduates in Cohort 2005 are attending community colleges, in contrast to 15.8% of the Comparison students.

Considering only the Comparison Group students participating in the study (12 of the 19 Comparison students), we find 66.67% of Comparison participants are attending four-year colleges, compared to 90.3% of the Preuss graduates. 66.67% offers one possible *estimate* of the rate of four-year college-going in the Comparison Group as a whole; however, we can state with certainty the minimum and maximum college-going rate in the Comparison Group. If all the Comparison students whom we were unable to contact *are* attending four year colleges (the maximum possible attendance), the Comparison Group attendance rate would be 78.9%; if all students we were unable to contact are *not* attending four year colleges (the minimum possible attendance) the attendance rate would be 42.1%. The Comparison minimum, maximum and estimate are all substantially lower than the 90.3% recorded for Preuss graduates. Figure 4.2.1 shows the minimum and maximum rates, and graphically displays the fact that the maximum rate of Comparison attendance (the most generous assumption, which is represented by the blue and blue cross-hatch) is lower than the attendance rate among Preuss graduates.

**Figure 4.2.1**



There are few students in the two groups in this graduating class and a change in college-going status of one student can make a large difference in the proportions reported. A longitudinal study would provide valuable information about whether these patterns persist, or whether the two groups grow more similar or diverge further after the students' graduate high school.

All the Preuss seniors (100%) and all but one of the Comparison Group seniors participating in the study (91.7%) are attending a two or four-year college in Fall 2005, while the remaining Comparison Group senior plans to attend Community College in January. One senior in each group is considering an occupational alternative to college.

Table 4.2.1 considers the type of university students are attending: UC, CSU, private, other state, community college, and no college attendance in 2005. It shows that 35.5% of Preuss graduates are attending UC campuses, 41.9% are at CSU campuses, 9.7% are at private universities, 3.2% are at state colleges outside of California, and 9.7% are attending community college. Of the Comparison Group, 36.8% of the sample did not participate in the study, while 21.1% of the students are attending UC campuses, 10.5% are at CSU and another 10.5% are at private universities, 15.8% are at community colleges, and 5.3% are not attending college in Fall 2005.

**Table 4.2.1**

	Unable to Contact	UC	CSU	Private	Other State	Community College	Not Attending College	Total
<b>Preuss, 31 of 31 students contacted</b>		11 (35.5%)	13 (41.9%)	3 (9.7%)	1 (3.2%)	3 (9.7%)		31 (100%)
<b>Comparison 12 of 19 students contacted</b>	7 (36.8%)	4 (21.1%)	2 (10.5%)	2 (10.5%)		3 (15.8%)	1 (5.3%)	19 (100%)

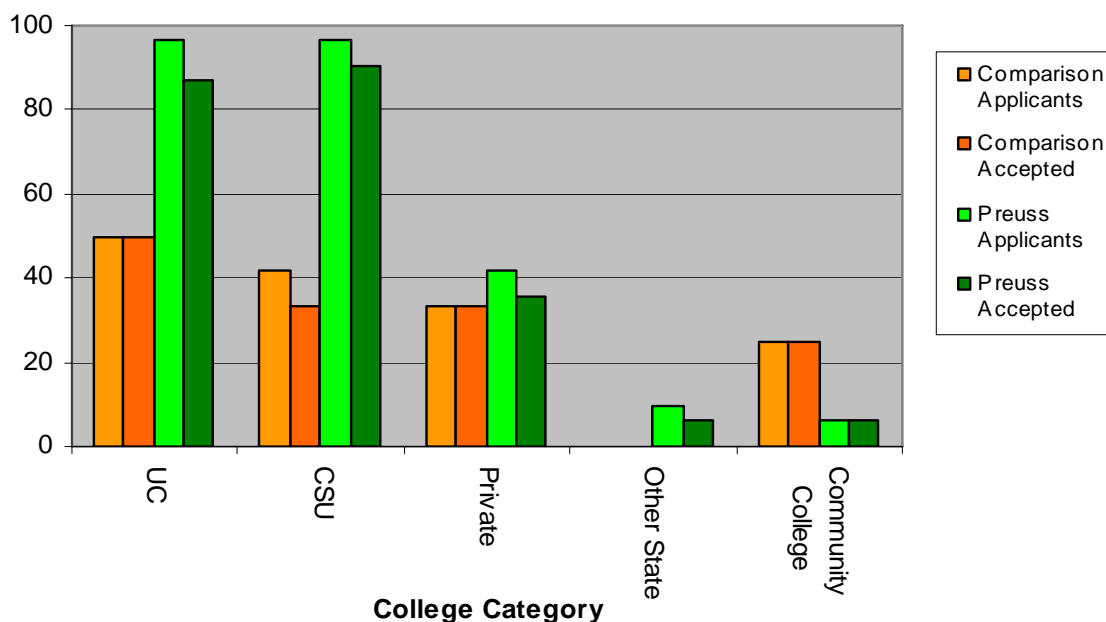
We have some information on the other students of interest to this study: Two wait-listed students who graduated from other school districts are attending community college in Fall 2005, though one has other plans beginning in January. Two of the fourteen students who left The Preuss School between 7<sup>th</sup> and 12<sup>th</sup> grades were interviewed, one is attending a UC and another plans to attend college in January. Two students were part of the initial application pool, were accepted at Preuss a year later and subsequently left: One is attending a private university, and the other is enrolled in a community college.

In the following pages, analysis is restricted to students who participated in the study, and the twelve Comparison students interviewed (63% of the Group) are compared to the full set of Preuss Cohort 2005 students.

Figure 4.2.2

**Percent of Seniors Applying to One or More College, by Type, and Accepted in at Least One College in that Category**

Preuss n=31 of 31, Comparison 12 treated as full sample



**College Applications and Acceptances:**

Figure 4.2.2 shows the percent of students interviewed who applied to and were accepted at a UC, CSU, Private, other state and community college. Figure 4.2.3 shows that half the Comparison students participating in the study applied to at least one of the UC campuses and were accepted in at least one of the UC campuses; five (42%) applied to a CSU and four (33%) were accepted in at least one CSU college. It shows that 97% of Preuss students applied to one or more UC campus and 87% were accepted in at least one UC campus, while 97% applied to one or more CSU and 90% were accepted in at least one CSU campus. 42% of Preuss and 33% of Comparison students applied to private universities, and 35% of Preuss and 33% of Comparison students were accepted in at least one private university. Comparison students applying to one or more UC or private university were generally accepted in at least one of the colleges applied to; Comparison students may have applied to types of colleges in which they had a better chance of being accepted. A higher proportion of the Preuss students applied to multiple UC and CSU campuses, and most of them were accepted in at least one UC and one CSU. Preuss students applied to more types of colleges, they were accepted at a lower proportion of the college types they applied to than Comparison students, but overall more Preuss students received an acceptance from a UC and a CSU college, and a similar proportion were accepted at private colleges. Comparison and Preuss students may have been pursuing different strategies.

