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Changes in Advanced Placement Test Taking in California High Schools 1998-2003

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**CHANGES IN ADVANCED PLACEMENT
TEST TAKING IN CALIFORNIA HIGH
SCHOOLS**

1998-2003

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Acknowledgments

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INTRODUCTION

Fifty years ago, in the historic *Brown v. Board of Education* decision, the U. S. Supreme Court ruled that separate but equal educational practices were unconstitutional. As a result, hope of improved educational opportunity for students of color flourished. Since then, much has changed in the manner and quality of education of our students. But equitable educational opportunities for all students, particularly students of color, have not been fully realized. Students of color are often subjected to less than ideal educational circumstances, including fewer qualified teachers, inferior educational facilities and resources, and a less demanding curriculum (Harris, 2004).

One example of the disparity in educational opportunity across high schools in California is the wide variation in Advanced Placement (AP) course offerings from school to school. A key finding of a 1999 report on AP participation in California states, "More than 90% of California's high schools offer Advanced Placement courses, but many students across all ethnicities and socio-economic strata have limited AP opportunities" (Brownell, Furry, & Beasley, 1999). More recent research (Furry & Hecsh; 2001) further details these disparities by providing evidence that the number of subjects in which schools recorded one or more AP exam results ranged from one to 26. This finding indicates that while some students have the chance to take a wide variety of AP courses, many others are not afforded the same opportunities. Many of the schools that provide greater numbers of AP courses are located in more affluent, suburban areas while urban

schools typically offer much fewer opportunities (Trousens & Colvin, 2002). More specifically, African-American and Hispanic students are particularly underrepresented in AP test taking (Brownell, Furry, & Beasley, 1999; Furry & Hecsh, 2001).

Access to AP courses is important for a number of reasons. First, college enrollment and persistence to graduation are higher among students in college preparatory classes such as Advanced Placement courses. Second, preparation via rigorous academic curriculum is particularly important to the college enrollment decisions of low income students. Failing to provide a rigorous curriculum can undermine the college preparation of students most in need of assistance. Providing a rigorous curriculum can have a dramatic impact. The vast majority of students in a rigorous curriculum persist to complete a bachelor's degree, - including first generation college students (Tierney, Colyar, & Corwin, 2003).

Moreover, students who complete AP courses and perform well on AP tests in California earn grade point credit and, possibly, course credit as well as preference for admission into the prestigious University of California system and most other higher education institutions. Thus, access to AP courses can have a dramatic effect on the higher educational opportunities, and subsequently the likelihood of upward social mobility, of California students.

As a result of the inequities in AP access and its potential consequences, the American Civil Liberties Union filed suit against the state of California on behalf of the students at Inglewood High School alleging the three AP course offerings provided at that school were inadequate (see *Daniel v. California*, No. BC214156). Partly in

response to that lawsuit, the California Department of Education initiated the AP Challenge Grant program, designed to increase the availability of and participation in Advanced Placement courses for ethnic minority students in California high schools. Understanding how well schools have responded to the challenge of increasing Advanced Placement opportunities and to what extent these efforts have resulted in increased AP testing by students of color motivates this investigation. As more AP courses become available more test taking by students may result, particularly if the cost of AP testing is minimized or offset by such programs as the AP Challenge Grant program.

The purpose of this study is to update earlier research findings (Brownell, Furry, & Beasley, 1999; Furry & Hecsh, 2001) by identifying Advanced Placement (AP) test taking patterns in California high schools since the initiation of the AP Challenge Grant Program. In addition, this study explores variations in ethnic sub-group participation and performance in AP testing and investigates variations in rates of change of sub-group participation and performance in AP testing over this period. This study seeks to address the question of whether advanced placement test frequencies among California students have changed and if so, how much and by whom. In addition, this study explores whether minority group participation in the advanced placement testing program has increased, both from an absolute as well as from a relative perspective. We seek to find out in which subjects and by how much any change in AP participation has occurred. Further, the study addresses the question of whether African-American and Hispanic students are "gaining ground" on Asian-

American and White students in terms of advanced placement test taking participation across California.

To understand the extent to which Advanced Placement test accessibility for minority students has changed since the introduction of the Challenge Grant program test frequency and performance data were analyzed for all Advanced Placement test activity from 1998 to 2003. This study builds upon earlier work but provides significant information about the extent to which these trends differ for different ethnic groups and whether inequalities in participation among various ethnic groups are diminishing or expanding. Moreover, this study provides the opportunity to identify specific high schools where inequalities in Advanced Placement testing are being reduced or where large gains for minority students are being realized.

METHODS

This study is comprised of three parts. The first part summarizes descriptive information regarding changes in AP test participation across California from 1998 to 2003. The second part of the study is also descriptive but looks instead at changes in AP test performance, rather than participation, over the same time frame. The third part of the study offers a linear longitudinal growth model to help understand and describe the variation in participation change patterns among California high schools. Separate growth models are estimated for each major ethnic subgroup to explore how growth rates in participation vary for different groups of students and to estimate how many schools have demonstrated differing levels of growth for each sub-population.

DATA

Data were provided from The College Board to the author for all Advanced Placement tests taken by California high school students from 1998 to 2003. The data were disaggregated by subject area, ethnicity, gender, and school site for all six years. Acquisition of these data was facilitated by UC ACCORD and the data were provided under a joint agreement between the University of California, Irvine, the California Department of Education, and The College Board. The complete data set included 53,884 records from 874 high schools in 36 Advanced Placement subjects.

RESULTS

OBJECTIVE 1: CHANGES IN AP TEST PARTICIPATION 1998-2003

Consistent with the findings of earlier research, AP testing is on the rise. More Advanced Placement tests were taken by California high school students in 2003 than were taken in 1998. In fact, the time period saw an increase of more than 85%, from 141,382 tests in 1998 to 262,201 tests in 2003. It appears the number of subjects tested per school also increased. In 1998, the average high school in California produced 181 AP tests in 9.44 subjects. In 2003, the average high school generated 308 tests in 12.32 subjects. Thus the data suggest that not only are schools producing more tests overall, they are also providing opportunities for testing in a greater number of subject areas.

Increases in total testing were seen for all students combined and also for every ethnic subgroup of students. African-American students took 2,910 AP tests in 1998. That number increased more than 140% to 7,159 in 2003. Hispanic students showed similarly large percentage increases, going from 25,039 tests in 1998 to 59,442 tests in 2003. White and Asian students showed smaller percentage increases, but larger total increases over this time span. White students' tests rose 87% from 52,258 to 97,850 while Asian students' tests increased 76% from 43,099 to 75,954.

It is clear that while all groups gained in the number of tests taken over time, White and Asian student testing increased at a substantially higher rate than did testing of African-American and Hispanic students in California. The gaps between ethnic subgroups in total tests taken across all subjects are increasing with time. Thus, while more tests by African-American and Hispanic children are being observed, these gains are outstripped by greater increases among their Asian and White counterparts.

The ethnic distribution of AP tests has changed little in the past six years. As can be seen below, the ethnic distribution of AP tests in 2003 is quite similar to the ethnic distribution of tests in 1998. Minor increases in the proportion of tests taken by Hispanic students and minor decreases in the number of tests taken by Asian-American students can be seen in 2003 relative to 1998, which may be due in part to changing demographics over this timeframe. The number of tests taken by each ethnic group for each AP subject area in each year is provided in Appendix A.

INSERT FIGURE 1 HERE

SUBJECT SPECIFIC INCREASES

For specific AP subject areas, there were statistically significant increases in not only the average number of tests taken by African-American and Hispanic test takers, but there were also statistically significant increases in the proportion of total tests taken from these groups. Specifically, Hispanic students showed an increase in the average proportion of tests taken in the subject areas of Art History, Biology, Calculus AB, Calculus BC, Chemistry, Economics:Macro, Economic:Micro, English Language, English Literature, French Language, U.S. Government and Politics, European History, U.S. History, Physics B, Psychology, Spanish Language, and Studio Art:Drawing. For African-American test takers, significant improvements in the average proportion of total tests taken in the subject areas of U.S. History, Music Theory, and Spanish Language were observed. A complete listing of the AP subjects showing significant differences between 1998 and 2003 for African-American and Hispanic students in terms of average number of tests by subject across schools and average proportion of tests by subject across schools is presented in Appendix B of this report.

Observed changes in AP test participation may result from changes in the enrollment densities of the ethnic groups. That is, the ethnic composition of the student population may be shifting over time, which

may result in larger testing volumes for the faster growing groups. To explore the extent to which the observed changes in AP test participation over time resulted from changes in enrollment densities, we compared the rate of participation relative to enrollment in 1998 with the rate of participation relative to enrollment in 2003 for White, Asian-American, African-American, and Hispanic students (see Figure 2).

When the proportion of tests taken by a given ethnic group at a school is equal to the proportion of that group to the total enrollment at a school, the ratio would be 1.0. The data show that the rate of AP test taking for Asian-American students relative to their enrollment remained constant at just over 3. That is, AP tests taken by Asian-Americans account for about three times the proportion of the total population of tests taken as the number of Asian-American students account for in the general California high school population. White, Hispanic, and African-American students' rates of participation relative to enrollments rose slightly over this same period, but for Hispanic and African-American students, the rates of participation remained well below their respective enrollment frequencies. In the case of Hispanic students, the ratio increase from .49 to .57, indicating that in 1998 Hispanic AP test taking occurred at about one-half of the rate of population prevalence. The numbers for African-American students are much lower. In 1998, the ratio of testing to enrollments among these students was just .26, and rose to a slightly higher .34 in 2003. Clearly, AP testing among African-American students in California, while increasing, remains much less frequent than the population of students would suggest and occurs much less frequently than AP testing among White, Asian-American, and Hispanic students.

