



Clarifying
Complex
Education
Issues

California Student Achievement

Multiple views of K–12 progress



For almost a decade, California has committed strongly and invested heavily in improving student performance and in preparing its students for success in the 21st century. The years from 1994 to 2001 witnessed a windstorm of policy and program activity, all built around the concepts of academic standards and accountability.

The state began several years of substantial investment in school reform and in the late 1990s adopted academic content standards to guide classroom instruction. Federal, state, and local revenues to K–12 education increased from about \$6,000 per pupil in 1994–95 to more than \$8,000 per pupil in 2001–02, with much of it earmarked for specific programs and initiatives related to student performance. This money included billions to pay for reducing class sizes to 20 in grades K–3, plus funds for other programs aimed at the goal that all children be able to read by the end of third grade. In recent years, California has also put more than \$400 million annually into new textbooks aligned to those standards. The funding and programs for providing teacher professional development have been reorganized around the standards.

A strong emphasis on accountability has accompanied this investment. Students are now required to take a whole series of new state tests aimed at measuring their academic progress. Schools and teachers have received sizeable incentives for meeting performance goals on those tests. New approaches to student retention, scholarships to reward exemplary test results, and a new high school exit exam have been instituted to persuade students to become more serious about school. And schools are ranked according to their students' performance on the tests.

At the center of California's testing system is the Standardized Testing and Reporting (STAR) program. Still under development, STAR is intended to show how well students are performing based on the statewide standards and to leverage school action to achieve those standards. In theory, the content of the tests should signal what is important to teach and learn. The assessments should also provide feedback on how students are doing and thus enable school leaders to diagnose curriculum strengths and weaknesses. Coupled with sanctions and/or incentives, the

assessments are expected to motivate educators, students, and parents to pay attention and act to improve student performance. As some put it—what you test is what you get—a phenomenon that many research studies have confirmed.

California's implementation of standards-based reform is very much a work in progress, particularly at the local level. The results of some of the tests most closely aligned to the standards are just beginning to become available. State curriculum guidelines and textbook adoptions were just recently completed, and professional development programs aligned with the standards are not yet universally available. Thus, while local implementation is well underway, it is far from complete. Test scores cannot yet fully measure the impact or effectiveness of state reforms.

The current STAR results—particularly when combined with information from other measures—do paint a picture, albeit incomplete, of student performance in California. This report looks at STAR and other statewide measures (see the box on page 2) to explore the complex question of how well California's schools and students are doing. Along with a review of API scores, it looks at test results by subject to give a full picture of what is known about student performance in the areas of English/language arts, mathematics, science, and history/social science. It also uses these same measures to explore how various subgroups are doing and to examine the extent to which the performance gap is closing for traditionally underperforming students—those who are economically disadvantaged, historically low-achieving ethnic and cultural groups, and English language learners.

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Current Indicators of Student Performance

The Standardized Testing and Reporting (STAR) Program

California initiated STAR in 1998 with the administration of the **Stanford Achievement Test Series, Ninth Edition, Form T (Stanford-9) in grades 2 through 11**. A norm-referenced test, the Stanford-9 was developed to reveal how students perform relative to a national comparison group and not how well students were achieving state standards. In fact, the Stanford-9 was adopted in advance of California having agreed upon standards. Since completing the adoption of academic content standards in the four core curriculum areas in 1999, state officials have worked to bring STAR into alignment with those standards.

The **California Standards Tests** were specifically designed or selected to reflect the state standards. Student scores will be compared to an expected level of performance as set by the state. Beginning with the English/language arts test in 2001, the standards-referenced scores indicate the extent to which students are meeting state-defined content standards based on five performance levels: advanced, proficient, basic, below basic, and far below basic. **Writing assessments** based on the standards were administered to students in grades 4 and 7 for the first time in 2001. Results will be incorporated into the Standards Tests results for those grade levels beginning in 2002. Similar tests and performance levels for math are part of the 2002 STAR program, and the same will be true for science and history/social science by 2003. Development continues for Standards Tests in eighth grade for history/social science and in fifth grade for science.

In their first year in a California public school, Spanish-speaking students are required to take the **Spanish Assessment of Basic Education, Second Edition (SABE-2)**, which tests their academic knowledge in their native language. Some school districts pay to administer the test to students who have been in their schools longer. The **California English Language Development Test (CELDT)**, which evaluates students' understanding of English, was administered to all English learners statewide in 2001. The first results were released on April 30, 2002.

California High School Exit Exam (CAHSEE)

A high school exit exam in language arts and mathematics was adopted in 1999, and about

78% of ninth graders took it voluntarily in spring 2001. The first full administration was in 2002. Passage of the exit exam is expected to be required for high school graduation beginning with the class of 2004.

Dropout Rates

Also related to high school students, **one-year and four-year dropout rates** provide two different ways to measure how many students leave the K–12 system without a diploma.

Voluntary Tests for High School Students

A number of tests indicate how schools are serving their highest-ability students. Both performance and the number of exams taken are of interest in looking at the results of these voluntary tests. California's **Golden State Exams**, which qualify students for a distinguished diploma, test mastery of specific course content. They are taken after students complete the appropriate class. **Advanced Placement (AP) exams** are given to high school students who take college-level courses (approved by the College Board) at their high schools. **College entrance exams, such as the SAT and ACT**, are taken by students who are potentially college bound. They provide an indicator of both students' expectations and preparation to attend college.