Figure 4.2.3

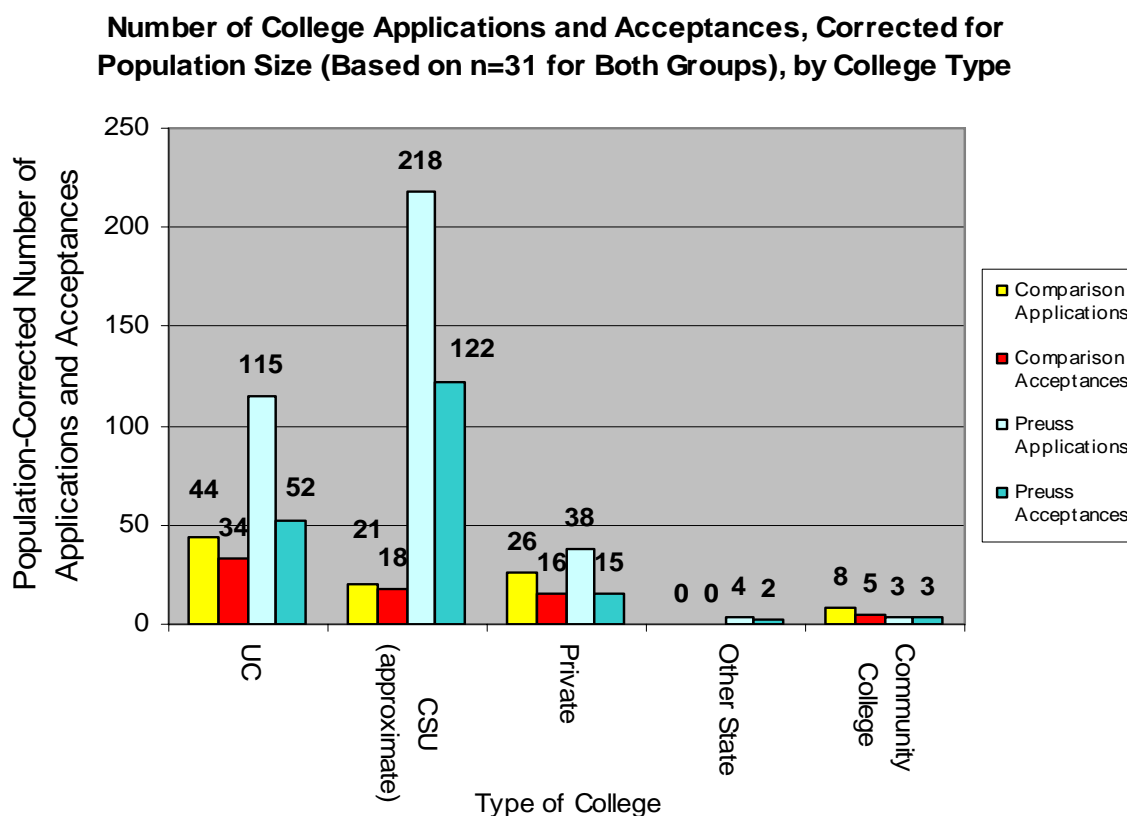


Figure 4.2.3 shows the full number of applications submitted and acceptances received so, for example, students applying to four UC campuses are counted four times; since 31 Preuss students and 12 Comparison seniors were interviewed, the Comparison Group applications were multiplied by 2.5834 to correct for group size. Preuss students, collectively, applied to 115 UCs and approximately 218 CSUs, and 38 private schools, and were accepted, collectively, at 52 UCs, approximately 122 CSUs, and 15 private schools. Comparison students, collectively (and corrected for group size), applied to 41 UCs, 21 CSUs, and 26 private schools. They were accepted at 31 UCs, 18 CSUs, and 16 private colleges. The data used for these charts comes from interviews and not campus records data, and Preuss students sometimes gave inexact information about the number of CSU applications submitted, though their reporting of UC and private and state school applications and all acceptances and rejections were stated with greater certainty and are more reliable.

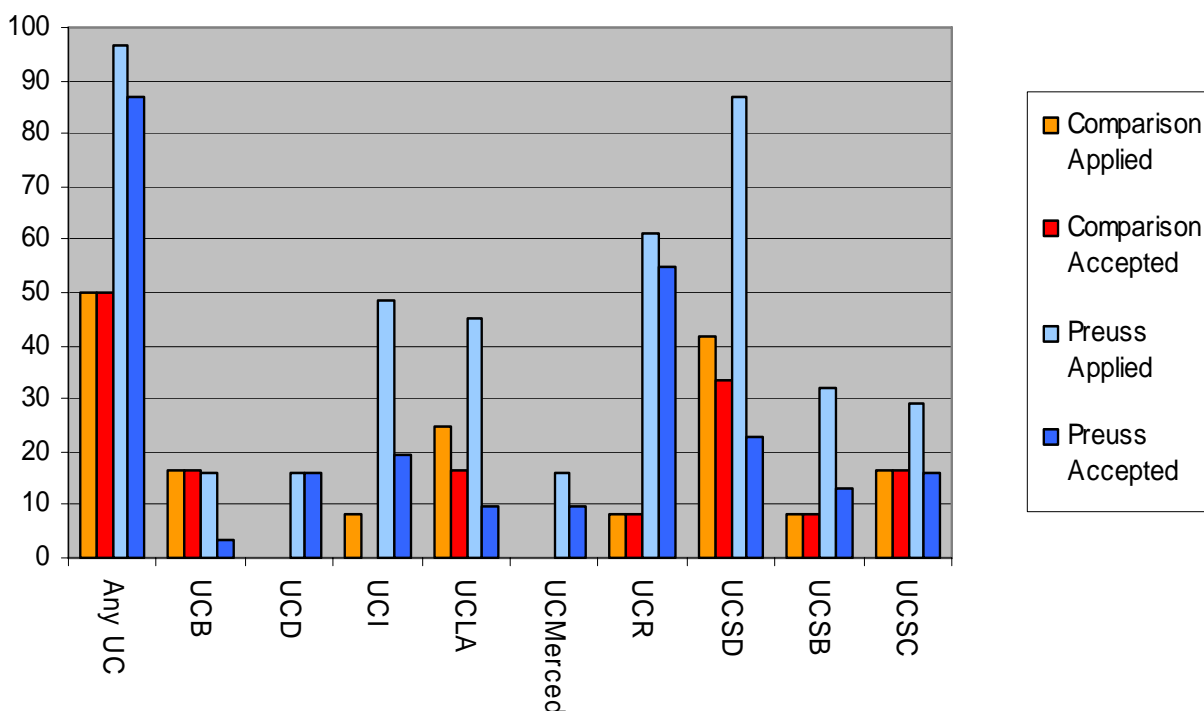
Figure 4.2.4 considers only the University of California applications within the Preuss sample and the sub-sample of Comparison Group students participating in the study. It is of interest because some campuses, such as UC Merced and UC Riverside, are believed to accept students with a broader range of academic credentials than UC Berkeley, UCSD, and UCLA, where there is more competition for entrance. A higher proportion of Comparison students were accepted at UCB, UCLA, and UCSD, though a nearly equal proportion of Preuss students applied to UCB, and a higher proportion of Preuss than Comparison students applied to UCLA and UCSD. About 60% of the Preuss seniors applied to UC Riverside and about 55% were accepted; one Comparison student (8%) applied and was accepted at UCR.