INSERT FIGURE 2 HERE

Changes by AP Subject Area

How often each AP subject test was taken and how much change in test taking over time for each AP subject varied considerably (see Figures 3 and 4). The most frequent AP tests offered across California high school campuses remain the same, with U.S. History, Spanish Language, Calculus AB, and English Literature leading the lists in both years. These four courses were tested in more than 700 schools in 2003, making them the most prevalent of all AP courses. Several other courses were offered at more than 600 schools across the state in 2003. These include Biology, US Government and Politics, and English Language. Physics B and Chemistry were tested in more than 400 schools in 2003. The AP subject area of Statistics showed substantial growth in prevalence, rising to join French Language, Spanish Literature, Macroeconomics, and European History at more than 300 campuses throughout California.

INSERT FIGURE 3 HERE

As mentioned, students from high school campuses were tested in more subjects in 2003 than in 1998. This growth came from an increased prevalence and variety of course offerings throughout the state. The largest rate of growth in AP test prevalence at school campuses came in a few subject areas. AP testing in Environmental Science went from only 44 campuses in 1998 to 190 campuses in 2003. Studio Art (from 97 to 277) and Statistics (from 151 to 383) also saw large increases in the number of campuses from which these subjects were tested. Virtually all AP subjects have become more prevalent on high school campuses since 1998. Only German (from 111 to 106) and Latin: Vergil (from 26 to 25) showed a reduction in the number of high schools producing a test in that subject area.

INSERT FIGURE 4 HERE

Some schools showed exemplary growth in AP activity. As an illustrative example, one school in Los Angeles produced only 12 tests in two AP subjects in 1998. That same school generated 273 tests in ten AP subjects just six years later. Another school located in the high desert region of Southern California accounted for just 53 tests in two subject areas in 1998, but produced 378 tests from 16 subject areas in 2003. Finally, a school located in San Diego County generated only 31 tests in but two subject areas in 1998. By 2003, that school accounted for 521 tests in twenty-one subject areas. Clearly, these schools indicate that substantial progress in the number of tests taken

and the variety of opportunities provided to students can be made over a relatively brief time span.

OBJECTIVE 2: CHANGES IN AP TEST PERFORMANCE 1998-2003

In addition to test participation, this study explored the extent to which test performance among California students changed from 1998 to 2003. As participation in AP testing increased from 1998 to 2003, average performance on the tests declined (see Figure 5). The average score on all AP tests declined from just over 3.0 to just below 2.9 (on a five-point scale). While the magnitude of average test score decrease is consistent with earlier research (Furry, & Hecsh; 2001) showing a 5% score reduction, this is nonetheless a notable decline. The threshold value 3.0 is of significance, indicating passing on the test and in many cases earning college credit for the student. Thus, while the overall average score resulted in a passing grade in 1998, the average score resulted in a non-passing grade in 2003.

INSERT FIGURE 5 HERE

The magnitude and direction of average score changes varied by AP subject area. Not all AP subjects showed a decline in average score performance between 1998 and 2003. Although U.S. History and English Literature showed consistent reduction in average performance during this period, other subject areas, such as Calculus AB, Spanish, and Statistics indicated more volatile patterns of average performance,

with intermittent annual increases and decreases. For each of these three subjects, the average performance scores in 2003 exceeded the average performance scores in 1998 despite substantial growth in test taking activity.

INSERT FIGURES 6-10 HERE

Performance Declines by Ethnicity

Performance declines were not equivalent across ethnic subgroups, as some groups exhibited substantially more score degradation over this period than did others. While the total population saw about a 5% decline in average scores, Hispanics exhibited an average score decline of around 12.4% (see Figure 11). White and Asian-American students produced a 2-3% score decline and African-American students saw average scores drop about 6%. Thus, it appears that while participation among students increased over this period, average performance has diminished. More detailed information regarding average performance scores by ethnicity for all AP subjects across the years is provided in Appendix C.

INSERT FIGURE 11 HERE

OBJECTIVE 3: MODELING VARIATION IN GROWTH RATES

As a third objective, this study sought to model the variation in test participation change across schools, with the hope of identifying characteristics among schools related to greater rates of test participation increases, especially among minority students.

As can be seen from the figures below, there is much variation in the amount of growth in AP test participation among California high schools. Figure 12 shows the rates of growth in participation among the high schools with the greatest amount of AP testing in 1998. Figure 13 shows the different rates of growth in participation among the high schools with the least amount of AP testing in 1998. In both cases, each line on the figure represents a single school. The horizontal axis represents time, with each interval indicating one year. The vertical axis represents the total number of Advanced Placement tests for that school. Clearly, there is more variation in growth rates among schools with more testing activity (Figure 12) than among schools with less testing activity (Figure 13).

INSERT FIGURE 12 HERE

INSERT FIGURE 13 HERE

As a first step in identifying how much growth in AP testing has occurred and what might relate to it, a simple linear growth model was applied to the data. Figure 14 graphically depicts this model. In this analyses, a slope and intercept parameter are estimated based on the data. The intercept parameter indicates the rate of testing activity at the initial time point (i.e., 1998). The slope parameter indicates the annual rate of testing increase. For this study, separate growth models were estimated for all students and for each major ethnic subgroup.

INSERT FIGURE 14 HERE

Table 1 below provides the results of those analyses. These results suggest that, on average, each California high school generated 161 tests in 1998 and increased the number of total AP tests by about 28 tests per year among all students. When broken down by ethnic group, the estimated slope (e.g., the number of tests increased per

year) varies considerably. White students had the largest estimated growth parameter (10.81 tests per year), followed by Asian-Americans (8.18), Hispanics (7.89), and African-Americans (1.20). Thus, while the average high school increased the number of White students' tests by almost 11 per year, the increase for African-Americans was just over 1 per year. These data clearly suggest that the rate of growth in AP test taking for underrepresented students is not keeping up with increases in test taking for those students already better represented in the testing population.

Group	Estimated Intercept	Estimated Slope
All Students	161.45	27.98
Hispanic	28.05	7.89
African-American	4.05	1.20
Asian-American	52.05	8.18
White	60.46	10.81

Table 1. Results of Simple Linear Growth Model for AP Test Participation Increases

In general, much of the variation in individual school growth patterns was unexplained by a simple linear growth model. In an effort to better explain the variations across schools, a growth mixture model was fit to the data which allows for multiple-group slope and intercept parameters as well as estimation of group membership for each school. In these models, depicted graphically in Figure 15, separate slope and intercept parameters are estimated for each group in the model (represented by the "c" variable). In addition, a covariate is included to help define the groups. In this case, the

covariate (represented by the “x” variable in the model) reflected the average student performance on AP tests for that group at that school.

One-group, two-group, and three-group models were estimated for all students and for each major ethnic group. With one exception, the best fitting models involved a two-group mixture model, with one group indicating “higher” growth rates and better average student performance, and the other group indicating “lower” growth rates and lower average student performance. In this model, growth is defined as annual increases in AP testing. High growth represents larger annual increases in testing activity while low growth represents smaller annual increases in testing activity. For the African-American students, a two-group model did not result in improved model fit over the single-group model. For the other ethnic groups, three-group models provided no better fit over the two-group models. Subsequently, only the results of the two-group analyses will be presented.

INSERT FIGURE 15 HERE

	High Growth			Low Growth		
	Number of test in 1998	Annual increase	No. of schools	Number of test in 1998	Annual increase	No. of schools
Hispanic	169	48.79	47 (5.5%)	20	5.65	802 (94.5)
Asian-American	657	37.04	13 (1.6%)	42	7.70	814 (98.4)
White	229	35.16	108 (12.4%)	37	7.36	757 (87.6%)

Table 2. Results of Growth Mixture Models for AP Test Participation Increases

These analyses suggest that while there is much variation across schools, there are not many schools showing high growth in Advanced Placement test participation. Looking at all students combined, the data suggest that only 5.5% of the schools fit the “high growth” profile, while 94.5% of schools fall into the “lower” growth profile. This finding is even more pronounced when we look at the breakdown of which schools are high and low growth for each ethnic subgroup. For example, only 5.5% of California high schools (47 schools) were identified as high growth (an increase of 49 tests per year) for Hispanic students. Only 1.6% of schools (13 schools) were identified as high growth Asian-American schools. However, more than 100 schools were identified as high growth schools for White students. Thus, it appears that schools showing high growth in AP testing predominately do so by increasing testing by White students. Schools with high growth trajectories are much less common for Hispanic, African-American, and Asian American students.

SUMMARY

In summary, this study provides information regarding observed changes in Advanced Placement test taking and test performance in

California since the inception of the AP Challenge Grant Program. The data suggest that AP testing activity has increased considerably since 1998. In addition, testing activity has increased for all major ethnic subgroups. Not only are more tests being taken, tests in more subject areas per school have been realized. The average number of AP subjects tested at California high schools increased more than 30% since the introduction of the AP Challenge Grant Program. Further, significant increases in the average proportion of tests taken by Hispanic and African-American students have been shown in a number of Advanced Placement subjects. That is, for certain subjects, both absolutely and relatively more tests are coming from Hispanic and African-American students. In addition, some schools have shown tremendous improvements in AP testing, both in the total number of tests taken and the variety of AP courses tested.

Yet, as testing activity has increased, student performance on those tests has decreased. Average scores have declined approximately 5% during the six-year period, continuing a downward trend and moving farther below the threshold representing a passing score. The score declines are greatest for the most underrepresented students. Hispanic students have witnessed a decline of more than 12% in their average scores during this time, while African-American students' scores have dropped about 6%.

While some improvements have occurred in terms of more testing among minority students, much has yet to be done if real equity in representation for Hispanic and African-American students in California is to be realized. The rates of increases among Hispanic and African-American students in AP test taking are much lower than the rates of

increases in test taking by White and Asian-American students. Whereas more than 100 schools represent high growth schools for White students, fewer than half that many do so for ethnic minority students. Hispanic and African-American students still test on AP exams far less frequently than their representation in the student population would suggest. Their rates of participation, while increasing, are not gaining ground on the participation rates of White and Asian-American students. Thus, it appears that the hope of equal educational opportunities for all, at least as it pertains to equal access to and participation in Advanced Placement testing opportunities among California high school students has yet to be realized.

