

This document contains *Chapter 5: Trends in Other Important Student Outcomes*, from the Third Biennial Report, California High School Exit Examination (CAHSEE) published on February 1, 2006, by the California Department of Education. The entire report is available at <http://www.cde.ca.gov/ta/tg/hs/thirdbiennial.asp>.

Chapter 5: Trends in Other Important Student Outcomes

Introduction

The introduction of the CAHSEE, a high-stakes program, raised expectations and concerns for a number of stakeholders. Predictions of the impact of the CAHSEE ranged from positive to negative, including:

- Employers and postsecondary institutions could have more confidence in what high school graduates know.
- Attention would be brought to bear on students who were struggling academically and supports would ensure that these students received an adequate education.
- Parents of struggling students would receive a clear and early message that their children might not graduate, thus inspiring increased parental involvement.
- Advanced coursework such as AP courses and electives would suffer because resources would be diverted to struggling students.
- Graduation rates would decline due to students meeting all other graduation requirement but being unable to pass the CAHSEE.
- Struggling students would become discouraged and dropout rates would increase.

Throughout the six years of the CAHSEE evaluation project, we have reported enrollment trends as a proxy for determining whether dropout rates have increased. In the most recent year of the evaluation, 2005, we expanded our look at relevant data sources—in part because additional data are now readily available, and in part due to the maturity of the CAHSEE program and the immediacy of its impact.

These data sources cannot provide cause-and-effect conclusions. Rather, they are interrelated indicators that provide evidence supporting or negating some of the predictions listed above. For example, if the statewide dropout rate were to increase, we could not say with certainty that the CAHSEE requirement was the cause in any or all cases; however, if the dropout rate remained the same or decreased, this would be evidence against the expectation that the CAHSEE would cause it to rise.

Previous chapters in this report addressed actual CAHSEE results as well as the impressions of district superintendents, district curriculum heads, principals, department heads, and teachers. This chapter investigates other data sources to determine trends that may be related to the CAHSEE. Specifically, we look at enrollment trends over time for clues of changes in dropout rates, officially reported graduation and dropout rates, evidence of shifts in college preparation, and evidence of shifts in participation—and success—in Advanced Placement (AP) courses.

HumRRO's Year 6 Evaluation Report is available at <http://www.cde.ca.gov/ta/tg/hs/evaluations.asp> and provides details that are summarized here.

Where more recent data have been made available on public Web sites, the charts have been updated with additional information. The following is a brief summary of salient points.

Enrollment Trends

A key question addressed in the independent evaluation of the CAHSEE is the impact of the new graduation requirement on dropout and graduation rates. Because no students have been denied diplomas directly because of inability to pass the CAHSEE as of this report, various proxies serve to estimate the effect. The definitions of dropout rates have evolved in recent years and controversies regarding the “appropriate” calculations remain. Therefore we begin by examining patterns of overall enrollment figures to approximate the extent to which students in each grade do not proceed to the next grade with the rest of their classmates. These data do not permit the tracking of individual students moving in and out of the California school system over time, but rather are gross measures of the total number of enrollees at various points in time.

As reported in previous reports in this evaluation series (see Wise, et al., 2004), California enrollment rates have historically seen a sharp increase in 9th grade and a reduction in enrollment in each subsequent year. We refer to this enrollment decline after 9th grade as a “drop-off” in enrollment. The specific reasons for the grade 9 bubble and grade 10 drop-off are not readily measurable, although experts conjecture that some of the difference may reflect students who completed insufficient credits in the 9th grade to earn 10th grade status the following year. Some of the difference may indicate students who dropped out of school altogether.

Figure 5.1 shows the decrease in enrollment from the 9th to the 10th grade for several recent years, going back far enough to precede the introduction of the CAHSEE. In this, and subsequent, charts a shorter bar indicates a lower drop-off rate, consistent with greater persistence in high school. As noted in the 2004 evaluation report (Wise, et al., 2004) the 10th grade drop-off rate increased for the Class of 2006 (from 5.6% the previous year to 6.1%), primarily due to a larger than usual increase in the 9th grade enrollment. It was hypothesized that more students were being retained in 9th grade. In the 2004–2005 school year, the drop-off rate declined somewhat to 5.9 percent.

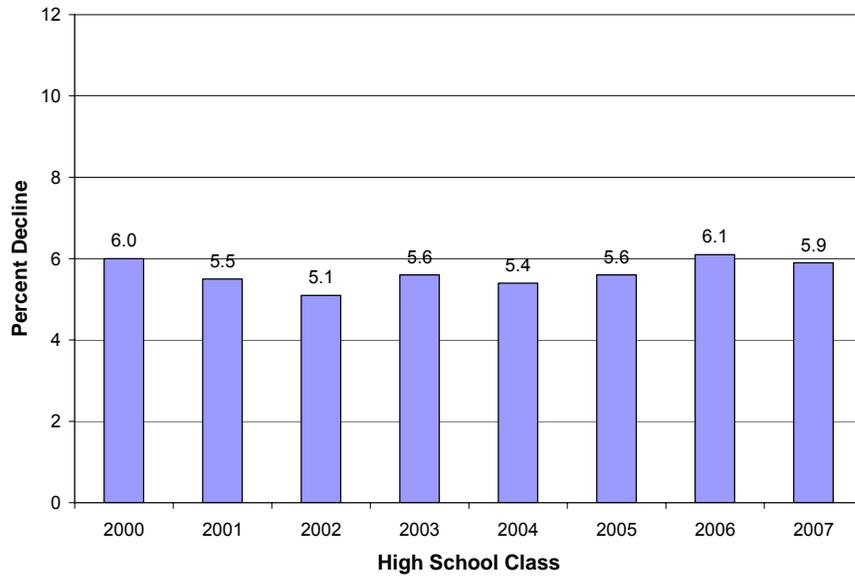


Figure 5.1. Enrollment declines from 9th to 10th grade by high school class.