A substantial proportion of the Preuss students were accepted at only one of the UC campuses, and received their single acceptance from a UC campus with less competitive admissions standards. The earlier figure 4.2.3 showed that 87% of Preuss students were accepted at a UC. However, 22% of the Preuss graduates (7 of 31 students) were accepted only at UCR or UC Merced, and not at any other UC

campus, despite applying to other UCs. One Comparison student was accepted at UCR and not at another UC (1 of the 12 students participating in the study, or one of the 6 students accepted at a UC campus).

**Figure 4.2.4**

**Percent of Seniors Applying and Accepted, UC Campuses**  
**Preuss n=31 of 31, Comparison n=12 of 12**



The next issue to consider is the average number of applications to the University of California by Comparison and Preuss students and the average percent of applications accepted. Of those students applying to 4-year colleges, 30 of 31 Preuss students applied to attend a UC campus, as did 6 of 8 Comparison students applying to 4-year colleges. Of those applying to a UC campus, the 30 Preuss UC applicants submitted 115 applications (a rate of 3.8 per student) and the 6 Comparison UC applicants submitted 17 applications (a rate of 2.8 per student). Preuss students were required to apply to UCSD, and when the UCSD application by Preuss students is discounted, we can see that while a higher proportion of Preuss students applied to attend University of California campuses, the number of applications submitted by those students seeking entrance to a UC campus was comparable.

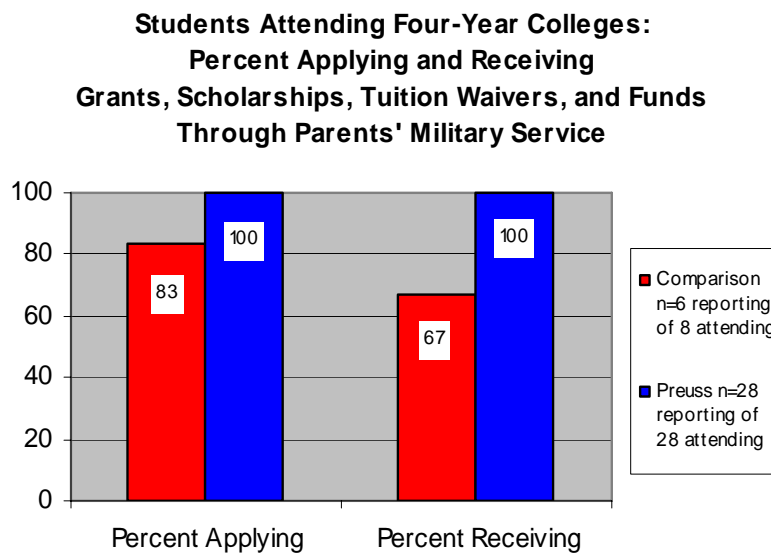
Of the 17 Comparison applications made to UC campuses by six Comparison students, 13 applications (76.5%) were accepted; of the 115 Preuss applications, 52 (45.2%) were accepted. As noted earlier, Comparison students may have applied to campuses where they had a better chance of being accepted. If we eliminate the required UCSD applications for Preuss students, their UC acceptance rate climbs to 51%.

**Financial Resources for College Attendance: Receipt of Grants, Scholarships, and Tuition Waivers**

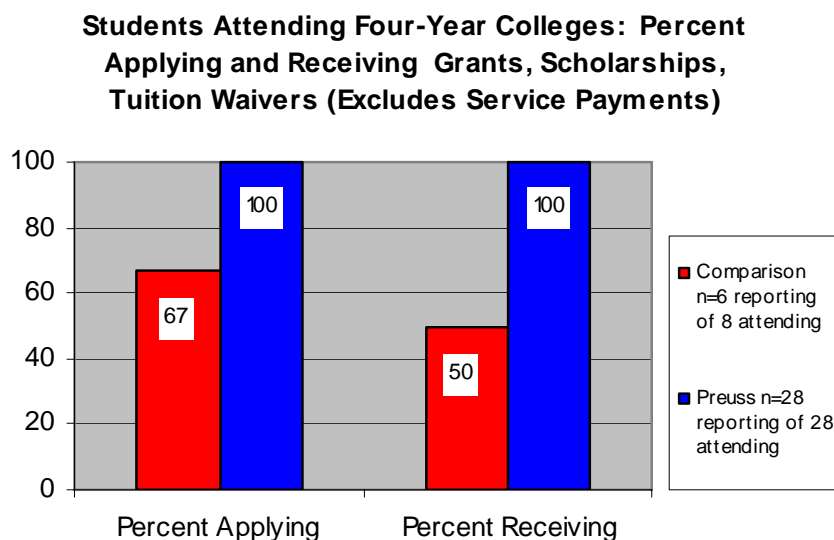
Information about financial resources for attending four-year universities was available from the thirty-one Preuss seniors in the study, and from ten of the twelve Comparison Group students; surveys did not request information on funding.

The Preuss School made a significant effort to see that students had funds to attend college and one grant was given to all Preuss graduates attending four-year universities. As a result, all Preuss graduates attending four-year universities received some support. Twenty-one of the twenty-eight (77.7%) Preuss and 50% of the Comparison Group seniors attending four-year colleges received grants and scholarships from other sources. While all Preuss seniors applied for funding, two of the six Comparison Group students attending four-year universities did not apply for grants or scholarships for reasons of eligibility or need. Students in both groups received further support through college tuition and fee waivers, benefits based on parents' military service, and so forth. Fully 67% of Comparison Group students have college funding support other than loans and personal or family resources, as do 100% of Preuss seniors in the study. Figures 4.2.5 shows the percent applying for and receiving funding from sources including tuition waivers and parents' military service, while 4.2.6 excludes parents' military service. The average amount of funding received by the two groups is similar, with a slightly higher amount received by Comparison students.