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Figures

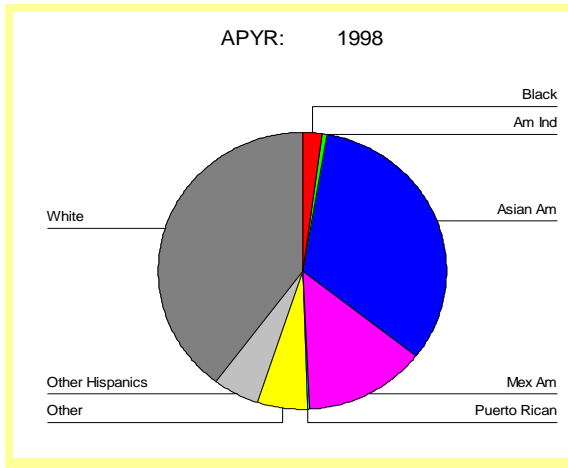


Figure 1a. Ethnic Distribution 1998

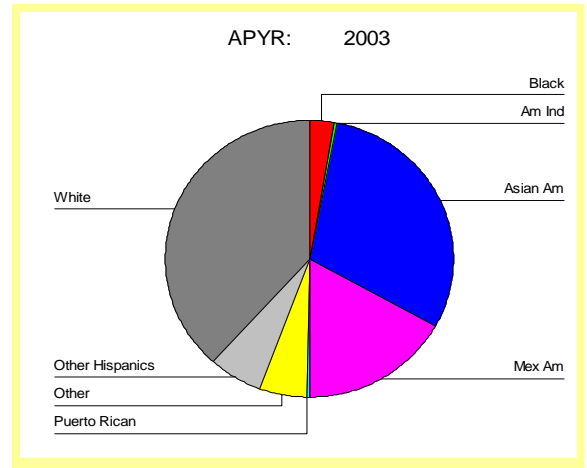


Figure 1b. Ethnic Distribution 2003

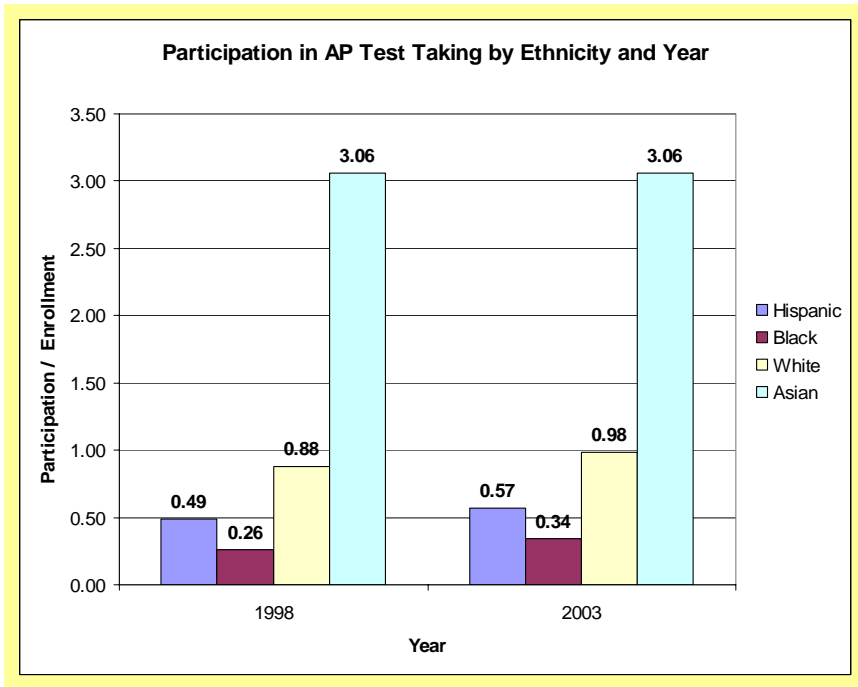


Figure 2. Participation in AP testing relative to enrollments

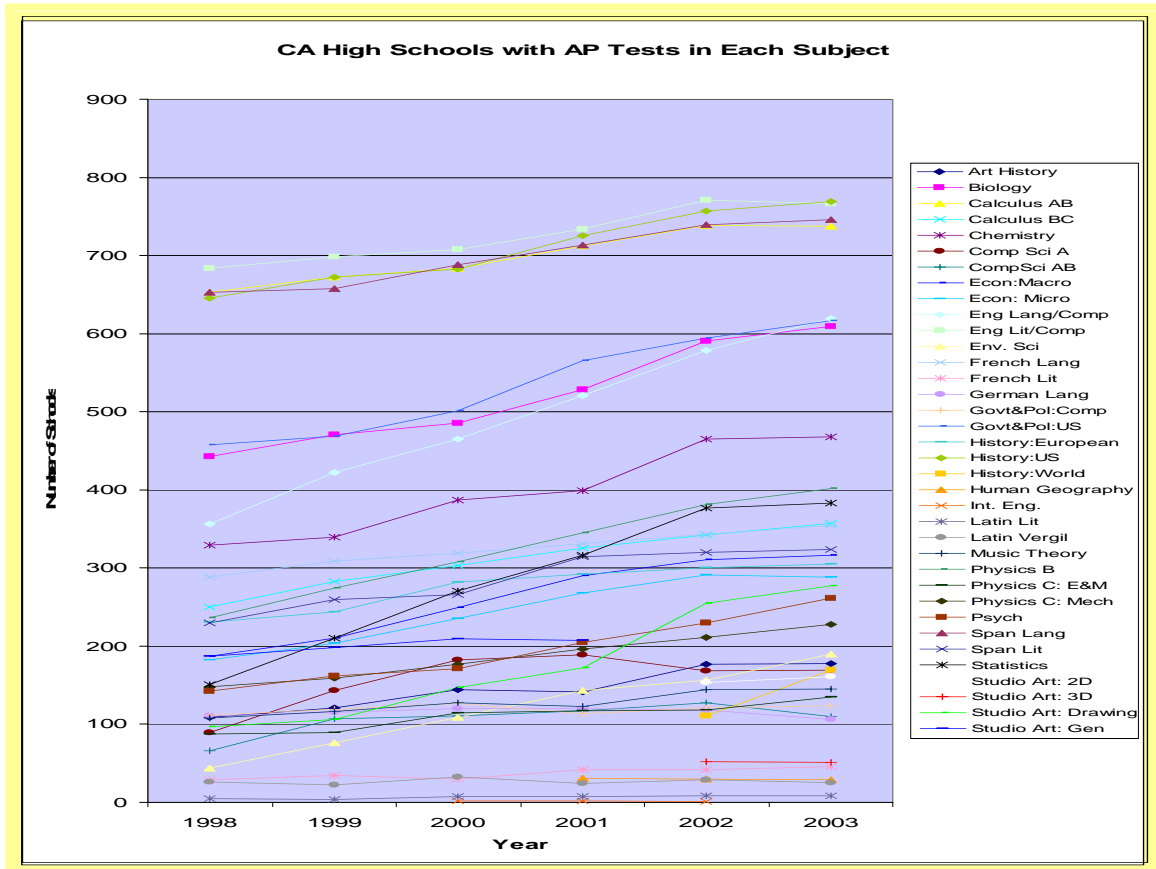


Figure 3: CA High Schools with AP Tests in Each Subject

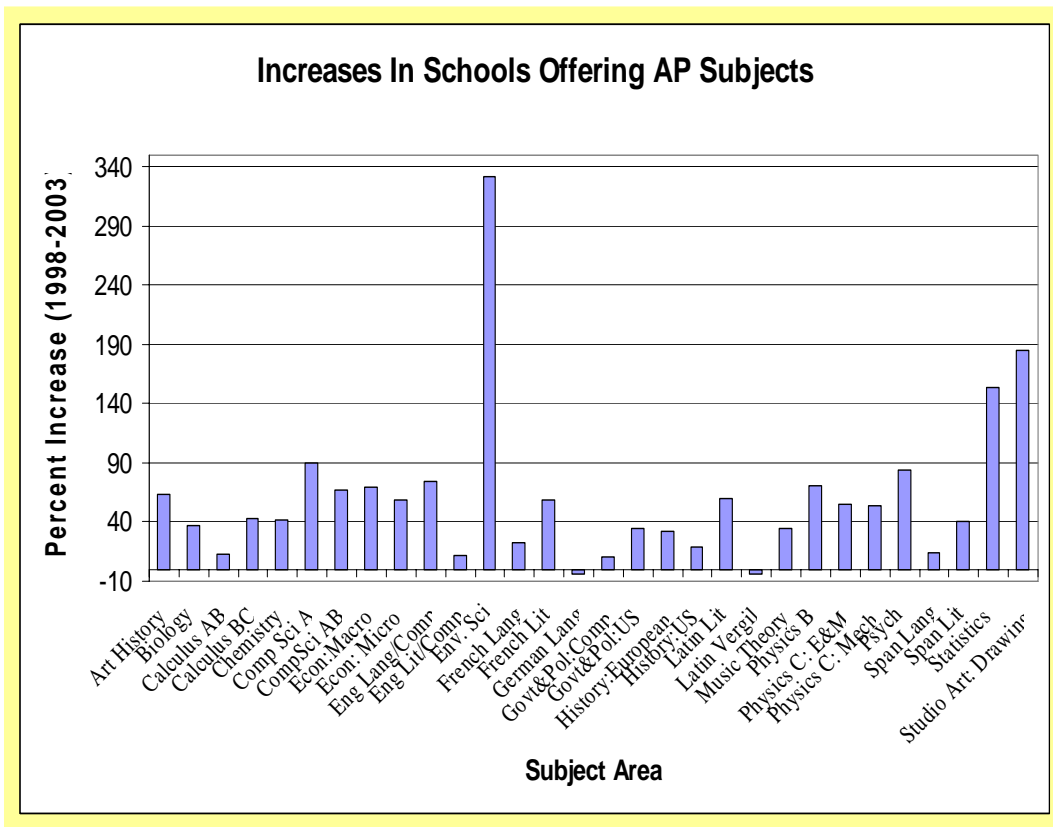


Figure 4: Increase in Prevalence of AP Subjects on California High School Campuses 1998 – 2003