Figures 5.2 and 5.3 show similar information for the drop-off between enrollments in higher grades. Results show that the drop-off rate between 10th and 11th grade enrollments continued the substantial decline begun with the Class of 2004. The drop-off rate between 11th and 12th grade enrollments decreased substantially (2.2 percentage points) with the Class of 2003. The reduced drop-off rate of the past two years has continued for the Class of 2005. Grade 11 enrollment figures for the Class of 2006 were not available at the time of this report.

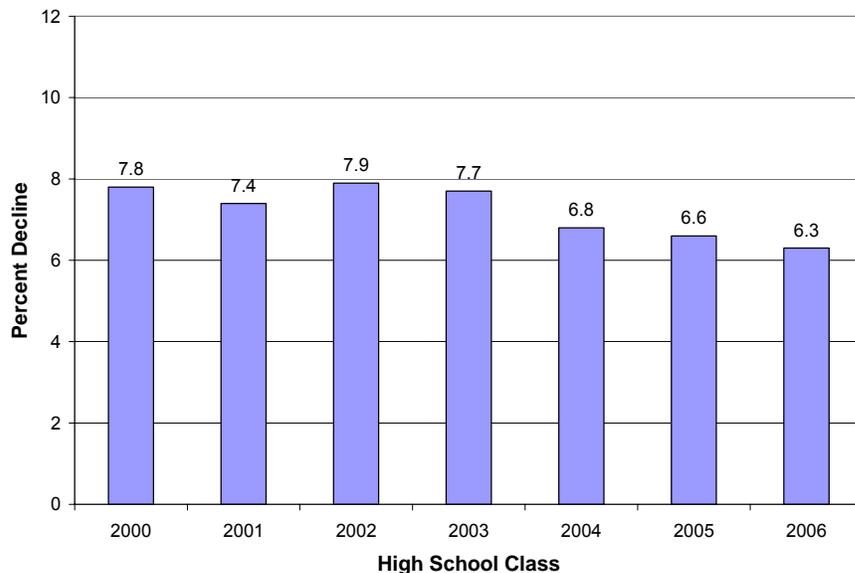


Figure 5.2. Enrollment declines from 10th to 11th grade by high school class.

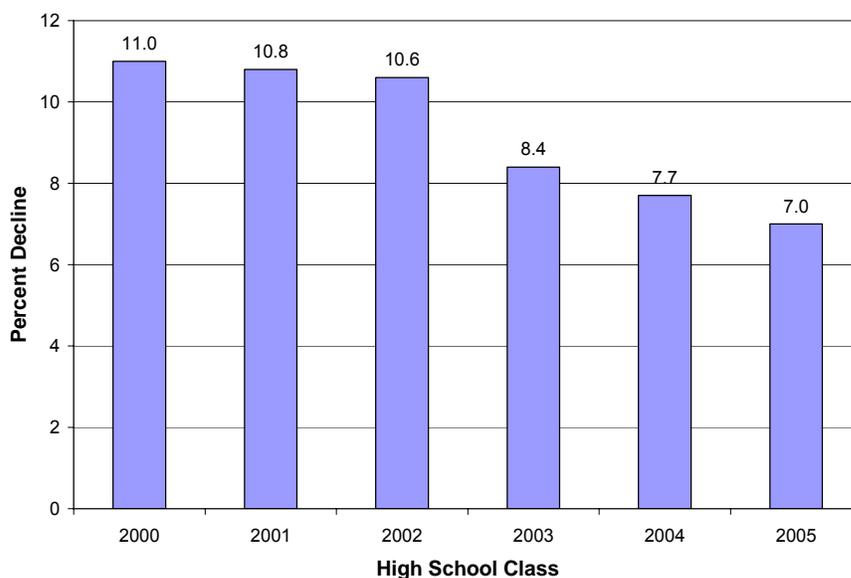


Figure 5.3. Enrollment declines from 11th to 12th grade by high school class.

Graduation and Dropout Rates

In addition to tracking enrollment trends for evidence of students dropping out of the system, we also investigated the California Department of Education's (CDE) official reports of dropout and graduation rates. Various approaches to the calculation of graduation and dropout rates have been under considerable scrutiny in public media recently, so multiple approaches are presented here. In fact, California revised its dropout calculation in 2003 to better align with rates reported by the National Center for Education Statistics (NCES). We will look first at CDE-reported single-year dropout rates and then at cumulative four-year dropout rates along with graduation rates as reported by CDE.

Single-year Dropout Rate

The CDE dropout calculation was modified in October 2003 to conform to guidelines issued by NCES. The previous definition is provided in Figure 5.4 and the new definition is provided in Figure 5.5 (Retrieved on 07/21/05 from http://data1.cde.ca.gov/dataquest/gls_drpcriteria.asp).

Dropout Criteria

For years prior to 2002-03 the California Department of Education defined a high school dropout as a person who met the following criteria:

- was formerly enrolled in grades 7, 8, 9, 10, 11, or 12
- has left school for 45 consecutive school days and has not enrolled in another public or private educational institution or school program
- has not re-enrolled in the school
- has not received a high school diploma or its equivalent
- was under twenty-one years of age
- was formerly enrolled in a school or program leading to a high school diploma or its equivalent

This includes students who have moved out of the district, out of state, or out of the United States and are not known to be in an educational program leading toward a high school diploma or its equivalent.