College Placement Tests

Both the University of California (UC) and California State University (CSU) systems use tests to decide whether their entering students have adequate mathematics and writing skills to handle college coursework or if they need remedial help. Many see these tests as providing an external comparison point for judging the quality of the states' K–12 system. Some, however, question their reliability and say they are not aligned with California's K–12 standards.

The National Assessment of Educational Progress (NAEP)

Periodically, NAEP assesses national performance in the major subject areas—reading, mathematics, science, writing, etc. A sample of students takes the tests. California participates in NAEP's state-by-state program and is thus able to compare its performance to that of many other states.

For information about ongoing changes to STAR, see the box on page 10.

API Performance: Are schools meeting their accountability goals?

From 1999 through 2001, the Stanford-9 functioned as the core of the state's testing and school accountability systems. It was also the only measure used to calculate the state's Academic Performance Index (API), a single index score used to judge the performance of each school in California. Thus the index provides a gross indicator of how schools performed across the various subjects assessed by the Stanford-9 and whether schools made progress between 1999 and 2001 across all the subject areas included on the test. Later in this report, Stanford-9 results in each subject area are explored in more depth and in relationship to other measures of student performance.

The API scores range from 200 to 1000. All schools are expected to make progress annually toward a target score of 800. Through 2001, the school scores used students' national percentile ranking (see the glossary on page 20) as the measure of performance. The scores were calculated based on the percentage of students scoring in each of five performance levels. English/language arts scores have priority in a weighting formula. For grades 2–8, reading/language arts (including spelling), makes up 60% of the index, while mathematics performance is weighted at 40%. For grades 9–12, reading/language arts accounts for 40% of the score, while the remaining three subjects—math, science, and social studies—each get 20% weighting.

Figure 1 shows that, based on the median API, performance on the Stanford-9 test has improved most in California's elementary schools. While elementary and middle schools started out at similar levels in 1999, elementary schools made more progress than middle schools. High school performance started lower and has shown the least improvement. Moreover, while it is too early to confirm a trend based on only two years of improvement data, it appears that performance gains may be beginning to slow down or level out. That is, all three school levels showed substantial growth from 1999 to 2000, but less from 2000 to 2001. At the high school level, performance actually decreased slightly.

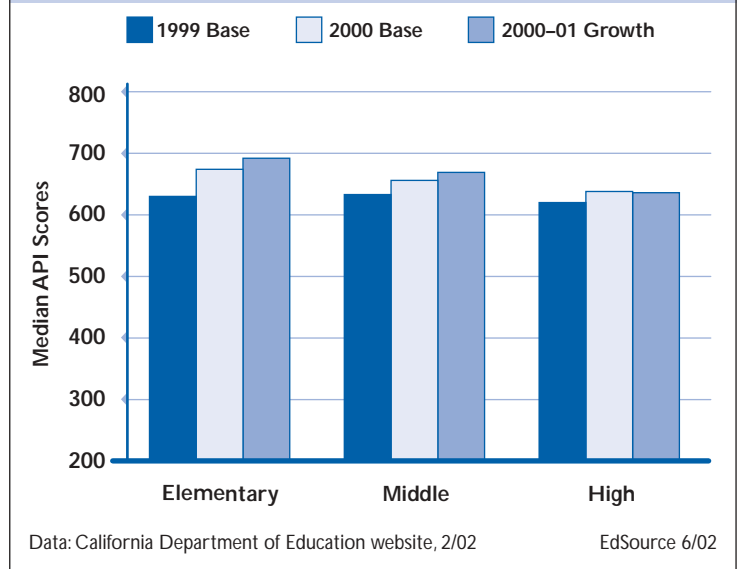
The data tell a similar story about the number of schools meeting their API performance targets. This is an indication of improvement both for the school population as a whole and for significant subgroups of students. In the first year of the program, the great majority of elementary and middle schools met their targets, 79% and 61% respectively. For 2000 to 2001, fewer schools met their targets, but still a majority at both school levels did. The picture is less positive at the high school level, with only 42% of schools meeting their targets in the first year and 27% in the second.

Such leveling off on high-stakes tests has been seen in other states. One hypothesis holds that it occurs when the lim-

Figure 1

API, 1999 to 2001:

Elementary schools show the greatest improvement



its of test preparation are reached. In other words, familiarizing students with the content and format of tests produces early, easy gains. Another perspective is that early increases in test performance reflect the fact that some skills are easier to teach and thus get addressed first. Later gains are more difficult to accomplish because they require more sophisticated skills. Both opinions lead to a similar conclusion: Continued improvement requires sustained effort and substantial change in what children are learning.

What to watch for

The API will gradually become more focused on the Standards Tests and thus reflect more accurately schools' progress on teaching the state's academic content standards. This transition could cause some difficulties for schools, and it may take time before local educators are able to fully understand and adapt to these changing expectations.

- ✓ The 2001–02 Base API and growth targets that schools received in January 2002 reflect more than Stanford-9 performance for the first time. They include results of the Standards Tests in English/language arts.
- ✓ In the fall of 2002, schools will receive 2001–02 Growth API scores based on student performance on the state tests administered in spring 2002.
- ✓ State officials expect the 2002 Base API, which will be announced in January 2003, to include the Standards Tests in math. The High School Exit Exam and the Standards Tests in history/social science and science could be folded in as well.

How are students achieving in reading and language arts?

This section pulls together all the statewide measures used to evaluate student performance in reading and English/language arts. The sections that follow do the same for the other three core subject areas: mathematics, history/social science, and science. This presentation provides a picture both of the measures currently available in each subject and how well they can be used to evaluate the state's progress toward its adopted standards.