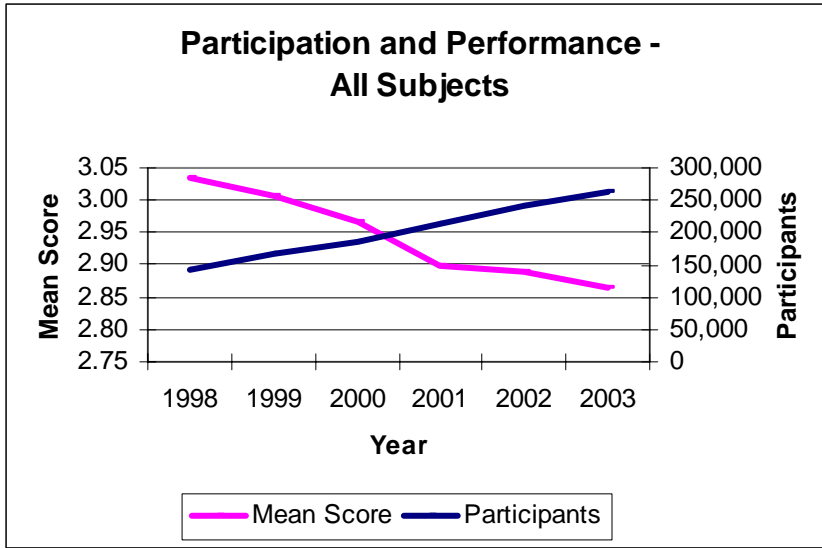


Figure 5: All Subject Areas

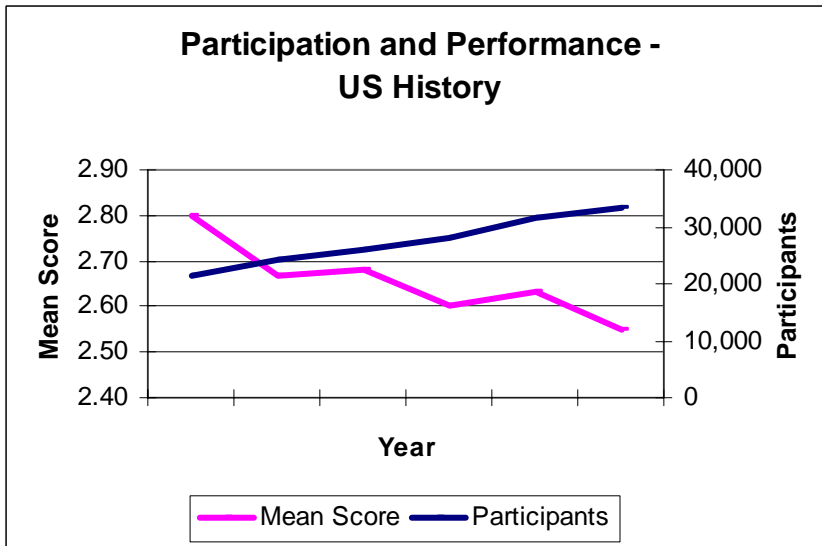


Figure 6: US History

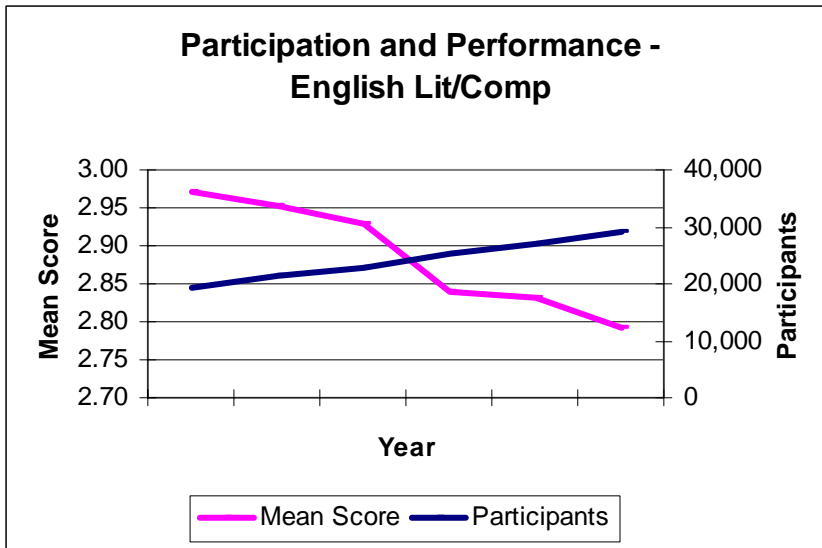


Figure 7: English Lit/Comp

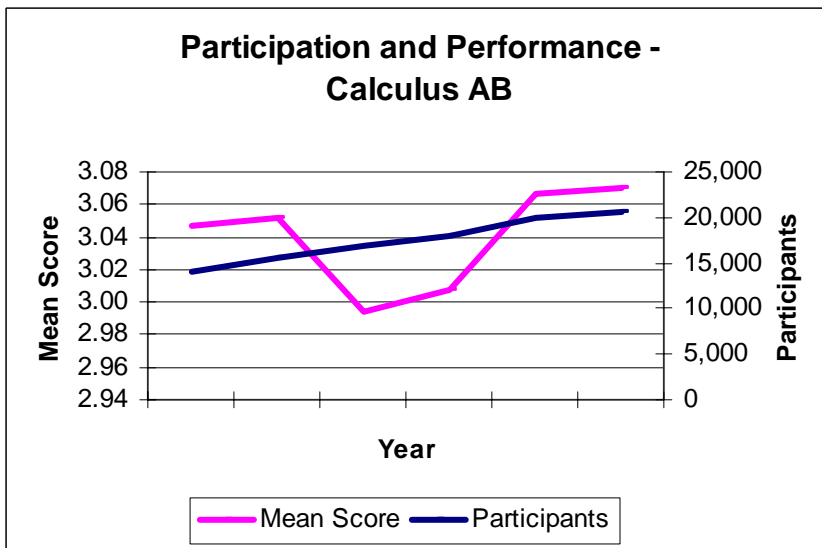


Figure 8: Calculus AB

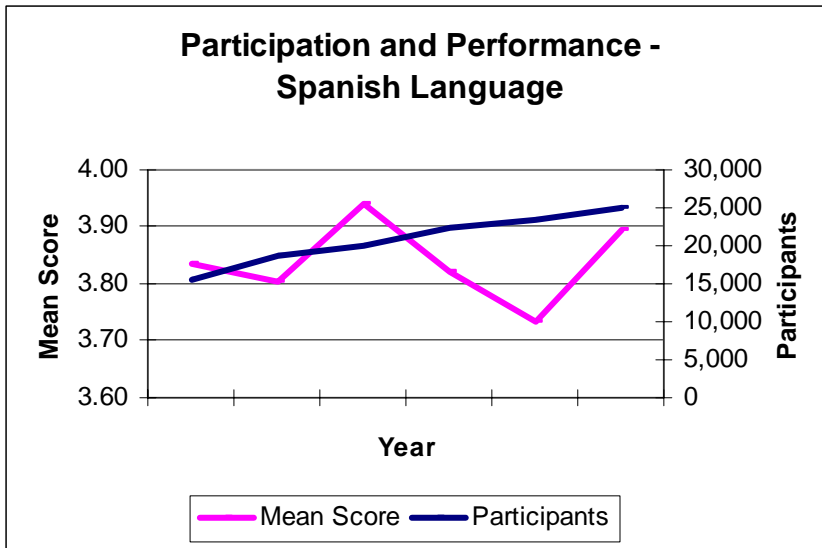


Figure 9: Spanish Language

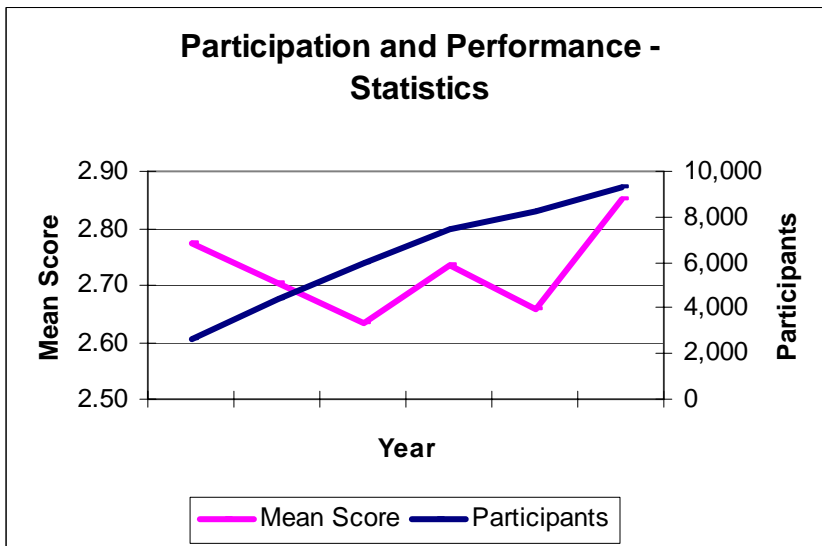


Figure 10: Statistics

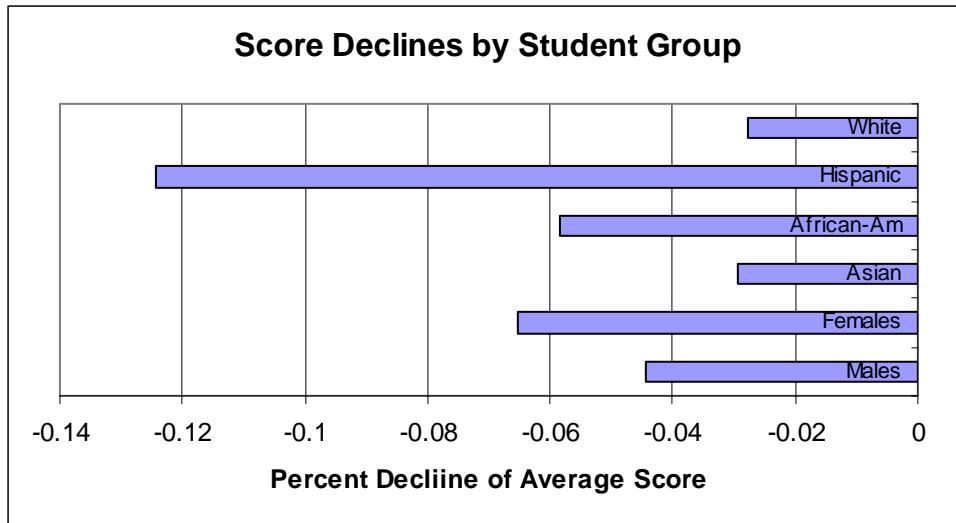


Figure 11. Performance Decline by Ethnic Group

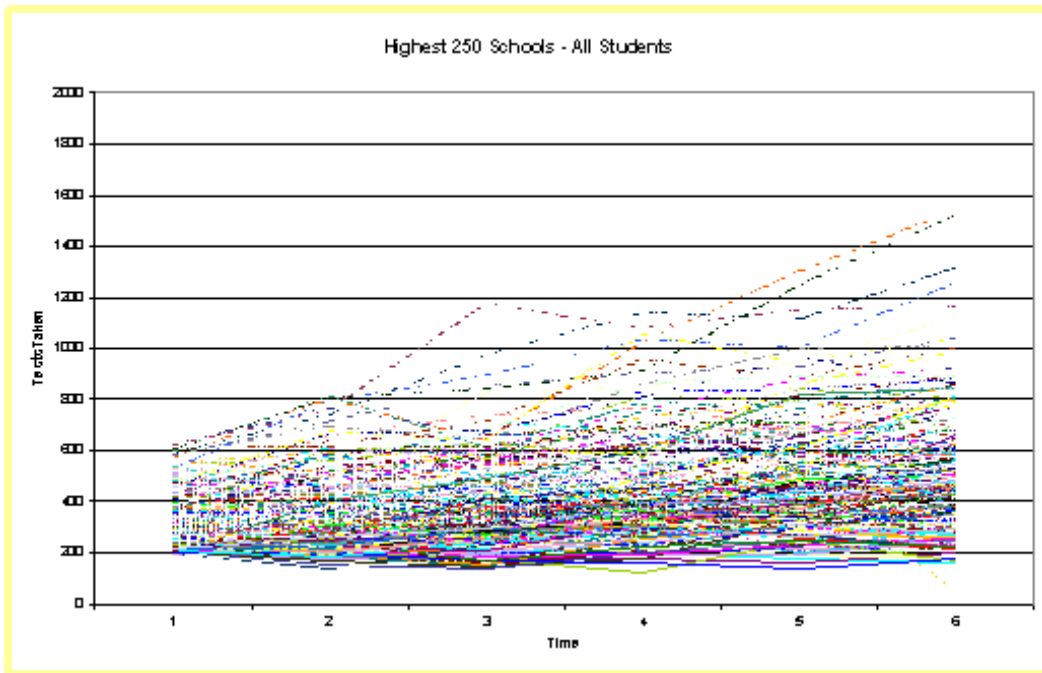