Districts are also responsible for determining the status of their "no-show" students. "No-shows" are students who completed a grade, but did not begin attending the next grade the following year.

Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.4. CDE explanation of dropout rate calculation prior to October 2003.

What criteria are used to define a dropout?

In October, 2003, the California Department of Education (CDE) adopted the National Center for Educational Statistics (NCES) Dropout definition. Following the new guidelines, the CDE now defines a dropout as a person who:

1. Was enrolled in grades 7, 8, 9, 10, 11 or 12 at some time during the previous school year **AND** left school prior to completing the school year **AND** has not returned to school as of Information Day.
OR
2. Did not begin attending the next grade (7, 8, 9, 10, 11 or 12) in the school to which they were assigned or in which they had pre-registered or were expected to attend by Information Day.

Exclusionary Conditions

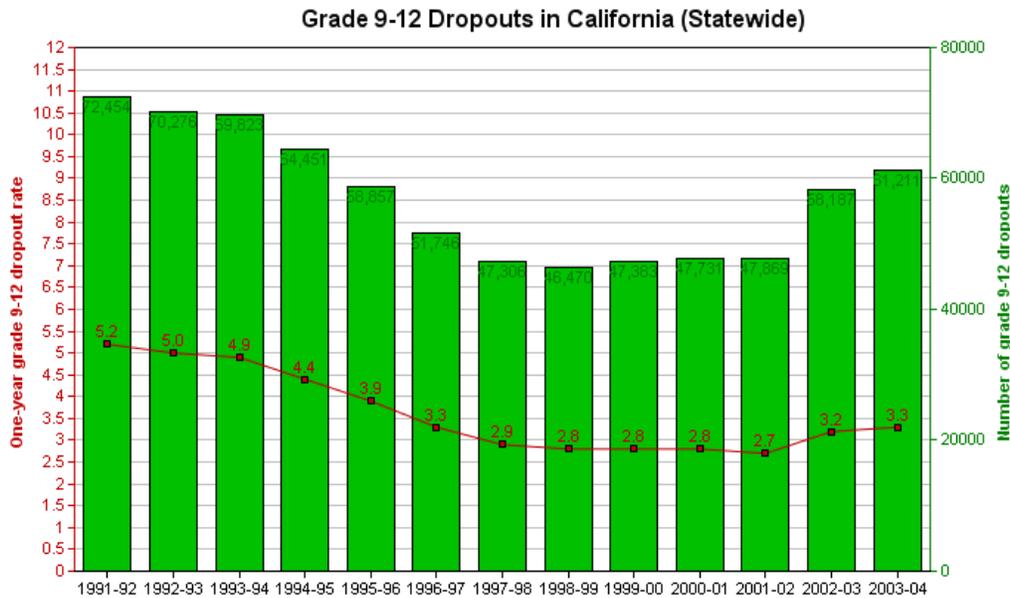
For each student identified in the criteria above, the student is **not a dropout** if:

- The student has re-enrolled and is attending school.
- The student has graduated from high school, received a General Education Development (GED) or California High School Proficiency Examination (CHSPE) certificate.
- The student has transferred to and is attending another public or private educational institution leading toward a high school diploma or its equivalent. (Does not include adult education programs unless the district can verify that these students are still enrolled in a GED or high school completion program on Information Day.)
- The student has transferred to and is attending a college offering a baccalaureate or associate's program.
- The student has moved out of the United States.
- The student has a temporary school recognized absence due to suspension or illness.
- The school has verified that the student is planning to enroll late (e.g., extended family vacation, seasonal work.)
- The student has died.

Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.5. CDE explanation of dropout rate calculation as of October 2003.

The official CDE dropout counts for single-year dropouts are displayed in Figure 5.6. The figure is reproduced here from the CDE Web site. The single-year dropout calculation derives the total number of dropout students from grades 9–12 as a percentage of the total grade 9–12 enrollment in a single school year. The bars in Figure 5.6 indicate the number of students who dropped out and the line graph indicates the dropout rate. According to the state’s public Web site information, dropout rates have increased each school year from a low in 2001–2002. The reader is reminded that the definition of dropouts changed in 2002–2003, so direct comparison across that time boundary is tenuous. However, the last two school years depicted in the chart both used the same metric, reflecting an increase of 0.1 percentage points in the single-year dropout rate, from 3.2 percent to 3.3 percent. As of the writing of this report, statistics for school year 2004–2005 were not yet available.



Source: <http://data1.cde.ca.gov/dataquest/DropStateGraph.asp?Level=State> on 08/17/05
 Note. In 2002–03 the California Department of Education started using the National Center for Education Statistics (NCES) dropout criteria. 1 Year Grade 9–12 Dropout Rate Formula: (Gr. 9–12 Dropouts/Gr. 9–12 Enrollment)*100

Figure 5.6. Dropout rates according to CDE.