**Figure 4.2.5**



**Figure 4.2.6**





## College Eligibility

Significant factors affecting college eligibility, (i.e. grades and completion of A-G course requirements) are tracked through 11<sup>th</sup> grade for these students using academic records data in Part 3 of this report. Administrative records data for the 2004-05 year were not available until after this report was produced. Rather than relying on self-reporting of cumulative GPA from Preuss students and the subset of Comparison students participating in the study, it has been decided to leave this information until the 2006 report. In contrast, the results of Scholastic Aptitude Tests taken by Comparison Group students are not included in San Diego City Schools academic records and are not readily available from other sources, and can only be learned by asking the students. Therefore, this section relies on students' self reports of Scholastic Aptitude Test-taking and test scores for the 2004-05 year. Students sometimes did not remember their exact SAT scores, and were asked to provide approximations. The Preuss School collected SAT scores from The College Board, and the SAT records were compared with students' reports; in general, the students' reported scores were similar to scores recorded by The Preuss School.

## SAT I and SAT II Testing

SAT I and II test-taking is a requirement for application to many colleges, and SAT scores are often used to determine eligibility. This section reviews the proportion of students who took the SAT and compares their scores. While students were often able to provide an approximate composite SAT I test score, they were less certain about the scores on the math and verbal subtests comprising the composite score; therefore, a comparison of SAT I subtests is not provided. Students were even less certain about their SAT II scores; here the majority of Preuss students recalled the subject they took but not the scores, while the Comparison students attending college reported scores. SAT II scores provided by The Preuss School are used when students did not recall their scores, along with Comparison Group students' self reported SAT II scores. Because of these factors, results should be interpreted with caution.

Figure 4.2.7 shows the percent of students participating in the study who took the SAT I and II. The Preuss seniors included in the study took the SAT I and SAT II, as required by the school. Of the twelve Comparison Group students providing information, 11 of 12 (58% of the full sample) took the SAT I, and 7 of 12 (37% of the full sample) took the SAT II. A Chi-Square test was performed to consider the relation between the Preuss and Comparison group with respect to the rate of SAT II test-taking. The relationship between these variables is significant,  $\chi^2 = (1, 19) = 14.6, p < .01$ .

**Figure 4.2.7**

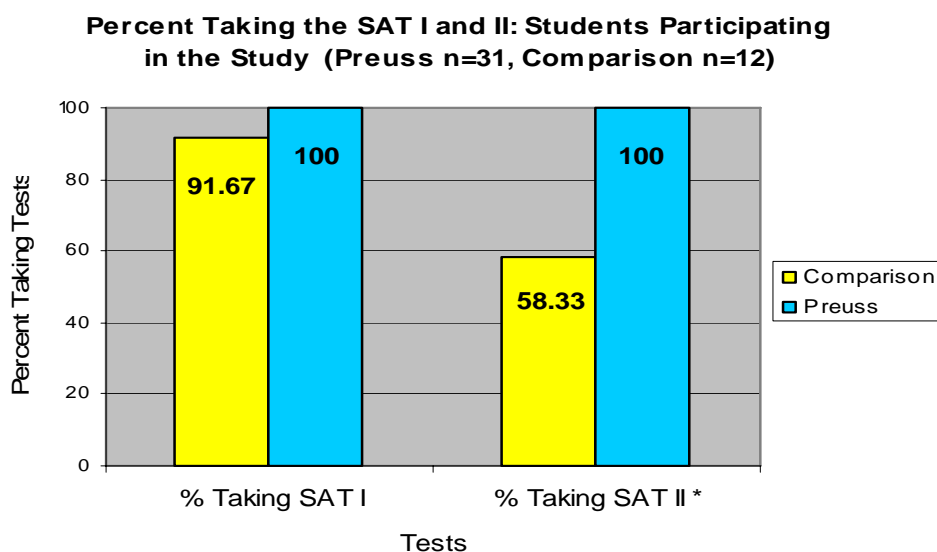
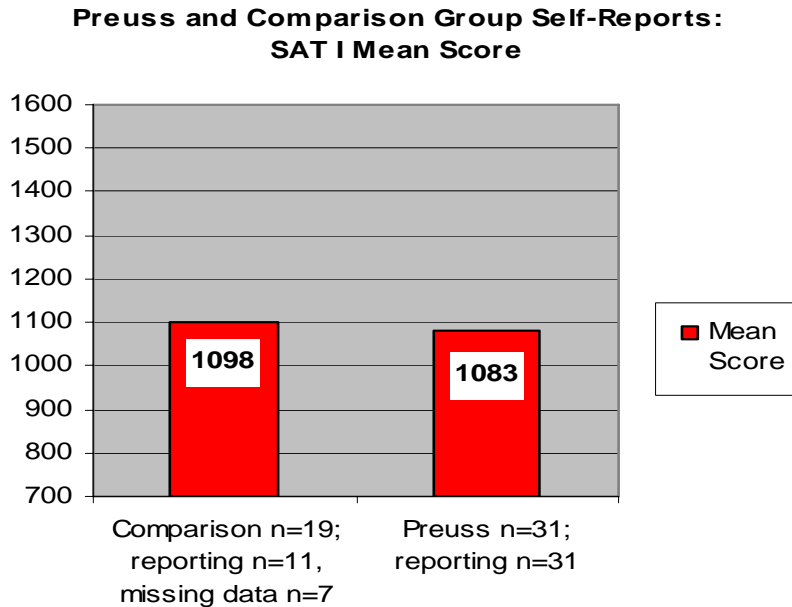


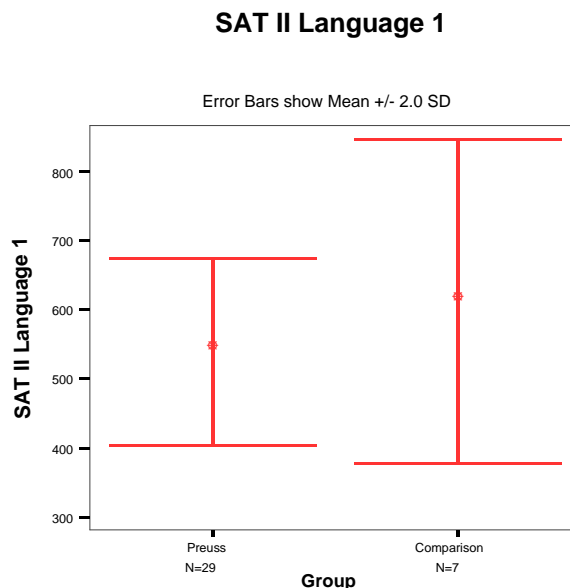
Figure 4.2.8 displays mean SAT I scores for those taking the test. Since we used self reports for the Comparison students SAT I scores, self-reported data is also provided for the Preuss students.