Figure 12. Growth curves for high schools with greatest AP participation

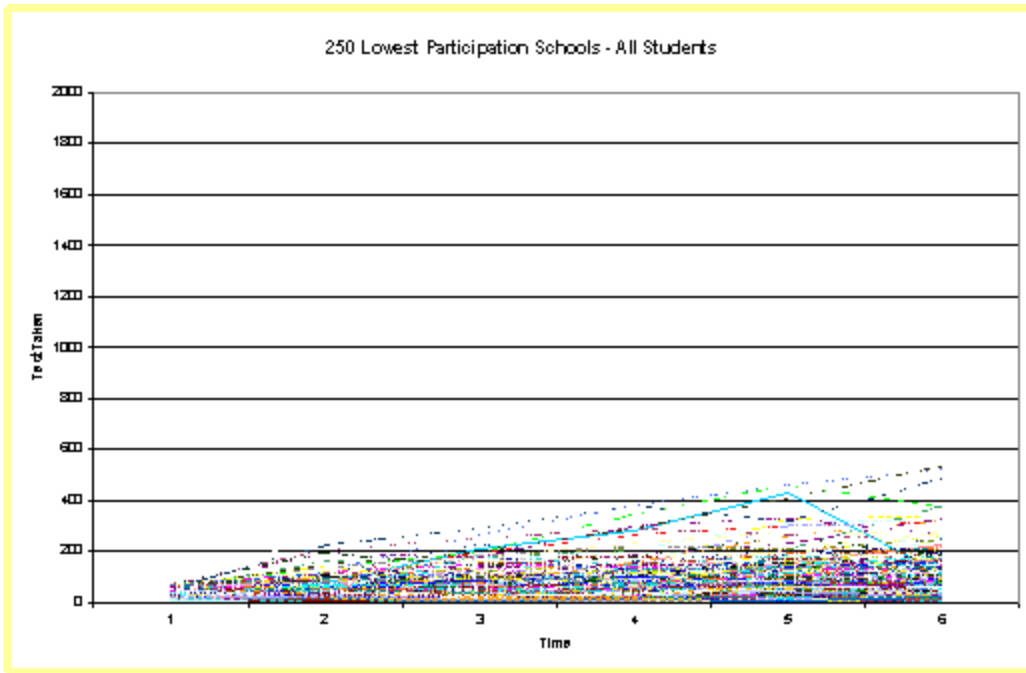


Figure 13. Growth curves for high schools with lowest AP participation

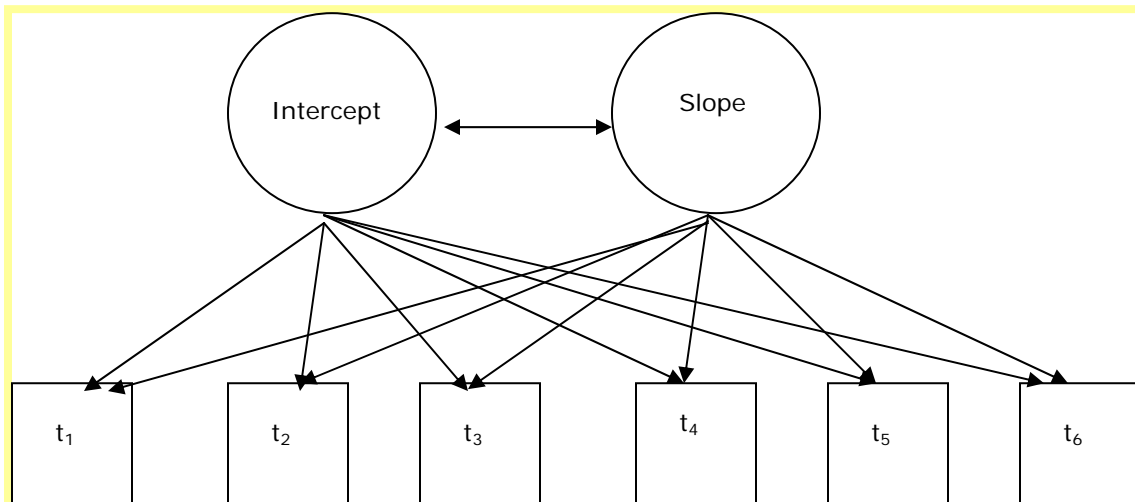


Figure 14. A Simple Linear Growth Model for AP Test Participation Increases

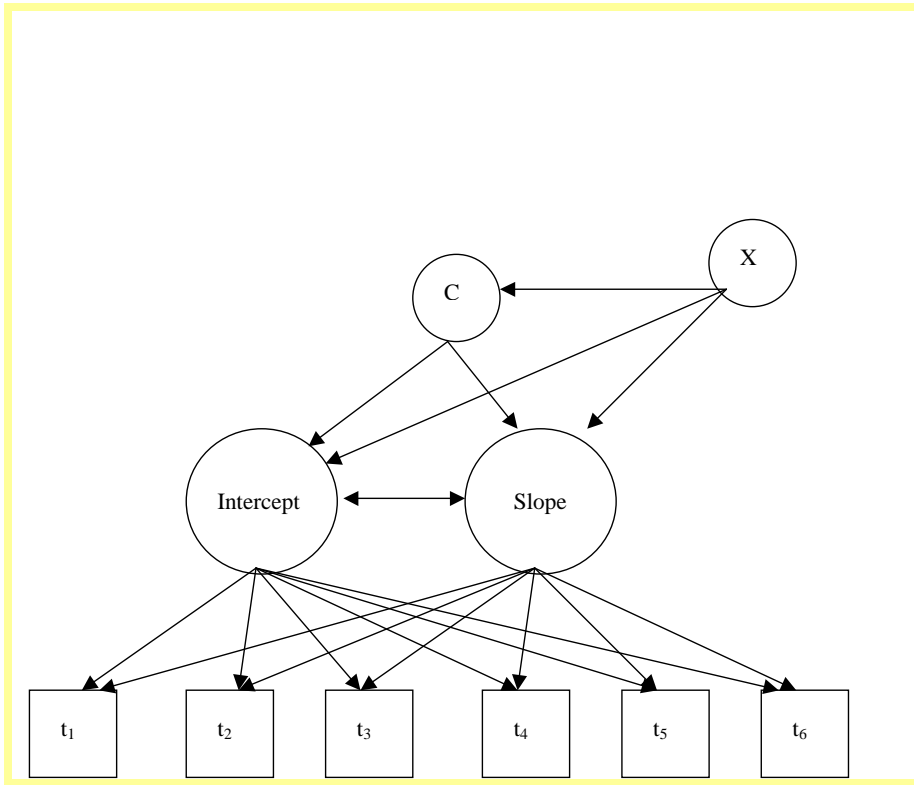


Figure 15. A Growth Mixture Model for AP Test Participation Increases

Appendix A – Table of Total Tests Taken by Ethnic Group and
Subject Area 1998-2003