California has considerably more statewide student performance information available in English/language arts than in the other subject areas. As the box on available test results on this page details, the state uses multiple measures and many of them have been in place for several years. An improvement in Stanford-9 scores indicates that California schools may be making some

progress, particularly at the elementary and middle school levels. However, the other measures including the Standards Tests — even absent any growth information — make it clear that student performance is not good enough. The state has a long way to go to meet its goal of all students achieving the high standards it has set in language arts.

State standardized test results available in English/language arts

- *Stanford-9 (Form T), 1998 to 2001. Reading, language arts, and spelling: all students grades 2–8. Reading and language arts: all students grades 9–11.
- *Standards Tests in English/language arts, 2001 only (using state-determined performance levels). All students grades 2–11.
- *Writing assessments, 2001 only. All students grades 4 and 7.
- California High School Exit Exam, 2001 only. Reading, writing, and language arts. Voluntary, 78% of students in class of 2004.

* Part of California's Standardized Testing and Reporting (STAR) program.

Additional measures for English/language arts

- UC and CSU remediation rates for writing through 2000–01. College-bound students only.
- 1998 National Assessment of Educational Progress (NAEP). Sample of students, grades 4 and 8.

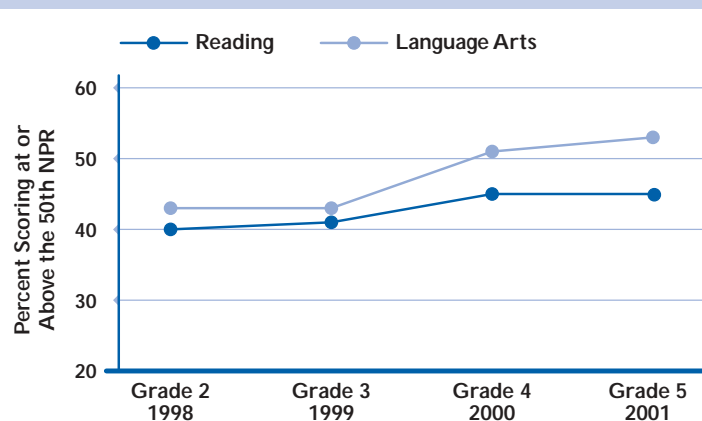
Stanford-9 results compare California students to a national sample

As would be expected based on the API results, the overall patterns in the Stanford-9 results in reading and language arts are positive. Again, however, the results vary by grade level.

In this report, the data are shown longitudinally and are based on the percentage of students who score at or above the 50th national percentile rank (NPR). Thus, for elementary schools, the scores reported here follow the progress of the group of students who were second graders in the spring of 1998, the first time the Stanford-9 was administered statewide. With this approach, it is possible to see how the test scores of this group of students have improved over the course of their elementary school careers. This view of students' progress over time provides a better picture of what value schools are adding to students' performance than do analyses that compare performance at a single grade level from year to year (e.g., how second graders perform each year). Because this year's second graders may be different in important ways from last year's, grade-level comparisons can reflect the differences in students more than the impact of their education. This is particularly true at the school level, where there are relatively small numbers of students at each grade.

Figure 2

Stanford-9 English/language arts by cohort, 1998 to 2001:
1998's second graders improved more in language arts than reading



Data: California Department of Education

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Figure 2 shows how elementary students are performing across reading and language arts. This group of students was in reduced-size first-grade classes in 1996–97 and was in sixth grade during the current school year, 2001–02. In reading, the results show modest improvement. As students moved from second grade to fifth grade, the percentage scoring at or above the national average increased from 40% to 45%, a total of 5%. Results in language arts and spelling show stronger increases in performance, with 10% and 11% increases respectively. It is also of note that a majority of these students in 2001 scored at or above the national average in language arts, and at nearly that level in spelling.

The performance of third graders is of special interest as it measures California's highly-publicized goal of having all students reading at grade level by the end of the third grade. The portion of students scoring at or above the national comparison group in reading has grown from 38% in 1998 to 46% in 2001. While students are still scoring below the national average, it is worth underscoring that California's results include virtually all public school children, including those (more than 30% of third graders) who are not fully proficient in English. Because the national norm group includes very few such students (2%), it would be surprising to see California performance at the national average.

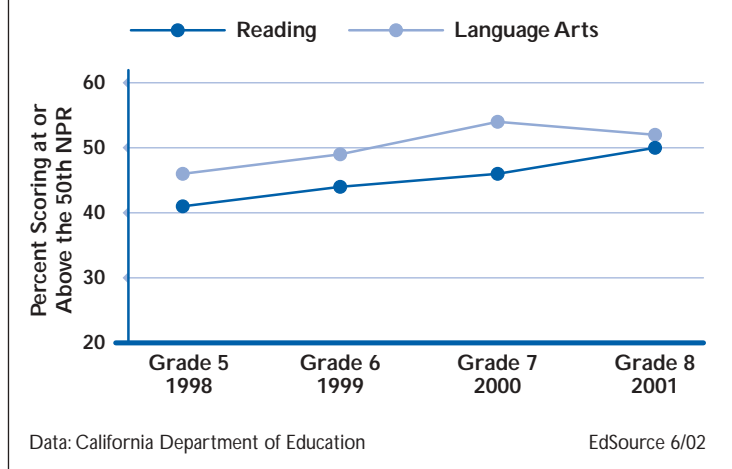
Figure 3 traces the performance of the group of students who started as fifth graders in 1998 and completed eighth grade in 2001. The scores show improvement in reading, language arts, and spelling. The one exception is spelling in the eighth grade, a subject that tends to get less explicit attention as students get older. For reading and language arts, the percentage of students scoring at or above the national comparison group increased 9% and 6% respectively. In both areas, more than half of California's students have reached the national average. Performance in spelling, in contrast, shows a slight, two-point decline over the period.