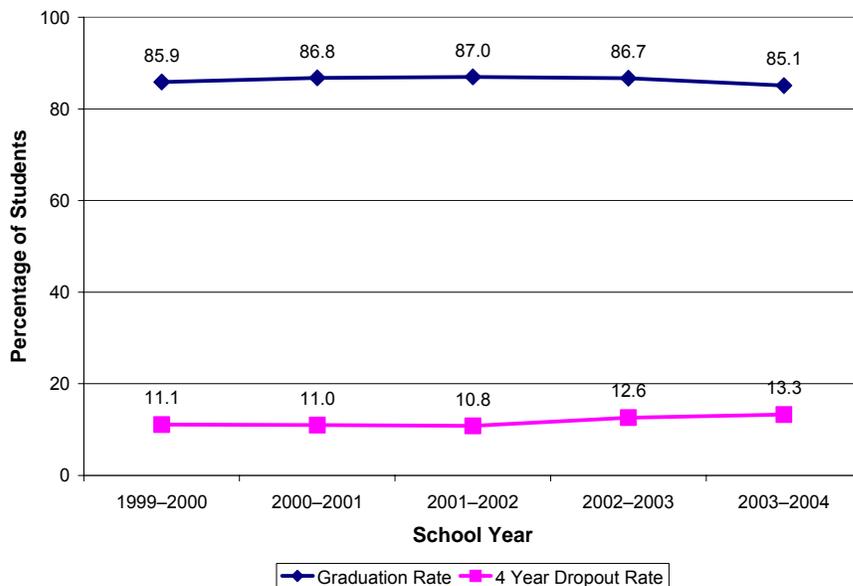
Cumulative Four-year Dropout Rate and Graduation Rate

Another common dropout metric is a cumulative four-year dropout rate. This accounts for students within a class cohort who drop out, over time, at the 9th, 10th, 11th, or 12th grade level. This rate may more closely reflect what the public perceives as the meaning of dropping out of high school.

Figure 5.7 displays two series of official CDE rates: four-year dropout and graduation. The dropout rate is calculated as the number of students in a cohort class

who dropped out in grade 9, 10, 11, or 12, as a percentage of the 9th grade entering school population. The graduation rate is based upon the NCES definition: the numerator is the number of graduates in Year 4 and the denominator is the sum of the number of graduates in Year 4, plus the dropouts in grades 9–12.

Inspection of Figure 5.7 reveals that both rates shifted slightly in school years 2002–2003 and 2003–2004. Over these two years the graduation rate has dropped by 1.9 percentage points and the dropout rate has increased by 2.5 percentage points. Neither of these rates reflects the Class of 2006, which will be the first class subject to the CAHSEE requirement. Therefore any effect of the CAHSEE cannot be determined at this point, but the tracking of these rates over time will provide a context when the Class of 2006 reaches graduation time.



Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.7. Graduation and dropout rates.

Figure 5.8 disaggregates the four-year dropout rate by race/ethnicity. Inspection of this chart reveals that reported dropout rates for all groups increased with the introduction of the new calculation in 2003. Restricting the comparison to the two most recent years, which shared a common metric, indicates that the most marked increase is among African American students. Asian, Hispanic, and White students also dropped out at a slightly higher rate in 2003–04 than in the previous cohort, while American Indian, Pacific Islander, and students who reported multiple (or no ethnicities) dropped out at a slightly lower rate.

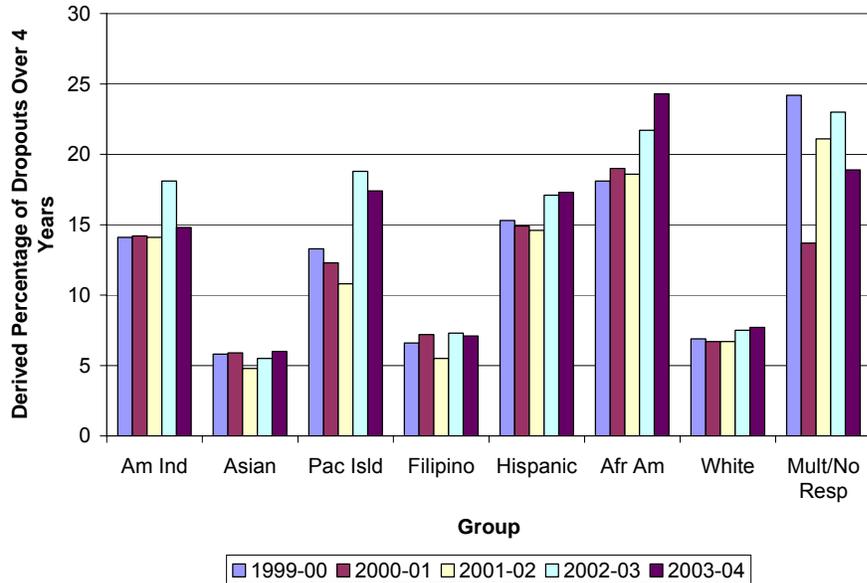


Figure 5.8. Four-year derived dropout rates by race/ethnicity over time.

College Preparation (SAT/ACT/UC & CSU courses)

Indicators of educational quality include the rigor of coursework undertaken in high school, as well as the proportion of students intending and prepared to engage in postsecondary education. We turn now to two sets of indicators (other than the CAHSEE) of student preparedness for college.

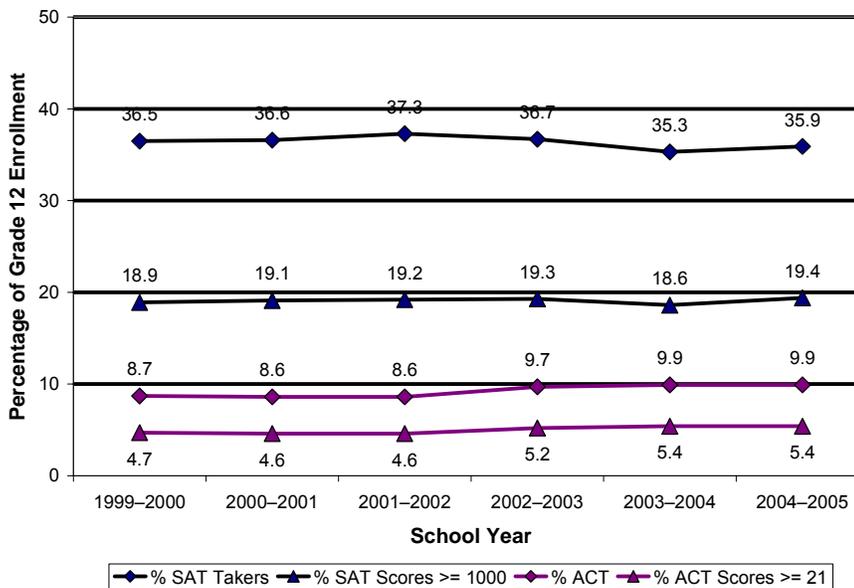
College Entrance Examination Participation and Performance