Table A1: Number of AP tests taken in California High Schools 1998-2003

Subject	Year	White	Asian American	African American	Hispanic
Art History	1998	518	570	35	170
Art History	1999	581	601	54	219
Art History	2000	799	864	80	277
Art History	2001	891	913	71	354
Art History	2002	1312	1142	90	558
Art History	2003	1351	1352	101	706
Biology	1998	3699	3745	192	854
Biology	1999	4024	4366	203	1025
Biology	2000	4433	4759	272	1348
Biology	2001	4950	4960	343	1660
Biology	2002	5426	5417	346	1982
Biology	2003	5586	6056	362	2219
Calculus AB	1998	5150	5521	246	1586
Calculus AB	1999	5846	6000	318	1852
Calculus AB	2000	6327	6746	345	2226
Calculus AB	2001	6801	6929	368	2422
Calculus AB	2002	7479	7727	417	2785
Calculus AB	2003	7818	7756	477	3099
Calculus BC	1998	1048	1785	29	148
Calculus BC	1999	1233	2099	22	206
Calculus BC	2000	1430	2379	68	248
Calculus BC	2001	1641	2741	58	296
Calculus BC	2002	1790	2876	68	314
Calculus BC	2003	2064	3310	65	399
Chemistry	1998	1767	2343	105	359
Chemistry	1999	1918	2692	130	442
Chemistry	2000	2289	3069	154	584
Chemistry	2001	2379	3220	173	691
Chemistry	2002	2985	3833	221	936
Chemistry	2003	2878	4102	224	1177

Subject	Year	White	Asian American	African American	Hispanic
Computer Sci A	1998	264	369	5	38
Computer Sci A	1999	518	852	14	60
Computer Sci A	2000	662	918	28	113
Computer Sci A	2001	739	1122	31	117
Computer Sci A	2002	774	967	32	137
Computer Sci A	2003	735	928	23	134
Computer Sci AB	1998	132	203	6	11
Computer Sci AB	1999	275	396	7	33
Computer Sci AB	2000	317	440	10	20
Computer Sci AB	2001	333	548	4	29
Computer Sci AB	2002	354	536	4	29
Computer Sci AB	2003	261	397	8	26
Economics: Macro	1998	1014	1103	43	274
Economics: Macro	1999	1443	1342	57	448
Economics: Macro	2000	1767	1434	85	496
Economics: Macro	2001	2194	1855	108	804
Economics: Macro	2002	2369	2095	128	954
Economics: Macro	2003	2849	2361	168	1207
Economics: Micro	1998	934	1044	52	220
Economics: Micro	1999	1076	1217	60	296
Economics: Micro	2000	1366	1335	115	459
Economics: Micro	2001	1521	1492	90	437

Subject	Year	White	Asian American	African American	Hispanic
Economics: Micro	2002	1725	1850	114	599
Economics: Micro	2003	1844	1986	121	543
English Lang/Comp	1998	4128	2542	327	1180
English Lang/Comp	1999	5336	3055	451	1747
English Lang/Comp	2000	6727	3919	621	2454
English Lang/Comp	2001	8034	4625	776	3593
English Lang/Comp	2002	9939	5474	941	4456
English Lang/Comp	2003	11255	6065	1032	5447
English Lit/Comp	1998	8450	5187	578	2671
English Lit/Comp	1999	9432	5549	733	3118
English Lit/Comp	2000	10160	6225	844	3633
English Lit/Comp	2001	10999	6594	889	4184
English Lit/Comp	2002	11703	7013	994	4819
English Lit/Comp	2003	12562	7568	1120	5478
Environmental Sci	1998	209	286	17	77
Environmental Sci	1999	535	471	57	194
Environmental Sci	2000	829	815	116	437
Environmental Sci	2001	1322	1095	136	609
Environmental Sci	2002	1346	1267	148	844
Environmental Sci	2003	2001	1448	203	1077

Subject	Year	White	Asian American	African American	Hispanic
French Lang	1998	712	395	17	175
French Lang	1999	776	499	31	288
French Lang	2000	792	453	34	354
French Lang	2001	1007	549	32	350
French Lang	2002	916	556	43	422
French Lang	2003	1012	558	44	451
French Lit	1998	47	45	1	1
French Lit	1999	46	13	0	4
French Lit	2000	58	36	0	5
French Lit	2001	65	28	1	7
French Lit	2002	77	39	0	11
French Lit	2003	77	31	4	8
German Lang	1998	228	82	1	10
German Lang	1999	274	66	2	14
German Lang	2000	271	77	3	17
German Lang	2001	298	93	3	21
German Lang	2002	246	89	1	13
German Lang	2003	276	83	2	18
Govt & Pol: Comp	1998	388	324	20	74
Govt & Pol: Comp	1999	399	271	18	90
Govt & Pol: Comp	2000	545	401	44	174
Govt & Pol: Comp	2001	546	399	59	138
Govt & Pol: Comp	2002	534	434	47	193
Govt & Pol: Comp	2003	602	462	50	213

Subject	Year	White	Asian American	African American	Hispanic
Govt & Pol: U.S.	1998	4095	2873	276	1373
Govt & Pol: U.S.	1999	4776	3120	371	1701
Govt & Pol: U.S.	2000	5510	3715	498	2225
Govt & Pol: U.S.	2001	6529	4327	563	2586
Govt & Pol: U.S.	2002	6896	4668	601	3292
Govt & Pol: U.S.	2003	7789	5264	744	3754
History: European	1998	2617	1883	107	488
History: European	1999	3270	2201	155	707
History: European	2000	3880	2518	176	959
History: European	2001	4915	3045	231	1365
History: European	2002	5034	2990	227	1517
History: European	2003	5274	3166	273	1726
History: U.S.	1998	9216	6238	511	2561
History: U.S.	1999	10128	6888	694	3298
History: U.S.	2000	11175	7588	787	3962
History: U.S.	2001	11835	8005	944	4741
History: U.S.	2002	13291	8847	1091	5516
History: U.S.	2003	13635	9143	1138	6340
History: World	2002	1070	655	60	446
History: World	2003	1660	1104	103	626
Human Geography	2001	168	117	9	61
Human Geography	2002	204	73	6	52
Human Geography	2003	176	105	6	61

Subject	Year	White	Asian American	African American	Hispanic
International English	2000	1	0	0	0
International English	2001	0	2	0	0
International English	2002	0	1	0	0
Latin: Lit	1998	1	3	0	1
Latin: Lit	1999	16	22	0	1
Latin: Lit	2000	9	3	0	0
Latin: Lit	2001	8	23	0	0
Latin: Lit	2002	19	14	0	0
Latin: Lit	2003	27	7	1	1
Latin: Vergil	1998	89	86	2	4
Latin: Vergil	1999	61	53	2	1
Latin: Vergil	2000	109	71	3	9
Latin: Vergil	2001	71	52	2	6
Latin: Vergil	2002	89	46	1	15
Latin: Vergil	2003	92	40	7	10
Music Theory	1998	205	191	1	28
Music Theory	1999	200	187	7	43
Music Theory	2000	234	234	14	33
Music Theory	2001	241	245	10	43
Music Theory	2002	337	307	15	70
Music Theory	2003	374	385	15	62
Physics B	1998	1230	1371	45	248
Physics B	1999	1520	1549	69	346
Physics B	2000	1940	2113	79	502
Physics B	2001	2099	2284	98	566
Physics B	2002	2350	2410	117	672
Physics B	2003	2743	2692	124	741

Subject	Year	White	Asian American	African American	Hispanic
Physics C: E&M	1998	221	367	9	33
Physics C: E&M	1999	216	346	5	32
Physics C: E&M	2000	302	338	13	30
Physics C: E&M	2001	325	393	5	29
Physics C: E&M	2002	359	425	3	32
Physics C: E&M	2003	334	493	10	54
Physics C: Mech	1998	650	772	22	87
Physics C: Mech	1999	760	852	24	107
Physics C: Mech	2000	858	860	35	109
Physics C: Mech	2001	934	1039	35	174
Physics C: Mech	2002	1077	1049	43	245
Physics C: Mech	2003	1058	1179	38	235
Psychology	1998	798	756	37	218
Psychology	1999	1085	870	55	262
Psychology	2000	1309	1070	105	451
Psychology	2001	1652	1376	118	514
Psychology	2002	2071	1495	158	697
Psychology	2003	2406	1844	186	942
Spanish Lang	1998	2729	1687	127	9436
Spanish Lang	1999	3169	2020	138	11450
Spanish Lang	2000	3476	2115	177	12963
Spanish Lang	2001	3820	2250	214	14522
Spanish Lang	2002	3742	2168	227	15729
Spanish Lang	2003	3787	2230	237	17234