The picture for English/language arts at the high school level is less positive, though the scores are somewhat controversial. Figure 4 follows the group of students who were eighth graders in 1998 and completed 11th grade in 2001. It appears that while these students are approaching the achievement of the national comparison group in language arts, they are still well below it in reading. Spelling is not tested in high school.

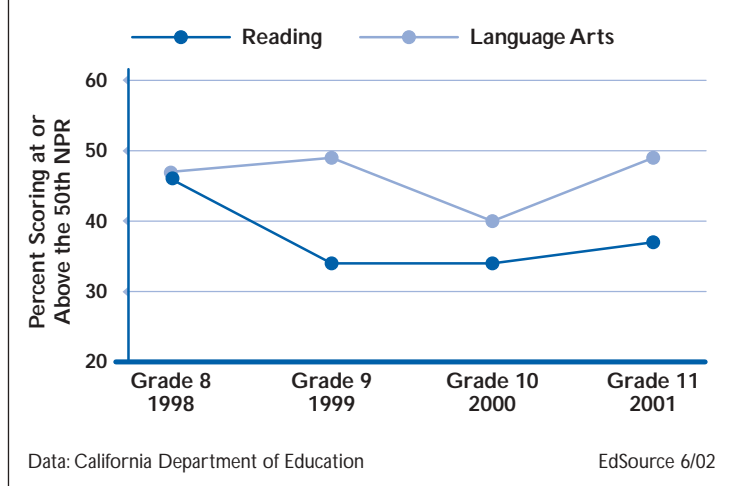
For high school reading performance over time, the data show a 9% decline in students scoring at the national average. At the same time, it shows a very small, 2% increase in students performing at that level in language arts. Testing experts have raised the possibility that some aspects of the low performance on reading may be due to technical problems with the test itself. Other states using the Stanford-9 have reported the same rather dramatic decline at ninth grade, leading to questions about the "norming process" used by test developer Harcourt to set the comparison levels. Experts speculate that the norm group at the high school level was somehow higher performing and not comparable to the norm samples at lower grade levels. Thus students in California and other states look relatively lower performing in comparison. However, because Harcourt has not released technical data about its norming process, the speculation remains just that.

Figure 3

Stanford-9 English/language arts by cohort, 1998 to 2001:
1998's fifth graders improved more in reading than language arts


Figure 4

Stanford-9 English/language arts by cohort, 1998 to 2001:
Controversial scores show 1998's eighth graders declined in reading but improved in language arts

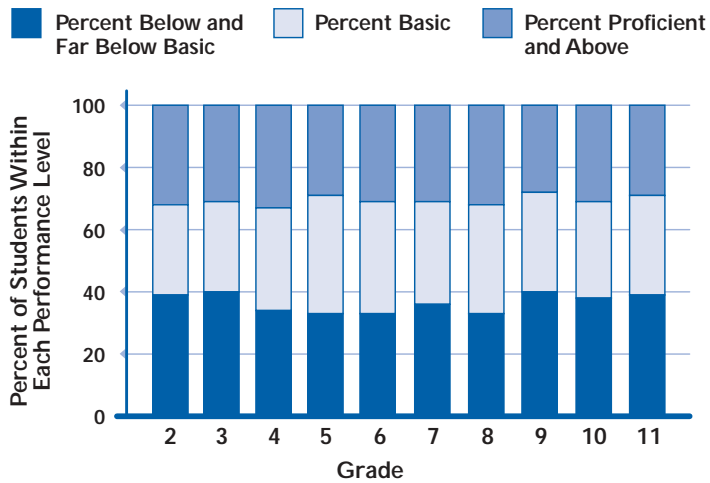


Performance on California Standards Tests sets a benchmark

While the Stanford-9 results principally show how well students are performing relative to a national comparison group, the California Standards Tests are intended to provide a picture of how students are doing relative to the state's subject matter standards. Students' test scores are used to classify them into various proficiency levels. The relationship between the scores and the levels was determined by panels of stakeholders and affirmed by the California State Board of Education.

Figure 5

Standards Tests English/language arts, 2001:
First-year scores separate students into approximate thirds based on performance



Data: California Department of Education

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The state rates students' performance based on five proficiency levels: **far below basic**, **below basic**, **basic**, **proficient**, and **advanced**. The goal, which many describe as lofty, is for students to reach the proficient level. The creation of three categories below that acknowledges that the state's students have a substantial way to go to reach proficiency on the standards. During the development process, the consensus was that the tests sampled the more difficult elements of the state's standards and that the proficiency levels maintained high expectations. Students' current performance represents the starting place. How they progress in future years will be the central issue.

Performance standards for the Standards Tests in English/language arts were just established in 2001, so only one year of data is currently available. As Figure 5 shows, less than a third of the state's students at any grade level are currently considered proficient or above on the state's English/language arts standards. At all grades, performance is within a narrow range of 29–33% of students classified as proficient or above.