The level of student engagement in education (and aspirations for further education) is reflected in the proportion of students who sit for college entrance examinations. College readiness can also be examined by looking at the performance of students who take such tests. These two factors are confounded, in that higher participation may be related to lower scores overall. For example, if only a small, high-performing proportion of a class takes an exam, scores will be high but participation will be low. If a higher number of students—that may include students who perform at a lower level—are encouraged to test, the average scores will drop but participation rates will increase. Interpretation of patterns requires judicious care because of this confounding effect.

Two examination programs are prevalent in the United States: the SAT and the ACT. Figure 5.9 indicates the percentage of California students participating in these two examination programs. The lines with diamond-shaped markers represent the proportion of the grade 12 class who took either the SAT or ACT. Nearly 36 percent of the Class of 2005 took the SAT and almost 10 percent took the ACT. The percentage of seniors taking the SAT dropped slightly in the last two years available here, from 37.3

percent to 35.3 percent, then back up to 35.9 percent.⁶ ACT participation increased somewhat, from 8.6 percent to 9.9 percent, over that same period.

Figure 5.9 also shows the percentage of students who achieved a particular score on these two exams, over time. These cut points are used for reporting on the CDE website and hence are used here. The lines with upward-arrow pointers reflect the percentage of students achieving a minimum combined score of 1000 on the SAT or 21 on the ACT, respectively.⁷ The percentage of California students reaching an ACT score of at least 21 has increased over time, reaching its highest level within this timeframe (1999–2000 to 2004–2005) of 5.4 percent in the two most recent school years. On the other hand, the percentage of students reaching at least 1000 on the SAT was at 18.6 percent, its lowest level in this 5-year timeframe, in the 2003–2004 school year, then increased to 19.4 percent, its highest level, in the 2004–2005 school year.



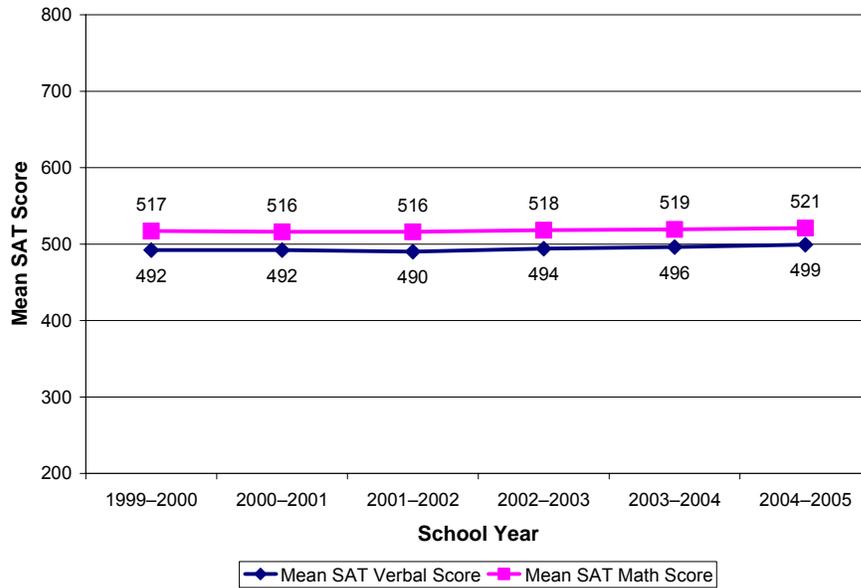
Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.9. SAT and ACT participation rates and success rates over time.

Another metric to assess success on tests such as the SAT and ACT is average score on the exam. Figure 5.10 indicates that average SAT math and verbal scores have steadily, albeit slowly, increased each year since 2001. Figure 5.11 shows a pattern of relatively flat average scores on the ACT exam.

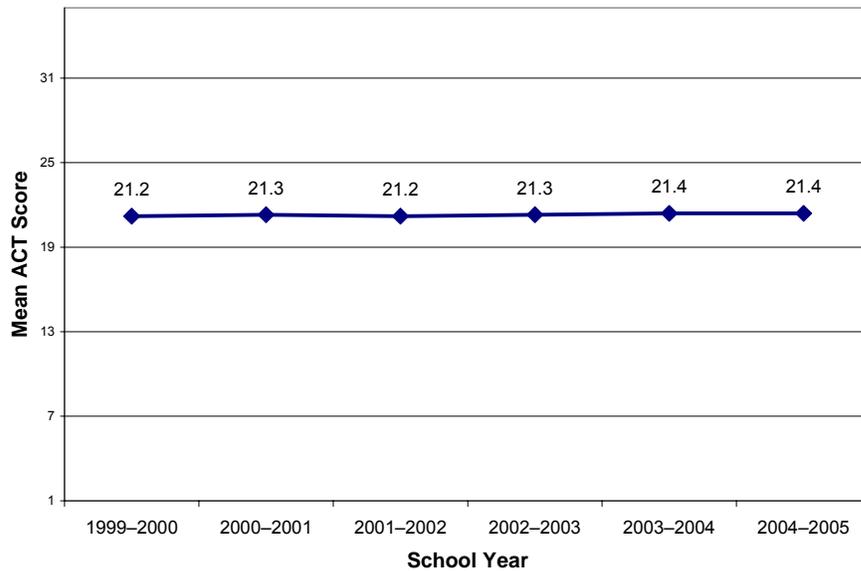
⁶ The College Preparation Partnership Program (CPPP) was in effect from 1999–2003. The program was established by SB 1697 to provide access to preparation courses for SAT and ACT to students in qualifying high schools. Grants were awarded to high schools to fund training with reimbursement once students took the SAT I. Student participation in this program dropped somewhat in 2002–2003 (from 19,684 the previous year to 14,823) and the program ended in 2003. The effects of this program’s activities and termination may account for some of the test-taking trends seen in Figure 6.8.