Subject	Year	White	Asian American	African American	Hispanic
Spanish Lit	1998	167	127	11	2230
Spanish Lit	1999	149	116	10	2626
Spanish Lit	2000	209	115	12	3072
Spanish Lit	2001	227	118	10	3650
Spanish Lit	2002	255	145	15	3943
Spanish Lit	2003	201	88	5	4051
Statistics	1998	1022	915	57	304
Statistics	1999	1837	1546	75	404
Statistics	2000	2572	2167	123	589
Statistics	2001	3212	2634	173	779
Statistics	2002	3477	3095	180	878
Statistics	2003	4126	3184	216	989
Studio Art: 2-D Design	2002	340	147	24	106
Studio Art: 2-D Design	2003	312	168	13	104
Studio Art: 3-D Design	2002	64	20	4	21
Studio Art: 3-D Design	2003	55	23	5	16
Studio Art: Drawing	1998	121	94	11	52
Studio Art: Drawing	1999	167	113	13	53
Studio Art: Drawing	2000	232	132	19	107
Studio Art: Drawing	2001	271	191	19	119
Studio Art: Drawing	2002	506	373	35	255
Studio Art: Drawing	2003	630	376	34	294
Studio Art: General	1998	409	192	20	128
Studio Art: General	1999	439	209	18	148
Studio Art: General	2000	534	259	20	164
Studio Art: General	2001	500	235	33	167

Appendix B – Table of Significant Increases in Participation by
African-American and Hispanic Students 1998-2003

Table B1: Advanced Placement Subjects with Statistically Significant Increases in Testing by African Americans and Hispanic Students in California High Schools 1998-2003

	AVERAGE NUMBER OF TESTS BY AFRICAN AMERICANS	PROPORTION OF TESTS BY AFRICAN AMERICANS	AVERAGE NUMBER OF TESTS BY HISPANICS	PROPORTION OF TESTS BY HISPANICS
ART HISTORY			X	X
BIOLOGY	X		X	X
CALCULUS AB	X		X	X
CALCULUS BC			X	X
CHEMISTRY			X	X
MICRO ECONOMICS			X	X
MACRO ECONOMICS	X		X	X
ENGLISH LANG/COMP	X		X	X
ENGLISH LIT/COMP	X		X	X
ENVIRONMENTAL SCIENCE	X		X	
FRENCH LANG	X		X	X
GOVT & POL: US	X		X	X
HISTORY: EUROPEAN	X		X	X
HISTORY: US	X	X	X	X
MUSIC THEORY	X	X		
PHYSICS B	X		X	X
PHYSICS C: MECHANICS			X	
PSYCHOLOGY	X		X	X
SPANISH LANG	X	X	X	X
SPANISH LIT	X		X	
STUDIO ART: DRAWING			X	X

Appendix C – Table of Average Score Performance by AP Subject
Area 1998-2003

Table C1. Mean Score By Year, Ethnicity, and AP Subject Area

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
1998	All Subjects	2.9824	2.2034	3.0555	3.2846	3.0827
1999	All Subjects	2.9489	2.1418	2.9767	3.1853	3.0877
2000	All Subjects	2.9244	2.1301	2.9129	3.1061	3.0660
2001	All Subjects	2.8862	2.0656	2.8088	2.9491	3.0074
2002	All Subjects	2.9151	2.0948	2.6975	2.8854	3.0240
2003	All Subjects	2.8945	2.0749	2.6733	2.8983	2.9975
1998	Art History	3.1596	2.3714	2.7280	2.9048	3.2954
1999	Art History	2.9484	2.1296	2.7484	2.4211	3.2220
2000	Art History	2.9757	2.1500	2.2941	2.4048	3.2315
2001	Art History	2.9452	2.4085	2.1786	2.5625	3.2233
2002	Art History	2.8030	2.2333	2.2112	2.3798	3.1387
2003	Art History	2.8033	2.2178	2.1024	2.5987	3.1569
1998	Biology	3.0937	2.2083	2.1065	2.5125	3.2179
1999	Biology	3.2810	2.3350	2.2128	2.4191	3.3372
2000	Biology	3.1780	2.3088	2.0927	2.3659	3.2953
2001	Biology	3.0431	2.0612	1.8894	1.9907	3.1463
2002	Biology	3.1427	2.1156	1.8996	2.0528	3.2490
2003	Biology	3.0710	2.0387	1.8644	2.0520	3.1515
1998	Calculus AB	3.0723	2.4350	2.1854	2.6086	3.2617
1999	Calculus AB	3.0555	2.1226	2.2523	2.5012	3.3004
2000	Calculus AB	3.0119	2.3275	2.1797	2.3792	3.2605
2001	Calculus AB	3.0492	2.2391	2.1824	2.3719	3.2941
2002	Calculus AB	3.1223	2.3046	2.2371	2.4146	3.3510
2003	Calculus AB	3.1380	2.4298	2.3075	2.4512	3.3397
1998	Calculus BC	3.6499	2.9310	2.7333	3.0256	3.6698
1999	Calculus BC	3.5727	2.7273	2.4172	2.7800	3.6821
2000	Calculus BC	3.6414	2.6324	2.4438	2.7500	3.6350
2001	Calculus BC	3.6439	2.7241	2.4909	2.9155	3.6240
2002	Calculus BC	3.7729	2.8529	2.7256	3.2065	3.7972
2003	Calculus BC	3.7341	2.7538	2.5504	2.9196	3.7951
1998	Chemistry	2.8425	1.7429	1.8498	2.1154	2.9174
1999	Chemistry	2.7975	1.8538	1.8725	2.0435	2.9124
2000	Chemistry	2.8869	1.9091	1.7199	1.9133	2.9480
2001	Chemistry	2.9028	1.6590	1.6308	1.7552	2.8806
2002	Chemistry	2.8552	1.7104	1.5827	1.8712	2.7963
2003	Chemistry	2.7377	1.6429	1.5443	1.6926	2.8006

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
1998	Computer Sci A	2.7507	2.0000	2.1600	2.0000	2.8750
1999	Computer Sci A	2.7289	2.3571	2.2368	2.4500	3.2703
2000	Computer Sci A	2.7963	1.7143	1.9481	2.2857	3.1934
2001	Computer Sci A	2.8654	2.1613	1.9390	2.6774	3.2273
2002	Computer Sci A	2.8718	2.6250	2.2561	2.3878	3.2700
2003	Computer Sci A	2.8254	2.0435	2.3140	3.0417	3.1088
1998	Computer Sci AB	3.4335	2.3333	1.8333	2.4000	3.4015
1999	Computer Sci AB	3.3308	3.4286	2.0455	2.2000	3.4400
2000	Computer Sci AB	3.3341	2.1000	2.5000	2.8333	3.6215
2001	Computer Sci AB	3.2682	1.5000	2.9375	3.3846	3.5345
2002	Computer Sci AB	3.1978	3.7500	2.0769	3.6667	3.3870
2003	Computer Sci AB	3.4181	2.3750	3.2000	3.6667	3.8544
1998	Economics Macro	3.0317	2.2326	2.3198	2.6986	3.0483
1999	Economics Macro	3.1073	2.3684	2.2576	2.3679	3.1192
2000	Economics Macro	3.0014	2.1647	2.0423	2.3739	3.0464
2001	Economics Macro	2.9709	2.0185	1.8405	2.0773	2.9462
2002	Economics Macro	3.0668	2.0781	2.0112	2.2318	3.0751
2003	Economics Macro	2.9907	2.2321	1.8619	2.3140	2.9989
1998	Economics Micro	3.0278	1.9615	2.3487	2.4677	3.0642
1999	Economics Micro	3.0279	1.9000	2.1619	2.2593	3.1710
2000	Economics Micro	2.7738	1.6348	1.9273	2.1111	2.9356
2001	Economics Micro	2.9980	2.1444	2.0337	2.1132	3.0296
2002	Economics Micro	2.9168	1.9474	2.0138	2.0395	3.0209
2003	Economics Micro	3.0448	2.4132	2.1818	2.4394	3.1220
1998	English Lang/Comp	2.9304	2.1407	2.1808	2.4771	3.1185
1999	English Lang/Comp	2.8556	2.1663	2.2073	2.3099	3.0506
2000	English Lang/Comp	2.8574	2.1353	2.0511	2.1922	3.0800
2001	English Lang/Comp	2.6800	1.9884	1.9965	2.0414	2.9374
2002	English Lang/Comp	2.7875	2.0223	2.0341	2.1491	3.0040
2003	English Lang/Comp	2.7525	2.0465	2.0167	2.1346	2.9248
1998	English Lit/Comp	3.0075	2.2716	2.2543	2.4431	3.1686
1999	English Lit/Comp	2.9474	2.1992	2.2628	2.3945	3.2029
2000	English Lit/Comp	2.9613	2.1410	2.1330	2.3113	3.2251
2001	English Lit/Comp	2.8794	2.1946	2.1422	2.2237	3.1041
2002	English Lit/Comp	2.8929	2.1791	2.0992	2.1948	3.1271
2003	English Lit/Comp	2.8469	2.1786	2.1656	2.3045	3.0629
1998	Environmental Sci	2.8881	1.6471	2.0455	1.6667	2.8756
1999	Environmental Sci	2.9257	1.3860	1.6489	1.6102	3.0299
2000	Environmental Sci	2.8810	1.5172	1.7406	1.8759	3.1134
2001	Environmental Sci	2.6676	1.5588	1.7523	1.7888	2.9697
2002	Environmental Sci	2.6551	1.8581	1.6804	2.0685	2.9918
2003	Environmental Sci	2.4613	1.6158	1.6214	1.7713	2.7676