**Figure 4.2.8**



The seven Comparison Group students not taking the SAT II explained that they did not need them for the colleges they planned to attend. One Comparison Group student had not heard of the SAT I or II, which is worthy of note. Preuss students performed better on the SAT II Spanish test, and Comparison students had higher scores on Language 2, and on Math 1 but not Math 2, but in general there are too few Comparison Group cases to provide clear patterns. Figure 4.2.9 shows the mean and two standard deviations from the mean for the SAT II Language 1 scores, and Table 4.2.2 provides the numbers. There are only seven Comparison Group scores and, as can be seen below, the range of Comparison scores is wider, particularly at the upper end. The Comparison Group sample is small and self-selected, which makes tests for statistical significance inappropriate.

**Figure 4.2.9**



**Table 4.2.2**

SAT II Language 1 Scores			
Group	N	Mean	SD
Preuss	29	538.62	67.765
Comparison	7	611.43	116.823

### **4.3 Student Choices and School Environment**

This section provides data from interviews with students concerning their reasons for attending college, the characteristics of their schools, and the schools' social environment with respect to pursuit of the college-going goal. It does not discuss the *educational* environment at the schools beyond the social and organizational features supporting education.

#### **4.3.1 Students' Reasons for Attending College**

Why do graduates of the Preuss School and Comparison Group want to go to college? Many students described their observation or experience of financial hardship, and their belief that college will give them a better chance of establishing a good life for themselves and their families. In many cases they saw their parents take multiple and physically demanding jobs to maintain a family. Personal traumas such as the death of a parent added to some students' understanding of the consequences associated with financial lack. Many students said that it is their parents' dream to have them attend college, and parents found opportunities for them and pushed and encouraged them, and they want to make their parents proud. Some said they want to be the first in their families to attend college, and to change the family's future course. Several students had taken jobs at some point, and became aware of how little minimum wage jobs provide, and this motivated them to pursue a course enabling them to earn more than minimum wage. A number of students stated that a college degree is necessary to obtain jobs earning more than minimum wage, and a couple said this is especially so with minorities. In addition to these important social and financial reasons for attending college, a number have personal dreams about the careers they want: An architect, a physicist, a scientist studying earthquakes, cognitive scientist, anthropologist, news anchor, criminal justice attorney, film director, writer, and businessman. One student said that his only real fear is not being able to become who he wants. Other students were less settled on specific career goals and wanted to explore their options. Preuss students more often mentioned financial reasons for attending college, while Comparison students generally emphasized both financial concerns and career interests.

##### **4.3.1.1 Choice of Community Colleges**

This section provides an overview of the reasons students decided to attend community colleges rather than four-year universities. Six Preuss and Comparison students interviewed are attending community college, another student plans to attend in January, and two waiting-list students (i.e. they were part of the lottery and attended other school districts) are attending community colleges. Among these students, some applied but were not accepted at four-year colleges, others applied exclusively to community college, some were accepted at a single four-year university and were subsequently unable to attend, and one was accepted at multiple universities but decided to attend community college. There was usually more than one reason students made the choices they did. As presented below, the cost of attending a four-year university influences students' assessments of whether they can afford four-year colleges, which colleges are most practical, and whether it is worth the effort and cost to make themselves eligible. The ability, or anticipated ability, to receive grants and scholarships and a range of family considerations can also be important, and school location and academic and athletic programs played a part in some decisions. Aside from college admissions administrators, those involved in decisions include the students, their families, counselors, teachers, coaches, and friends.

Some reasons students are attending community colleges are common to both groups, and others are not. While the Preuss students took the SAT I and II, two Comparison students had limited eligibility

because they had taken the SAT I but not II; one Comparison student and one waiting list student in another district had taken neither. The inability to receive fee waivers and retake the test multiple times figured in one decision along with anticipation of college costs and a discouraging SAT I test result, another student intended to apply to a college that does not require the test, another student had not heard of either test, and a waiting list student was uninterested in both college and the SAT. SAT test-taking is a Preuss School requirement and students are able to take and retake tests without incurring too much expense. Preuss students dealt with college funding and location issues after attempting to become eligible for the University of California and California State Universities while some Comparison students did not make themselves eligible for reasons of college funding.

College costs played a part in a decision about what kind of school a student would attend (two or four year), and where to attend college (near home or in another city). Those who did not receive grants or tuition waivers for college were in some cases unable to take advantage of opportunities to attend college. Factors including family income and citizenship can make students ineligible for government grants. These Preuss students applied to multiple colleges and one had multiple options; these Comparison students applied to a single four-year or community college and had limited options.

Concern about family needs played a role in some decisions about where to attend college and whether students would make themselves eligible for universities. Concern related to the care of parents, grandparents, and younger siblings, and whether the student was sufficiently mature to leave home and wanted to leave. Among Preuss and Comparison students, family considerations sometimes created dilemmas for those not accepted at local schools, as they had to decide between leaving home and possibly contributing to family difficulties, and postponing the goal of attending a four-year university.

Athletic programs played a part in decisions about which colleges to attend, and associates of a community college program held out the possibility that training with their program would enable two students to receive full scholarships at four-year universities. The community college did not provide funding to attend the community college, but promised to provide athletic training that would offer later opportunities. It is not known whether the representation about scholarships at four-year universities was accurate.

There were a couple of cases in which students were not motivated to pursue further education, though some were capable academically. In other cases students were strongly academically motivated, but their pursuit of educational goals was temporarily derailed by family issues that took their attention from school or changed the practical dimensions of their choices. This last pattern emerged in Comparison Group interviews, but there is no reason to assume it could not occur among Preuss students.

Who is involved in decisions about what kind of college students will attend? According to the students, decisions are influenced by their own perspectives, and their families, teachers, counselors, coaches and peers. One Comparison student described reaching a decision point about whether to attend community college or apply to four year universities, and the counselor endorsed the family's view that attending community college was "smart." The advice might have been different at Preuss.

#### **4.3.2 School Characteristics and Practical Supports**

This section briefly covers Academic Performance Index rankings and school size, and compares practical supports provided to students

##### **Academic Rankings: Schools Attended by Comparison Group and Preuss Students**

The average Academic Performance Index Ranking of Comparison students' schools are lower than the Preuss School API. Two Comparison students attended schools with the same API Ranking as Preuss, and six of the nineteen Comparison students attended schools with API rankings of eight or more. The API Ranking measures the general academic performance of the school relative to other schools in California, as measured in standardized tests.