⁷ The national rank for a combined SAT score of 1000 is the 45th percentile. The national rank for an ACT Composite score of 21 is the 57th percentile.



Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.10. SAT average math and verbal scores over time.



Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

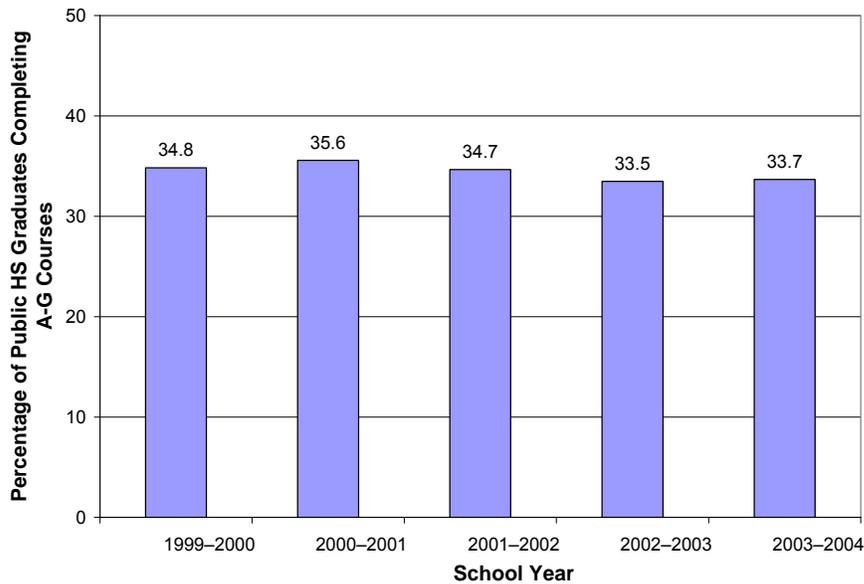
Figure 5.11. ACT average scores over time.

College Preparatory Coursework

Another indicator of educational quality is the caliber of coursework completed in high school. Two of California’s statewide university systems, the University of California and the California State University, have developed a list of courses known as “A–G courses” that are required for incoming freshmen. This list includes 16 units of

high school courses, of which at least seven must be taken in the last two years of high school. In this system, a unit represents a full year—or two semesters—of study.

Figure 5.12 indicates the percentage of public high school graduates who completed A–G courses over several years. The rate has held fairly steady at about a third of the graduating class each year. There has been a slight decrease since a peak in 2001. The most recent data available on the California Postsecondary Education Commission (CPEC) Web site references the Class of 2004; 33.7 percent of this class completed the A–G courses.



Source: California Postsecondary Education Commission website (<http://www.cpec.ca.gov>)

Figure 5.12. A–G course completion over time.

The CPEC Web site provides a variety of breakdowns of the A–G course completion information. While Figure 5.12 depicts rates of course completion as a percentage of high school graduates, Table 5.1 reports these rates as a percentage of freshman enrollment four years earlier. This table also provides a breakdown by race/ethnicity and gender. For example, the number of Black males completing A–G courses in the Class of 2004 was 11 percent of the number of Black male freshmen in 2000–2001.

Table 5.1. A–G Course Completions as a Percentage of Freshmen Four Years Earlier, by Race/Ethnicity and Gender

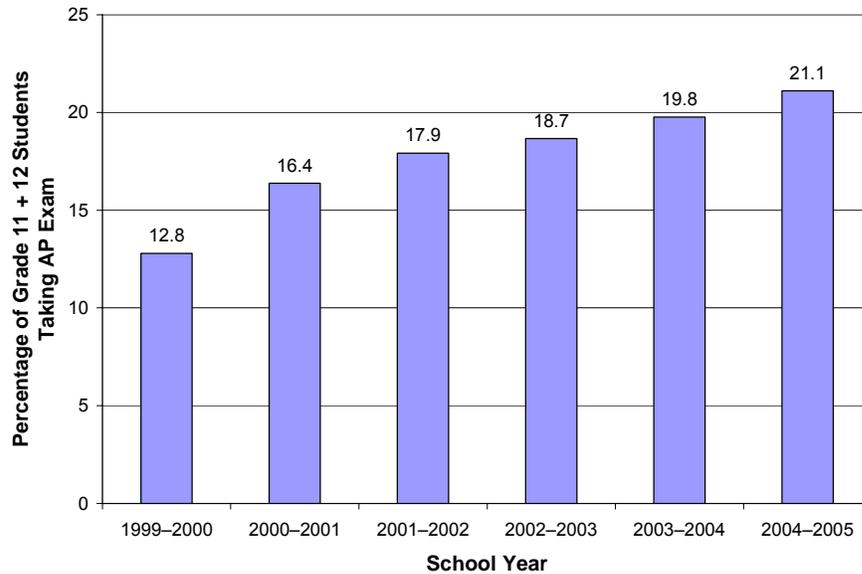
Race/Ethnicity	Gender	Graduation Year (Class)				
		2000	2001	2002	2003	2004
Black	Male	12%	11%	11%	11%	11%
	Female	18%	18%	19%	19%	19%
Native American	Male	13%	12%	14%	15%	16%
	Female	18%	19%	19%	20%	20%
Asian	Male	45%	45%	45%	45%	45%
	Female	56%	57%	57%	57%	59%
Pacific Islanders	Male	15%	17%	17%	17%	19%
	Female	20%	21%	23%	24%	23%
Latino	Male	10%	10%	10%	10%	10%
	Female	15%	16%	16%	16%	17%
White	Male	27%	27%	26%	26%	26%
	Female	35%	36%	36%	36%	37%
Filipino	Male	33%	33%	32%	35%	35%
	Female	47%	48%	46%	48%	49%
Overall		24%	24%	24%	24%	24%