A writing test was also added to STAR in 2001 for students in fourth and seventh grades, but performance level expectations were not established the first year. Fourth-grade students are asked to write a narrative, a response to literature, or a summary. Seventh graders write a fictional or autobiographical narrative, a response to literature, a persuasive essay, or a summary. Student writing

is scored on a four-point rubric, and two readers score each student's work for a total of eight possible points. The initial performance results in 2001 put most students' performance at a five or lower, with fourth graders performing markedly better. Only 14% of fourth graders and 6% of seventh graders received scores of six or higher.

Additional data about high school performance reinforce concerns

Some additional data are available related to high school students' performance in English/language arts. While limited in scope, this information largely reinforces the perception that California's high school students are performing well below expectations in this subject area.

Preliminary High School Exit Exam results show low performance

The state is in the process of implementing its new California High School Exit Exam (CAHSEE), which tests student knowledge of math and English/language arts. As with the Standards Tests, the content of the CAHSEE is considered challenging and establishes high expectations for what students need to know and be able to do to qualify for a high school diploma. The class of 2004 is currently expected to be the first required to pass it, but that requirement could be postponed.

In the spring of 2001, about 78% of California's ninth graders voluntarily participated in the first full administration of the exam. The English/language arts portion of the test is designed to reflect California's content standards through 10th grade and includes both multiple-choice questions and two writing samples. The passing score for this portion of the CAHSEE was set at 60% correct. By this standard, 64% of the volunteer ninth-grade test-takers passed.

College remediation rates show little change

Part of the concern with students' basic skills has come from California's higher education community. The University of California (UC) and California State University (CSU) systems point to the number of students entering their institutions who, based on placement test results, need remedial coursework to be ready for college level work. If students' skills are improving, we might expect the numbers of students needing such attention to decrease, but that has not occurred so far. In the CSU system, the most recent data show little change in the statistics from the mid-1990s to 2000–01, when 46% of first-time freshmen needed remediation in writing. In the state's elite University of California system, more than a third of incoming students failed to meet the minimal standards of writing proficiency as of 1998. More recent data are not available.

NAEP test results provide an external barometer

The National Assessment of Educational Progress (NAEP) is often referred to as “the nation’s report card.” NAEP was initially designed to provide a continuing barometer of how the nation’s children were doing academically. National consensus panels are convened periodically to determine what students should know and be able to do in each subject. Then tests are developed that both reflect these evolving frameworks and include items that link results from year to year. Performance levels are established to differentiate students scoring at below basic, basic, proficient, and advanced levels.

In recent years, state-by-state comparisons have become a regular part of NAEP. California’s NAEP results in reading thus provide an external indicator of how California students are performing compared to many other states. California has participated in bi-annual administrations of NAEP in reading and writing. Recently passed federal legislation reauthorizing the Elementary and Secondary Education Act (ESEA) may result in more frequent NAEP testing.

The most recent NAEP results for reading and writing are from 1998. They essentially show where student performance stood before the STAR testing program began. Results in reading at grades four and eight confirm that California students were scoring lower than those in other states and that the proportion of students reaching levels of proficiency were relatively low. Less than a quarter of California’s tested fourth and eighth graders were considered proficient or above in reading—20% and 22% respectively; and less than a fifth were considered proficient in eighth-grade writing. It will be interesting to see whether California students have progressed when more current state level NAEP results become available.

What to watch for

While English/language arts is the subject that is most comprehensively measured in California today, the next year or two will provide important additional information.

- ✓ The 2002 Standards Tests—including writing assessments in fourth and seventh grades—will enhance understanding of students’ progress against the state’s standards. Comparisons with progress on the Stanford-9 may also be informative.
- ✓ As of summer 2002, the entire class of 2004 will have taken the High School Exit Exam, and the first full set of results will be available.

Are California’s students doing well or poorly on standards-based assessments?

A look at students’ performance on the California Standards Test in English/language arts demonstrates just how difficult it is to answer this simple question clearly. The data indicate the following:

- ✓ Only about a third of students demonstrated that they were proficient or advanced at meeting the state’s expectations, the goal the state has established for all students.
- ✓ Only about a third of students showed less than a basic ability to meet the state’s expectations, which represent rigorous new standards that students and schools are just becoming familiar with.

California’s High School Exit Exam provides a similar dichotomy:

- ✓ For the English/language arts portion of the CAHSEE, the passing score was set at only 60% correct and yet only two-thirds of students were able to pass it.
- ✓ The English/language arts portion of the CAHSEE is considered quite rigorous, yet almost two-thirds of California freshmen who took the test successfully demonstrated their ability to pass it.

Are the scores good news or bad news? The answer is that it depends. Contrary statements about student performance can be accurate based on the same data. How you express the findings and interpret them often depends on the question you are trying to answer. So rather than just wondering how well students are doing, Californians are better served when they use assessment data to answer questions like these:

- ✓ Which schools or students are performing best and which worst?
- ✓ Given the rigor of the standards, are these scores what we would expect?
- ✓ From this point, what would adequate and positive progress look like? What level of growth is acceptable?

Certainly California students are not achieving as well as state leaders want them to on the standards-based assessments. But if one assumes that they are being asked to meet a high level of mastery, these first results may not be troubling so much as informative regarding how far the state has to go. Interpreting the results, and making fair judgments based on them, requires a balance between what is reasonable to expect this first year versus what California hopes all students can achieve.

Signs of progress in English/language arts

- ✓ A majority of fifth graders scored at or above the national average in language arts on the Stanford-9 in 2001.
- ✓ California third graders scoring at or above the national average in reading on the Stanford-9 increased from 38% in 1998 to 46% in 2001.
- ✓ In reading and language arts on the Stanford-9, more than half of eighth graders had at least achieved the national average by 2001.