**Table 4.3.1**

<b>API Ranking</b> Preuss School and Mean for Comparison Group Schools	
<b>Group</b>	<b>API</b>
Comparison School Mean	6.055
Preuss School	10

### School Size

The Preuss School has a small student population compared to schools attended by Comparison seniors. In 2003-04 there were approximately 766 students attending Preuss School, and the average school enrollment at Comparison students' schools was 2249. The figures come from the California Department of Education's website. The small school size was mentioned by a number of Preuss students as contributing to the "family" character of the senior class.

### Practical Supports Provided to Students

Policies of the Preuss School are designed to provide students with the practical support and information they need to become eligible for four-year universities, especially colleges in the UC and CSU systems. The courses offered by the school are college preparatory and Advanced Placement and fulfill the University of California's A-G requirements, and tutoring sessions are offered after school and on Saturdays. Students are required to take the SAT I, SAT II and the ACT, and generally receive fee waivers or discounts for SAT tests. Students are provided with information about colleges and scholarships, and are required to submit applications to multiple colleges and apply for several scholarships. They practice SAT I tests questions and apply to colleges and scholarships during their Advisory Class, and students are offered advice and help by counselors and teachers. These practical supports are provided to all students whether or not they express interest, and whether or not they wish to fulfill college eligibility requirements. To what degree are the same supports offered to students in the Comparison Group? By and large, all the supports were offered to all Preuss School students, though the amount of support given to each student may differ, while Comparison students generally received some but not all these forms of support.

*SAT.* All but one of the twelve Comparison Group students took the SAT I and the remaining student had not heard of it. Five Comparison Group students, under half of those contacted, did not take the SAT II; the SAT II is voluntary for Comparison Group students but required of Preuss students. Four Comparison Group students reported the test was not needed for the college they would attend; one was in private university and another planned to attend a private university at the time of the test, one was attending a CSU campus, and another was attending a community college. Among the four students interviewed who left The Preuss School, three took the SAT I and one of them took the SAT II in addition. Of the two students graduating outside the District who had not attended The Preuss School, one took the ACT instead of the SAT I and did not take the SAT II, and the other student took neither the SAT I or II.

*Fee Waivers.* The Preuss School as a whole is designated for the Free and Reduced Price Meals Program, and Preuss students generally qualify for fee discounts or waivers for the SAT tests. One consequence of the fee support is that students are able to take the tests more than once without incurring significant expense. Three Comparison Group students received fee discounts or waivers and five others did not seek them because family earnings made them ineligible. For one student ineligible for a waiver, the fee was a disincentive to retake the test, as the family's financial resources made cost an important consideration.

*Advanced Courses.* Students at the Preuss School are offered academic courses meeting college eligibility standards, and are offered a variety of Advanced Placement courses. Were advanced courses available to the Comparison Group? Two Comparison students were part of the International Baccalaureate program and completed a rigorous course of study, another was in the Seminar Program at a high-API school, two took several AP classes, one took a single AP course, and two others took none. For the students who took no AP, one attended a school offering Advanced Placement and Honors

courses and took one or two honors classes, and the other's school did not offer advanced classes although the student attended a community college class during high school. For one Comparison Group student, it was not simple to learn about the availability and importance of advanced classes or gain access to them.

*Academic Counseling.* Preuss School students are provided with advice and guidance about colleges, scholarships, and college preparatory courses. This occurs through monthly newsletters, in meetings with the Counselor, in informal interaction with teachers, and during Advisory classes which are held once a week. The majority of Preuss students indicated that the counseling they received was thorough and personal, and most said they were given a great deal of help and guidance. They were made knowledgeable about requirements, and the coursework was planned to help them meet or surpass college entrance requirements. Is similar guidance offered to the Comparison Group students? With a few notable exceptions, Comparison Group students who had the advantage of counseling described the help they received as sufficient rather than abundant. Some had to seek it out, and one student said "you have to ask; they won't put their foot first." Another said "it's there if you want it." At a low API school guidance was not (from the student's perspective) part of the administrative plan, but was offered on an individual basis by teachers to students; this student considered himself a beneficiary of teachers' guidance and encouragement, while a former Preuss student at the same school observed that help was given to some students and not others, and this student received little help. Two students at another school believed that little guidance was offered unless the student asked and even demanded it. A student attending an alternative school said goals focused on high school graduation.

*Tutoring.* Preuss offers after-school and Saturday tutoring sessions to students who seek it, and also directs students who are having trouble with their grades to attend Saturday tutoring sessions. Preuss seniors included many who had attended the after-school or Saturday tutoring, and most said the tutoring made a difference in their performance. One student said he regularly attended math tutoring before tests. Tutoring was also offered at high schools attended by Comparison Group students and, while three indicated they had performed poorly in math, only one attended tutoring. These students were reluctant to stay after school because of transportation and family obligations, though one attended lunch-time tutoring.

*College Funding.* Preuss students are provided with information about grants, scholarships, tuition waivers and college loans in their Advisory classes, and the counselor sends monthly newsletters about funding opportunities. Students are required to apply, and are given guidance and the time to apply during Advisory classes. One student was proud to have submitted twenty scholarship and grant applications and secured the support to attend college. In addition to requiring students to apply, the administration works to raise awareness of the school among potential benefactors, and some of that effort goes towards scholarships and grants to college-bound seniors. One Comparison Group student received considerable help in applications for college funding, and the counselor offered suggestions and reminders, and the school submitted the Calgrant applications on behalf of the students. A summary of college funding received appears in section 4.2, however only a portion of Comparison students were interviewed and two students participating in this study and attending university were not interviewed about funding.

#### **4.3.4 School Social Environment with Respect to Education**

How do students perceive the practical support they receive and the goal or mission of the school? This section presents students' perception of their school's mission and social environment, including the influence of teachers and counselors, and peer influence. Students' perception of the educational environment is not a central focus of this discussion.

##### **School Mission or Goal**

Students were asked whether their high school has a goal or mission and, if so, to describe the mission. The Preuss seniors were fairly uniform in stating that their school's mission is to help students attend four-year colleges, or to help underrepresented students enter colleges and prepare them for a successful life. Comparison Group students more often said their school's mission is to help students graduate high school. Surprisingly, even students attending high-API schools did not see college eligibility as their

school's mission. One said "if you tell them your interests they'll really try and help you, but you have to show the interest first, they won't put their foot first " Asked specifically whether their school prepares students for college, the Preuss students believed it helps them get into college, and hoped it would prepare them for college courses.

Comparison Group students said help "is there if you want it." The view seemed to be that their schools help students stating their interest in college and those actively seeking to learn and fulfill eligibility requirements, but college is not held out as a general expectation, nor is information offered to those who do not ask. At some schools staff visited classrooms and discussed scholarships, and fliers, announcements, meetings, and assemblies made information available. The International Baccalaureate program offered at one school was seen as making it easy for students to attend college, providing a clear program of study and high expectations. A charter school attended by a student outside the District has college preparation as its goal, and the student attending believes it does make students ready to attend university. Here is the question and some student responses:

"Does your school have a goal or mission? If so, how would you describe it?"