Note. Data retrieved from <http://www.cpec.ca.gov/accountability/atoareport.asp> [Note: the preceding Web address is no longer valid.] on August 18, 2005. Race/ethnicity designations differ from the rest of this report but mirror those on the CPEC Web site.

AP Test Achievement

The College Board's Advanced Placement (AP) program comprises a set of college-level courses offered in high school. Students have the option of taking a standardized AP examination after completing the course to earn college credit and/or gain placement in advanced college courses. AP exam participation rates and scores are indicators of high school course rigor as well as college-going intentions. The College Board currently offers 34 AP courses and exams over 19 subject areas, but not all courses are offered at all high schools.

Figure 5.13 displays AP examination participation rates among California students over time. Each bar represents the percentage of juniors and seniors taking at least one AP exam in a given school year. The rates increased every year between 1999–2000 and 2003–2004, the most recent year available on the CDE Web site.

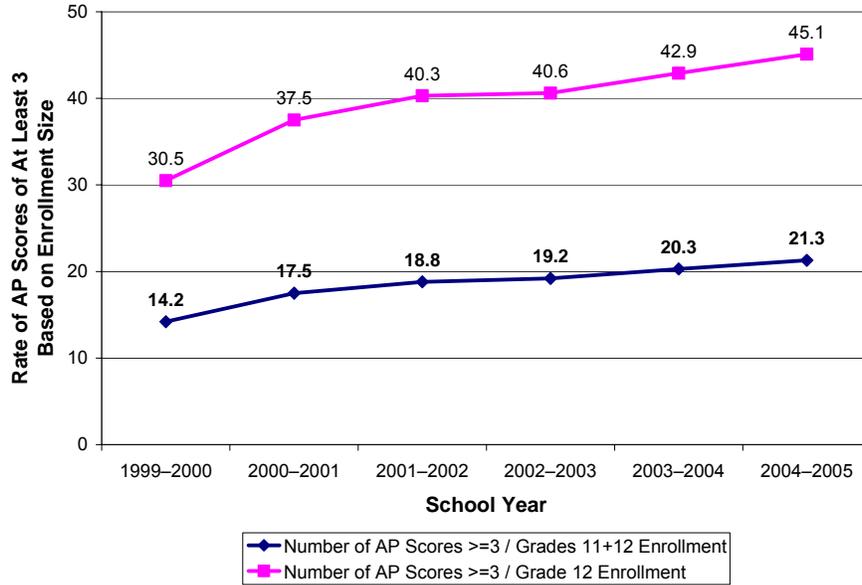


Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.13. AP participation rates over time.

The CDE Web site also reports AP pass rates over time. These data are summarized in Figure 5.14 but require some explanation. The numerator in each calculation is the number of AP tests on which a score of 3 or greater⁸ was earned. The denominator for one line is grade 12 enrollment; the denominator on the other line is total grade 11 and grade 12 enrollment. Note that students who earned a score of 3 or better on multiple AP exams were counted multiple times in the numerator, but only once in the denominator. Therefore, the rate of 14.2 percent pass rate among 12th graders in 1999–2000 does not indicate that 14.2 percent of high school seniors earned AP credit; in fact, Figure 5.12 indicates that only 12.8 percent of seniors took one or more AP exams. However, these rates are useful to assess overall AP impact over time. Inspection of Figure 5.13 reveals that AP pass rates have increased over time. This is a rough indicator of more students taking a higher number of more rigorous high school courses.

⁸ AP exam scores are on a scale of 1–5. Typically postsecondary institutions grant credit or advanced placement for minimum scores of 3 or 4. A score of 3 is a commonly accepted indicator of success on an AP exam.



Source: California DataQuest System (<http://data1.cde.ca.gov/dataquest>)

Figure 5.14. AP pass rates over time (i.e., number of AP exam scores ≥ 3 as a percentage of student enrollment).

College/University Enrollment

Finally, we turn toward college and university enrollment as an indicator of the extent to which high schools are preparing—and perhaps encouraging—students to continue their education beyond high school. Information presented here was gathered from the California Postsecondary Education Commission (CPEC) website. CPEC reports information about enrollments in various strata of California colleges and universities (i.e., University of California [UC], California State Universities [CSU] and California Community Colleges [CCC]) over time. Enrollment data are provided for all college-level students, as well as first time freshmen (FTF) from public and private California high schools. Data regarding California high school graduate enrollment as FTF are provided here with a caveat; these data do not indicate the number or percentage of California high school graduates who enroll in out-of-state schools. Therefore these data are not presented as a complete and direct measure of college attendance after high school, but only as a partial picture.

Table 5.2 lists counts of public and private high school graduates, public school graduates completing A–G courses, and FTF enrollments by California system and overall, over time.