How are California's students doing in mathematics?

State standardized test results available in mathematics

- *Stanford-9, 1998 to 2001. All students grades 2–11.
 - *Standards Tests in mathematics. Percentage correct only, with variations in test content and administration from 1999 to 2001. All students grades 2–7. Math students only, by course taken, grades 8–11.
 - California High School Exit Exam, 2001 only. Math based on standards, including some algebra. Voluntary, 78% of students in class of 2004.
- * Part of California's Standardized Testing and Reporting (STAR) program.

Additional measures for mathematics

- CSU remediation rates, 1990 to 2001. College-bound students only.
- 1996 and 2000 National Assessment of Educational Progress (NAEP). Sample of students, grades 4 and 8.

Mathematics has been an area of particular concern in California. This is in part because it is the curriculum area in which the state standards made the biggest change from current curriculum. The state has set Algebra I as a high school graduation requirement beginning in 2004, and coupled that with the expectation that students should actually complete the course in eighth grade. A survey conducted in 2000 as part of the High School Exit Exam development showed that prior to this state action, two-thirds of California school districts with high school students did not require all students to take Algebra I to earn a diploma. Since then, the number of students taking algebra has increased substantially.

For mathematics, the available measures are not as robust as in English/language arts. (See the box on this page.) The Stanford-9 is the only source of statewide information about how students have improved. Both the Standards Tests results and the High School Exit Exam yield only limited data thus far. NAEP results are of somewhat more interest here because 1996 and 2000 results are available, allowing some objective measure of improvement.

Stanford-9 results are positive

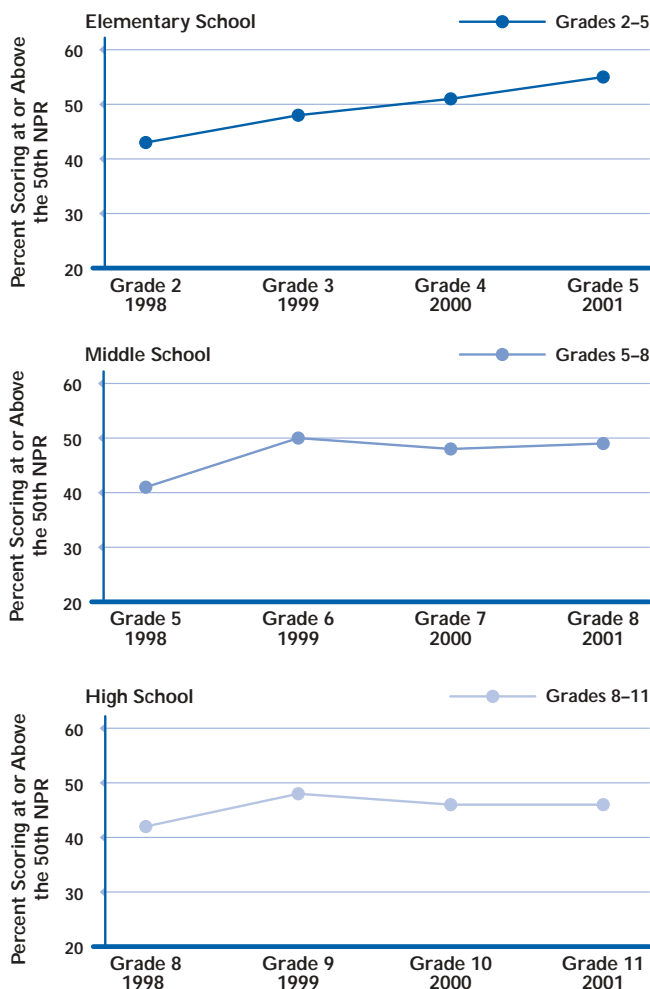
The results on the Stanford-9 shown in Figure 6 look at the data longitudinally, following specific student cohorts over the course of their elementary, middle, or high school experiences. The 2001 results and the rate of improvement in mathematics are both positive, particularly at the elementary school level.

The charts show how elementary, middle, and high school students have performed since 1998. At the elementary school level, the percentage of students scoring at or above the national comparison group moves from well below half to 55%, a 12-point gain over the four-year period. At the middle school level, only 41% of the cohort of students who started as fifth graders in 1998 scored at or above the national comparison group then. Nearly half the group achieve that level by eighth grade in 2001, an eight-point gain. With math, as with reading and language arts, high school students make the most modest improvement and end the period well below the national comparison groups and their younger peers in the state.

No growth data are available for the Standards Tests in mathematics

The California Standards Tests in mathematics were not fully operational in 2001 as performance levels had yet to be established for them. The scores are reported as percent correct, with no information about what level of performance a particular score represents. Performance

Figure 6
Stanford-9 mathematics by cohort, 1998 to 2001:
Elementary students lead improvement



Data: California Department of Education

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in grades 2–7 in 2001 range from 52% to 67% correct, with higher scores in primary grades.

The results show an increase in the percentage of items students answered correctly from 1999 (when the test was first administered) to 2001. However, because some changes were made in the test items, it is not clear whether the increase reflects improvement in student performance or simply changes that made the tests less difficult. As with the English/language arts Standards Tests, the general consensus during the development process has been that the test draws on the more difficult aspects of the standards.