### **Preuss School**

The predominate theme in student responses identified the school's mission as helping students attend four-year colleges. A second theme reflected students' awareness of the social motives associated with the Preuss School, and a third theme dealt with education itself.

#### *College-going:*

To have all students graduate and get into college.

To prepare for college and give them the right classes needed to get into four-year university.

#### *Social Goals:*

To bring more minorities into the UC system, or get them into college.

To apply to UC schools, to be first in your family to attend a four-year school.

To help underprivileged students get into four-year institutions.

#### *Education versus College-Going:*

Get everyone into college. In a way, it's a good goal – but maybe there should be more about being interested in a subject.

### **Schools Attended by Comparison Group and Other Waiting List Students**

The predominate theme expressed by Comparison students is that the goal of the high schools is to help students graduate high school, while college preparation is provided to those who seek it. A secondary theme sees the school's motives as seeking autonomy to create their own educational programs separate from the School District, and the third theme describes education itself as the school's goal, along with invitations to prepare students for college.

#### *High School Graduation:*

To graduate high school.

For the school as a whole, to get as many to graduate high school as they can

For IB students, to get you into a good school, a university rather than a junior college.

The goal is to have everyone graduate. To go to junior college or university, but mainly to graduate high school. If you don't ask about college, they don't tell you.

Some teachers have aspirations for their students but the school as a whole is indifferent to it. I don't think the administration is doing their part to help the students. It's noticeable that they're not expecting much out of the students. Teachers expected from us, but the administration didn't. It's up to the students themselves, if they want to do well. If you want to go to college, you can. But if you're on the fence about it there isn't much to push you toward college.

*School Autonomy (Two Schools):*

They like having the highest test scores; they're all about keeping the test scores up. They want to be autonomous from the District.

They focus on high test scores so the school can teach what it wants.

*Education:*

The goal is to aim high. The school's mission is to educate. It does make it easy for people who want to attend college, by providing information, inviting seniors to sessions, and giving them questionnaires about their interests.

A waiting-list student attending a different school district said "the mission is to get high test scores. It's also to have high attendance so they can get money. Those are the missions." And a student who left The Preuss School said the mission of their current school was "to get you out of there – to graduate."

Some Comparison Group students sought out schools and programs that, like Preuss, offered opportunity, and it is not surprising that those applying to attend Preuss would continue to pursue the college goal after admission to Preuss was denied. Two Comparison Group students attended high API schools in neighborhoods across the city from their homes and took long bus rides each day to attend, as did a waiting list student. Another two students joined the International Baccalaureate program, selecting it because of its academic reputation. A student attending a low-API school in his neighborhood sought out advanced placement courses. Comparison students, more than Preuss students, participated in summer programs like Upward Bound and COSMOS and CHUM and People to People.

What other factors might contribute to students' college attendance and academic performance outcomes? Two that are believed important and were inquired about in interviews are students' sense that teachers and staff care and are willing to help them, and the influence of peer groups.

*Influence of Teachers and Counselors*

Most Preuss students and some Comparison Group students expressed a belief that specific teachers and administrators care about them, encourage and offer them extensive help, and want them to succeed. The word "personalization" is used in sociological studies of education to refer to this complex of influences.

Preuss School interviewees said that help is available to students, and it was extended to them in personally significant ways by the school counselor and specific teachers and coaches. Providing support is a policy of the Preuss School and part of its design; at other schools supportive relationships may depend on the number of students a counselor has, and may additionally spring from personal affinity or the individual policy and attitude of a teacher, counselor, coach, or administrator. One student said their sibling at another school was surprised at the degree of support Preuss students receive, while they experienced nothing similar at their school. However, a couple of students who left the Preuss school did not describe receiving this kind of support at Preuss, though two said Preuss provided them with more information about college requirements than did the schools they subsequently attended. Several Preuss students viewed the broader administrative structure of the school less positively, as preoccupied with public image and overly focused on recruiting students to UCSD, and insufficiently interested in keeping good teachers at the school.

Four of the nine Comparison Group students interviewed noted positive experiences with counselors and teachers; one described a teacher as a friend and advisor, another was on a first-name basis with a



counselor who greeted her in the hall with encouragement and reminders about college and grant deadlines, and the third plans to visit more than one teacher. Having a connection with a teacher or counselor and being treated as someone who can succeed made a difference for the students. All the interviewees were asked what engaged them in education, and one Comparison student answered “my teachers.” He described one teacher who “makes a point to get to know the students,” adding that he’s someone “who’s there for you more than the hour you have him. Someone you can go to if you have a problem. It really was just him being there that helped the most.” The help students received was often practical, for example reminders about scholarship deadlines, pointing to educational opportunities, and listening as a student talked about situations with peers, teacher, and family, but the importance of these relationships went beyond their practical significance and affected students’ perception of the school environment. Similarly, a Preuss student described a favorite teacher who helped make the school a positive environment: the student was “having a bad day” and the advisory teacher noticed and invited the student to spend lunch hours in her classroom whenever she wanted.

One Preuss School student said the counselor was “like a second mom” and one said she likes to impress her and another said he wants to do well and “make her proud.” One student said “everyone here, they take care of you.” Another said it’s “like a small family, really personal – you’re not another face in the crowd.” And another said “they actually care whether we succeed or not. We can go to teachers at any time and ask them for help or talk to them about anything. They actually care about us here.” Another said it’s a “good school because of the way it’s structured. The main motivation is to get you to college, and you have people who really care – the way they interact with you, you know they do.” The names of particular teachers came up repeatedly as being helpful, supportive and encouraging, and students noticed and were disappointed when their favorite teachers left.

In contrast, two Comparison Group students received little support from teachers or administrators; one attended a school where expectations were, by design, minimal, and the other attended a school where help was not always offered to students bused into the school unless they demanded it or were “hand picked” as deserving; both these students struggled. Their parents and friends knew virtually nothing about schooling or college, and these examples suggest the importance of school supports for families unfamiliar with education. The students came from immigrant families from different continents, and their parents had minimal education.

An issue that is distinct from support is whether students are caught in the excitement of learning and find subjects and classes that engage their interest and energy. Three Comparison Group students and a waiting list student in another district found this spark at university summer programs and school courses in science and literature. One student, for example, said she “loved” her high school physiology class, and described how she mastered it. To some extent, these students were describing both their interest in subjects and their sense that they have competencies and talents recognized by others.