Table 5.2. California Postsecondary Education Commission (CPEC) Counts of High School Graduates and First Time Freshmen (FTF) Enrollments

Year	High School Graduates			First-Time Freshmen			Total
	All	Public	A-G Courses	UC	CSU	CCC	
2000	340,462	309,866	107,926	27,443	35,564	113,351	176,358
2001	344,217	316,124	112,469	28,949	38,291	118,003	185,243
2002	356,685	325,895	112,934	29,870	39,574	129,929	199,373
2003	373,162	341,078	114,194	30,133	39,728	117,833	187,694
2004	375,940	343,481	115,680	27,663	40,164	128,638	196,465

Source: California Postsecondary Education Commission website (<http://www.cpec.ca.gov>)

Figure 5.15 reports the same enrollment in the three strata of California universities and colleges, as a percentage of public and private high school graduates. Inspection of the figure indicates that enrollment in University of California and California State University schools, as a percentage of public and private high school graduates, has decreased somewhat in 2003 and 2004. However, once enrollment in community colleges is included, overall enrollment increased slightly in 2004—to a total of 52.3 percent across all three systems.

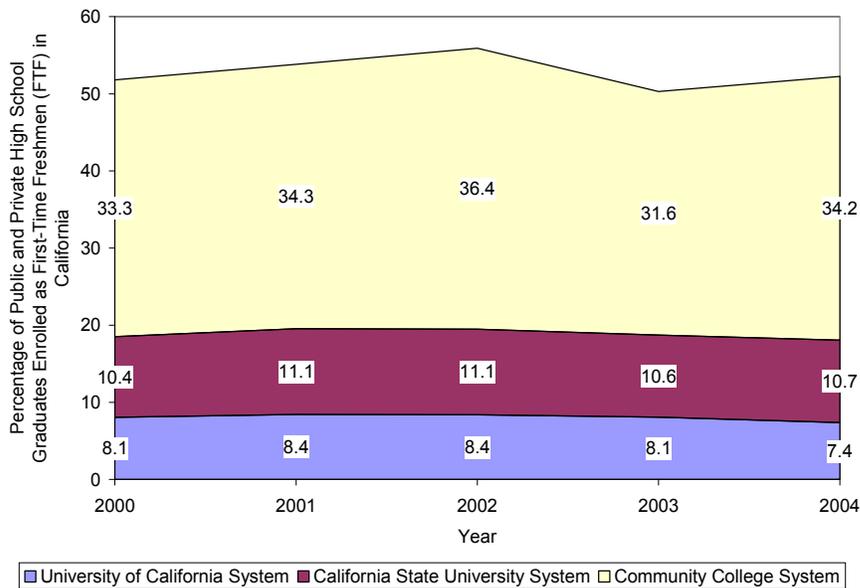


Figure 5.15. Percentage of California public and private high school graduates enrolling as first time freshmen (FTF) in California colleges and universities.

Summary Findings

Data sources outside the CAHSEE program provide indications of the state of education in California, and can be used to infer effects of the CAHSEE program on education as a whole. Since no students have yet been held to the CAHSEE requirement as a condition of obtaining a high school diploma, direct effects cannot be assessed at this point. Arguably, these effects—if any—may not be seen until after the Class of 2006 graduates. However, we begin analyzing trends in this report, and will continue to follow these trends in subsequent CAHSEE evaluation reports.

Inspection of enrollment levels, by grade and over time, was used as a proxy for existing calculations of dropout rates. Enrollment patterns indicate that the drop-off rate from 9th to 10th grade has risen above historical levels for the Classes of 2006 and 2007; however, the rates have been declining in the 11th and 12th grades. This may be an artifact of changes in retention rates that are not directly measurable.

Official dropout rate calculations indicate that both single-year and four-year dropout rates have increased slightly as of 2004. These results should be interpreted with caution because CDE amended its definition of dropouts in 2003; it now aligns with federal NCES guidelines. High school graduation rates declined slightly in 2003 and again in 2004.

Participation in, and performance on, college entrance examinations paint a mixed picture. The percentage of students taking the SAT exam declined in 2003 and 2004 but recovered somewhat in 2005. The percentage of students earning a combined score of 1000 or greater reached a high in 2005. The average SAT score increased steadily between 2002 and 2005. The percentage of students taking the ACT exam increased over that same time frame, as did the percentage of students earning a composite score of 21 or better. Average ACT scores have remained relatively flat.

Rates of completion of A–G courses dropped in 2003 but recovered somewhat in 2004. Meanwhile, participation in AP exams, and scores of 3 or greater on those exams have steadily increased since 2000.

We note that the above results are consistent with a March 2005 report published by The California Postsecondary Education Commission, *University Preparedness of Public High School Graduates* (Report 05-5). This report's conclusions, which investigated students through the Class of 2003, included:

- a lower proportion of students are enrolling in A–G coursework;
- a lower proportion of students are taking the SAT I admissions test;
- SAT I and ACT test performance has improved; and
- a higher proportion of students are enrolling in AP courses and taking AP examinations.

Percentages of enrollment of California high school graduates as first time freshmen have decreased in both University of California and California State University institutions in 2003 and 2004, while enrollment rates in California community colleges dropped in 2003 then increased in 2004.

These results provide a mixed view of the state of education in California high schools in recent years. HumRRO's Year 7 report will include CAHSEE performance and survey results through the spring of 2006. The survey questions will be expanded to provide insight regarding students who have met all graduation requirements except the CAHSEE. These data, taken in conjunction with the data sources described in this chapter, should provide a rich depiction of the impact of the CAHSEE on the California educational system.