Beyond seventh grade, there has been considerable debate about what content should get tested every year and particularly when algebra and geometry standards should be included in the test. California is moving toward a course-based model that tests students according to the content or courses they take, with the expectation that over time the grade at which they take particular courses will become more uniform. The current thinking is that eighth graders should be taking Algebra I and ninth graders should be taking Geometry. This establishes new expectations for course-taking at these levels.

In 2001, the tests included Algebra I and II, Geometry, Integrated Math I, II, and III, and Mathematics Grade 11 cumulative. Students were expected to take the tests based on the math course in which they were enrolled. Only 25% of eighth graders and 28% of ninth graders took the Algebra I test; only 12% of ninth graders, 22% of 10th graders, and 12% of 11th graders took the Geometry test; and 12% of 11th graders took the cumulative test. Changes in these test-taking patterns over time—both in terms of how many students take the tests and at what grade level—will provide an important measure of how schools are changing their math instruction to align with the state’s new guidelines.

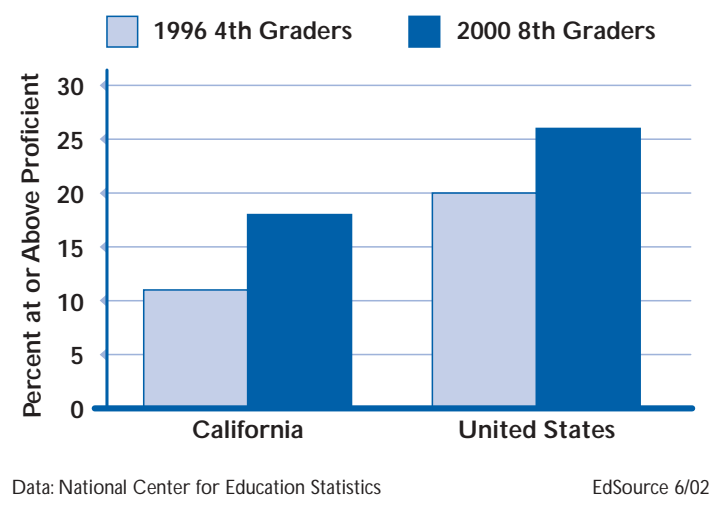
High School Exit Exam results indicate challenges

The mathematics section of the High School Exit Exam reflects the state’s mathematics standards for grades six and seven, and for Algebra I. The exam is composed of multiple-choice items. The State Board of Education set the passing score for this section of the CAHSEE at 55% correct. Because it includes Algebra I content, among other things, the test is considered a difficult one. Initial results bear this out: Only 44% of the nearly 370,000 volunteer ninth graders who took the 2001 test passed the mathematics portion.

Figure 7

NAEP mathematics, 1996 and 2000:

Results provide an objective confirmation of improvement



CSU remediation rates are slowing

Because the universities that make up California’s UC system each administer different placement tests in math, no statewide data are available. The CSU data suggest that the percentage of students judged to need remediation has decreased in the last two years. For the 2000–01 year, those needing remediation included 45% of entering CSU students. While this figure is nine percentage points lower than two years before, it is still substantially above the remediation rates of a decade ago.

2000 NAEP results in mathematics show improvement

In contrast to reading and writing, mathematics results on the NAEP tests provide some perspective on how the state’s reforms might be affecting student achievement. Test results from 1996 and 2000 are available for both fourth and eighth grade. These results corroborate the other indicators that student achievement in mathematics is improving somewhat, particularly at the elementary level. They also reinforce, however, the need for continued improvement.

The performance of fourth-grade students improved from the 1996 to the 2000 assessment. The percentage of students classified as being proficient or advanced increased from 11% to 15%. In the eighth grade, performance remained relatively stable, with 17% and 18% of students classified as proficient or above on the 1996 and 2000 NAEP tests respectively. At both grades, across both test periods, California students scored below the national average. Looking at growth for a single group of students over time, Figure 7 follows the group of children who were

in fourth grade in 1996 to see their progress as eighth graders in 2000. (While the actual children who took the tests are different, the statistical sampling methods used by NAEP make this a valid comparison.) By this measure, 7% more California students scored at or above the proficient level, compared to a 6% increase nationally.

What to watch for

Mathematics instruction in California is changing along with the testing system. The class of 2004 is the first required to take Algebra I in order to graduate. The greatest changes in this curriculum area will be measured on the Standards Tests.

- ✓ In November 2001 the State Board of Education adopted performance levels for the Standards Tests in math. Following the spring 2002 administration of STAR, student results will for the first time be reported based on performance levels from “very far below basic” to “advanced.”
- ✓ The 2002 Standards Tests in math will be given to high school students based on the highest math course they have completed or are taking. Students

who have completed Algebra II (or the equivalent) will take the cumulative High School Mathematics Standards Test.

- ✓ The Standards Tests results in math will be included in the 2002 Base API, released in January 2003.
- ✓ As of summer 2002, the entire class of 2004 will have taken the High School Exit Exam and the first full set of results will be available.

Signs of progress in mathematics

- ✓ A majority of fifth graders scored at or above the national average in mathematics on the Stanford-9 in 2001.
- ✓ Nearly half of eighth graders scored above the national average in mathematics on the Stanford-9 by 2001.
- ✓ The percentage of CSU freshmen needing to take remediation courses in mathematics decreased between 1999 and 2001.
- ✓ On NAEP, fourth-grade results showed progress between 1996 and 2000.