Several Preuss School students expressed similar interest in courses and subjects, but there may have been less excitement and sense of discovery than was expressed by some Comparison Group students. A phrase that came up repeatedly in interviews is that The Preuss School is “challenging,” although it was never clear whether this challenge referred mainly to the amount of work and time taken by school; it was not offered as a positive comment, or as something that had tested and proven their abilities. In contrast, the social environment is most often described as “like a family.” This difference in tone between Preuss and Comparison conversations about the learning environment may be an artifact of the Preuss interviews, which took place at a sentimental time for students, right before graduation. Interviews sometimes focused on personal bonds and gratitude for support, expressions of obligation to help their families emerge from difficult circumstances, and repayment of parents’ efforts. Academic enthusiasm and intellectual engagement might or might not emerge in further interviews.

Some students consider their long school day one of the “challenges” of the school, however, long days were also familiar to two Comparison Group students and a waiting list student, who had long trips to schools far from their neighborhoods, with two of them riding on city buses.

One student said that if students are motivated, they should go to Preuss, but if they tend to rebel it will become worse. A few said the school “isn’t for everyone.” Students offered these comments in combination with endorsements of the school: When asked for general opinions about the school, a

couple said they love it, and one said “I think it’s one of the best opportunities there can be. They lay out the world out in your hands, and they tell you what to do with it -- they don’t let you just throw it away, you have to become someone yourself.” He added there “should be more Preusses around – kids need someone to show them the way.”

### Influence of Peers

Preuss students generally described their relationships with peers as a major source of support, encouragement, and friendly competition that pushes them to succeed. The small school population means that the seniors all know each other, and the school has been successful at creating a “college-going culture” and setting college as the goal for the student population.

Most Preuss School students said their close friends are fellow Preuss students, many of whom they have known for five or six years. A number of students said the small school population means they know everyone in their class and everyone knows them; this is part of the “family” environment students experienced. A student who felt bullied in elementary school said “it’s okay to be smart at Preuss,” and another said her bullies in elementary school have become her best friends at Preuss. Despite living in different neighborhoods, some students spend time with Preuss School friends on evenings and weekends. There is relatively little social distinction between different grade levels, and sometimes close friends are a year apart in age. As Preuss students describe it, the school is composed of students who want to succeed, and attending college and working to prepare for college is the accepted norm at the school.

Comparison Group students also described peers as very influential. Much of the influence is from the friends themselves, and some comes directly and indirectly from friends’ parents. For a Comparison student and a waiting list student, friendships expanded their ambitions and horizons and improved their school performance. A Comparison Group student said her grades and expectations had risen primarily due to “a change of friends” in 8<sup>th</sup> grade; her new acquaintances were dissatisfied with grades lower than A, and they began to compete with each other for the higher test scores. The parents of her new friends are college graduates and helped her with applications and college decisions. Another student described a set of friends who had teachers and subjects they cared about, and he traveled through his later high school years in this group of associates.

Other Comparison Group students were pulled away from educational interests by their circles of friends. Some eventually re-found their original direction although it may have become more difficult for them to advance. One of these students became separated from friends accepted to Preuss, and had new friends involved in social confrontations and eventually had to change schools. Another student had friends alienated from the school, partly due to social divisions and different educational expectations placed on them, but the student eventually managed to set her own course while remaining with her group of friends. In general, Comparison students chose friends who shared the goal of college, but that was not always the case, and students’ goals could and did change.

Comparison Group students often described social distinctions in the student population, between those in rigorous programs and those not, between students at different grade levels, and between students of different ethnic backgrounds. Some perceived this as an appealing diversity, while others found the environment inhospitable. A student attending a school in a distant and wealthier neighborhood described the large differences she observed, while she felt integrated in the school through of her sociability and involvement in sports. This was unlike the social experience described by Preuss seniors, and a couple of students said they never felt out of place, because all the students at Preuss came from similar backgrounds. Preuss students may experience greater diversity when they attend college.

In the Preuss School environment there is social support among students to attend four-year colleges, along with an expectation that provides a degree of social pressure. Working to attend college is the accepted social and educational norm among students at the school. A number of students said their friendships with Preuss students were one of the best things about their school experience, and that friends encouraged each other to persist.

College-going is a norm the students recognize is new in their families although it often represents their parents' dream. Both Preuss and Comparison Group students mentioned financial concerns as a factor in their decisions about which schools to attend. In several cases in each group, there were discussions between parents and children about which college they could afford to pay for and whether students were ready to leave home. A couple of Comparison Group students agreed with their parents that it was a better financial decision to attend a two-year college, and in one case the school counselors agreed; this is not likely to happen at Preuss. Three Preuss students faced similar issues with a family member, and all three wanted to attend the college they considered better or that allowed them more independence. In these cases, the students attended the colleges they wanted, decisions facilitated by financial support they received from colleges and other funding, and the social support and ethos of their school community. In other cases it was the parents who wanted their children to persist at Preuss and attend college, and Preuss school peers provided additional encouragement to friends to remain.

The Preuss School offered students a different experience than that available to the Comparison Group. The school gives a range of practical supports to all their students, and provides an atmosphere that is both tightly controlled and generously benevolent to those who conform. The school sets a single clear path towards academic success that all students must follow, a path generally new to the students and their families. The peer group is practically contained by the long hours and the small school in which students remain for up to seven years, and peers encourage each other to achieve the goals they share. The question of whether the educational environment at Preuss is better than at other schools must wait further study.

#### **4.4 Summary**

The study includes Preuss School students who attended Preuss from 7<sup>th</sup> to 12<sup>th</sup> grade, and students who applied to Preuss in the same year, were eligible to attend, but were not selected by lottery and spent those same years at other San Diego City Schools, graduating in 2005. The study finds that a greater proportion of Preuss School students than Comparison Group students are attending four year universities in Fall 2005. A greater proportion of Preuss students have made themselves eligible for University of California and California State University schools by taking the SAT I and II, however the mean SAT I test score of the subset of Comparison students participating in the study is higher than the mean scores of the Preuss students. A comparison of the practical supports offered to the two groups of students finds a range of supports are offered to Preuss students while Comparison students attending large comprehensive high schools must express and actively pursue college as an interest in order to receive similar benefits, and they must therefore know the importance of asking and know the resources they should seek. The social environment of the Preuss School, specifically students' relationships with teachers, counselors, and peers, is designed to provide support for college-going and is generally accomplishes that aim. Comparison students may find a similar environment for themselves in high school, but it is not certain that they will know what to look for in peers or how to establish good relationships with teachers and counselors who are willing to help them, or the importance of doing so. The crucial question of how well the Preuss and Comparison schools create educational environments that are rigorous and provide an education that prepares students for college courses will require further study and the inclusion of alumni populations in the research.