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
1998	French Lang	2.4127	2.1765	1.9262	2.2642	2.8301
1999	French Lang	2.4609	2.3871	1.6595	2.2626	2.8969
2000	French Lang	2.3576	2.6471	1.7269	2.1316	2.7109
2001	French Lang	2.3607	2.7188	1.6855	2.1078	2.5938
2002	French Lang	2.3903	2.2558	1.6603	1.9615	2.7555
2003	French Lang	2.4301	2.2955	1.7464	2.1856	2.7352
1998	French Lit	3.0222	***	***	3.0000	3.7447
1999	French Lit	2.9231	***	2.5000	4.5000	3.9130
2000	French Lit	3.6667	***	2.5000	3.3333	3.3276
2001	French Lit	2.9286	***	3.5000	3.0000	3.4923
2002	French Lit	3.6667	***	1.6667	2.0000	3.3766
2003	French Lit	3.0323	***	3.6000	1.6667	3.0260
1998	German Lang	2.8171	3.0000	2.5000	2.5000	3.2368
1999	German Lang	3.1818	3.5000	2.4000	2.7500	2.9964
2000	German Lang	2.7792	3.0000	2.4167	2.0000	3.2435
2001	German Lang	2.8602	2.0000	1.6667	2.5000	3.1141
2002	German Lang	2.8539	4.0000	1.6667	1.0000	3.3496
2003	German Lang	3.1928	3.0000	1.7778	2.2222	3.0435
1998	Govt & Pol Comp	2.7130	2.0000	2.4074	2.6316	2.7500
1999	Govt & Pol Comp	2.9410	2.5000	2.3971	2.3158	2.8471
2000	Govt & Pol Comp	2.6484	2.3409	2.0313	2.5238	2.7046
2001	Govt & Pol Comp	2.7569	2.0169	1.9640	2.2800	2.7051
2002	Govt & Pol Comp	2.8157	2.2340	2.0563	2.3256	2.8521
2003	Govt & Pol Comp	2.7597	1.8800	2.0979	2.0615	2.9070
1998	Govt & Pol US	2.7884	2.2355	2.2049	2.2727	3.0237
1999	Govt & Pol US	2.7702	2.1536	2.2134	2.3554	3.1342
2000	Govt & Pol US	2.6425	1.9880	1.9780	2.1155	2.9577
2001	Govt & Pol US	2.6453	2.0462	1.9835	1.9578	2.9643
2002	Govt & Pol US	2.4914	1.9601	1.8516	1.9087	2.8430
2003	Govt & Pol US	2.4932	1.9489	1.8401	1.9521	2.8685
1998	History European	2.9660	2.3551	2.4407	2.6138	2.9503
1999	History European	2.8782	2.1613	2.1222	2.4481	2.9183
2000	History European	2.9019	2.1477	2.0884	2.3780	2.9093
2001	History European	2.7957	2.0736	1.9702	2.1100	2.8065
2002	History European	3.0211	2.1542	2.1771	2.2440	2.8963
2003	History European	2.9277	2.1172	2.0405	2.1860	2.8593
1998	History US	2.8463	2.0626	2.1621	2.4239	2.9302
1999	History US	2.7227	2.0447	1.9804	2.1859	2.8456
2000	History US	2.7337	2.1436	1.9582	2.1467	2.8933
2001	History US	2.7043	1.9873	1.9416	2.0150	2.8296
2002	History US	2.7485	2.0449	1.9302	2.0982	2.8789
2003	History US	2.6947	1.9332	1.8537	2.0007	2.8063

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
2002	History World	2.5130	1.6833	1.6163	1.7010	2.7832
2003	History World	2.5806	2.1650	1.9326	1.8925	2.8548
2001	Human Geography	2.8889	2.5556	2.0250	1.7895	2.9107
2002	Human Geography	2.9863	1.5000	1.8387	2.2381	3.1618
2003	Human Geography	3.1714	3.3333	2.3182	1.9412	3.0170
2000	International Eng		***	***	***	3.0000
2001	International Eng	3.0000	***	***	***	***
2002	International Eng	5.0000	***	***	***	***
1998	Latin Lit	3.6667	***	***	3.0000	1.0000
1999	Latin Lit	1.7727	***	1.0000	***	1.8750
2000	Latin Lit	2.3333	***	***	***	3.3333
2001	Latin Lit	1.7826	***	***	***	3.2500
2002	Latin Lit	2.5714	***	***	***	2.1053
2003	Latin Lit	3.4286	1.0000	2.0000	***	2.5926
1998	Latin Vergil	2.7791	3.0000	3.0000	2.0000	2.6067
1999	Latin Vergil	3.5660	3.5000	4.0000	***	3.1475
2000	Latin Vergil	3.1268	2.3333	2.6667	3.0000	2.9358
2001	Latin Vergil	2.9423	2.5000	3.0000	2.6667	3.2817
2002	Latin Vergil	2.6522	2.0000	1.4615	1.5000	2.8989
2003	Latin Vergil	2.6000	1.7143	1.6667	***	2.9457
1998	Music Theory	3.3770	3.0000	1.8636	2.8000	3.3512
1999	Music Theory	3.5882	3.2857	2.4000	2.9375	3.5800
2000	Music Theory	3.4359	1.9286	2.1429	2.1000	3.2906
2001	Music Theory	3.4653	1.9000	2.2286	2.7143	3.4066
2002	Music Theory	3.4560	2.3333	2.0652	2.6522	3.2878
2003	Music Theory	3.2234	2.8000	2.2857	2.6667	3.1684
1998	Physics B	2.8322	1.7778	1.8084	2.4595	3.1244
1999	Physics B	2.6572	1.6812	1.8089	1.9739	2.9132
2000	Physics B	2.5797	1.6203	1.6171	1.8550	2.7572
2001	Physics B	2.5652	1.6939	1.6691	1.6966	2.8085
2002	Physics B	2.4954	1.7778	1.6371	1.7550	2.6430
2003	Physics B	2.6542	1.9355	1.7477	1.8187	2.8254
1998	Physics C: E&M	2.8937	1.7778	1.6429	2.2222	3.0045
1999	Physics C: E&M	3.0231	1.4000	2.0909	1.7500	3.3889
2000	Physics C: E&M	3.1095	2.0000	2.2000	2.3333	3.1987
2001	Physics C: E&M	3.2290	2.4000	2.6111	2.4000	3.4277
2002	Physics C: E&M	3.2094	2.0000	2.8947	2.4545	3.2563
2003	Physics C: E&M	3.0913	2.1000	2.3548	2.7143	3.3683

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
1998	Physics C: Mech	2.9870	2.1364	2.2826	2.3500	3.1385
1999	Physics C: Mech	3.0329	1.6250	1.8592	2.4063	3.1855
2000	Physics C: Mech	3.0581	2.3143	2.1618	2.5000	3.3473
2001	Physics C: Mech	3.0837	2.0286	1.9752	2.3200	3.3597
2002	Physics C: Mech	3.0048	1.9767	1.6413	2.1930	3.0390
2003	Physics C: Mech	3.0662	2.0526	1.8544	2.3380	3.2722
1998	Psychology	3.1720	2.1622	2.4224	2.7407	3.3008
1999	Psychology	3.0805	2.3636	2.4084	2.6308	3.3078
2000	Psychology	3.2477	2.4381	2.2252	2.4732	3.3048
2001	Psychology	3.0654	2.1356	2.1634	2.2857	3.0745
2002	Psychology	3.3378	2.4873	2.2935	2.5455	3.4220
2003	Psychology	3.2316	2.1774	2.1731	2.3421	3.3736
1998	Spanish Lang	2.8435	2.3228	4.2959	4.4312	2.9388
1999	Spanish Lang	2.8411	2.4420	4.2406	4.3865	2.9120
2000	Spanish Lang	2.8364	2.5028	4.4132	4.5234	2.9545
2001	Spanish Lang	2.7587	2.2850	4.2775	4.3932	2.8550
2002	Spanish Lang	2.6942	2.2070	4.1358	4.2637	2.7557
2003	Spanish Lang	2.7700	2.1899	4.3110	4.4135	2.7961
1998	Spanish Lit	3.6614	3.0000	2.9670	3.1081	3.5749
1999	Spanish Lit	3.4138	1.7000	2.9002	3.0786	3.4430
2000	Spanish Lit	3.0174	2.4167	2.8786	3.0207	3.2727
2001	Spanish Lit	3.3475	2.6000	2.9482	2.9923	3.5066
2002	Spanish Lit	3.4000	2.6667	2.8929	2.9324	3.4902
2003	Spanish Lit	2.8409	1.4000	2.3731	2.4386	3.0896
1998	Statistics	2.9377	2.1228	1.8009	2.3467	2.9149
1999	Statistics	2.8105	1.8933	1.8865	1.9196	2.8285
2000	Statistics	2.7831	1.6748	1.7051	1.9787	2.7547
2001	Statistics	2.8276	1.8613	1.8654	1.8932	2.9399
2002	Statistics	2.8288	1.9611	1.8003	2.1131	2.7682
2003	Statistics	3.0261	2.0046	2.0303	2.2000	2.9525
2002	Studio Art 2D Des	3.2993	2.5833	2.7215	2.8000	2.7676
2003	Studio Art 2D Des	3.0417	2.3077	2.7792	2.8077	2.9840
2002	Studio Art 3D Des	2.8500	2.2500	3.2143	2.7143	3.0156
2003	Studio Art 3D Des	2.9130	2.2000	2.6154	2.0000	2.7636
1998	Studio Art Drawing	3.1064	2.8182	2.7333	2.6190	2.9917
1999	Studio Art Drawing	2.9115	3.0769	2.8718	2.8571	3.0898
2000	Studio Art Drawing	3.3182	2.7368	2.7632	2.9000	3.2026
2001	Studio Art Drawing	3.3874	2.7895	2.8875	2.7368	3.2768
2002	Studio Art Drawing	3.2895	2.9714	2.7676	2.9394	3.2885
2003	Studio Art Drawing	3.1516	2.6765	2.7317	2.6118	3.0317

YEAR	SUBJECT	ASIAN-AMERICAN	AFRICAN-AMERICAN	MEXICAN-AMERICAN	OTHER HISPANIC	WHITE
1998	Studio Art Gen	3.0521	2.9000	2.6224	***	2.7262
1999	Studio Art Gen	3.1340	2.6667	2.7130	***	2.8497
2000	Studio Art Gen	3.1892	2.8500	2.6667	***	2.8858
2001	Studio Art Gen	3.1787	2.5758	2.7870	***	3.0320

***indicates no scores in that subject area for that ethnic group that year