State officials outline next steps for California's STAR testing program

In April 2002 the State Board of Education (SBE) laid out a new path for the STAR testing program. After a review of proposals required by California law, they voted to award the contract for STAR to a new vendor, the Educational Testing System (ETS). (The Board expects to approve a final contract with ETS before the end of June.)

This decision puts into motion a number of changes to STAR. Schools and students will begin seeing these as they prepare for the 2003 administration of the tests. Many of the changes are not the result of the new vendor but of the provisions the state required of all bidders. These were based on Senate Bill 233, which was passed by legislators in 2001.

As is the case now, STAR will include two major sections: 1) norm-referenced tests that compare California students to a national sample; and 2) standards-based tests that compare student performance to state-determined expectations based on California's academic content standards.

The selection of a new contractor, however, means that the norm-referenced test students take will no longer be the Stanford-9. ETS will replace the Stanford-9 with their own similar test, called the CAT-6. As part of their proposal, they were required to discuss the methodology they would use for making this transition in such a way that the state would be able to link school, district, county, and state results of the Stanford-9 in 2002 with the new test. The goal is to maintain continuity in the state's accountability system by “assuring maximum possible accuracy in measuring 2002–03 API change scores.”

To be awarded the contract, ETS had to report on the extent to which the CAT-6 test was aligned with the academic content standards. They also had to demonstrate that the norming of the test was applicable to all significant student subgroups. In other words, state officials had to be sure that performance results for English learners, low-income students, and Special Education students could be fairly compared to a national sample.

In regard to the California Standards Tests, ETS must coordinate those at the high school level with the Golden State Exams (GSE). (The state expects to review new proposals from vendors to administer the GSE program during the coming year.) The goals of this effort are to assure highly accurate individual results, minimize the redundancy of test content, and reduce testing time.

Based on the new plan, the number and scope of STAR tests remains almost the same, with these exceptions:

- Addition of a fifth-grade Standards Test in science beginning in 2004.
- Addition of an eighth-grade Standards Test in history/social science in 2003. (A proposal to eliminate the ninth-grade Standards Test in history/social science was before the Legislature in spring 2002.)
- Elimination of the norm-referenced test in history/social science for grades 9–11 in 2003.

A copy of the Request for Proposals upon which the SBE based its decision can be downloaded at:

www.cde.ca.gov/statetests/star/request.html

How are students achieving in science and social studies?

Few meaningful indicators exist in California for judging student performance in science and social studies. Neither subject is part of the Stanford-9 assessment for elementary and middle schools, nor are they part of the High School Exit Exam. Preliminary California Standards Tests in both subjects were given to high school students in 2001, with the results reported only as the percent correct. While some high school students take other tests in these subjects—including the Golden State Exams and Advanced Placement tests—there is little information available upon which to judge the statewide performance of all California students in these areas.

In addition, adoption of standards and curricula in these areas, and professional development efforts related to them, occurred after English/language arts and math. As a result, the state's reforms to date have put less emphasis on history/social science and science, making it in large part too soon to tell whether standards-based reform is having an impact in these subject areas.

Social studies tests go back to square one

While concerns have been raised about the alignment between California's standards and the Stanford-9 in all subject areas, the problem is greatest in history/social science for grades nine to 11. In December 2001, based on legislation, the State Board of Education stated that the tests "have no alignment to California's academic content standards" and acted to eliminate the use of a nationally-normed history/social science test beginning in 2003. Students will be required to take the tests in 2002, however, and the results will be included in high schools' API scores.

Beginning in 2003, California will instead depend on the Standards Tests to measure student performance in history/social science. Those tests were given to high school students for the first time in 2000, and the results were reported as percent correct without any performance standards. As with the Standards Tests in mathematics, the tests are linked to specific courses of study. While the ninth grade assessment is a cumulative test, the 10th-grade assessment focuses on World History, and the 11th on U.S. History. The average percent correct for all students in California was 46% for ninth graders, 44% for 10th graders, and 48% for 11th graders.

Science assessments cause concern

Unlike history/social science, the Stanford-9 science tests for grades nine to 11 are thought to be at least modestly aligned with California standards. Following the cohort of students who were ninth graders in 1999 and 11th graders in 2001, the results show uneven performance in science over the three-year period. Less than half of California's students are scoring at or above the national

State standardized test results available in history/social science

- *Stanford-9, 1998 to 2001. All students grades 9–11. Saying that these tests are not aligned with California standards, the state plans to discontinue their use in 2003.
- *Standards Tests, 2001. Percentage correct only. All students grades 9–11.

State standardized test results available in science

- *Stanford-9, 1998 to 2001. All students grades 9–11.
- *Standards Tests, 2001. Percentage correct only. Students enrolled in specific courses, grades 9–11.

* Part of California's Standardized Testing and Reporting (STAR) program.

Additional measure for science

- 2000 National Assessment of Educational Progress (NAEP). Sample of students, grades 4 and 8.

comparison group in science, with only 42% of last year's 11th-grade cohort scoring at this level.

Standards Tests being developed for science are also linked to specific courses, but the state does not set forth a firm expectation regarding when or in what order courses should be taken. The high school-level tests include biology/life sciences, chemistry, earth science, physics, and integrated sciences. As with the other Standards Tests, performance levels for these tests were not yet set in 2001.

Recently released NAEP results in science for fourth and eighth grades suggest that science performance at the lower grade levels is similarly poor, in fact among the lowest in the nation. On the 2000 assessment, only 14% of California's fourth graders and 15% of eighth graders scored at the proficient level or above on NAEP. Not only did California students score below the national average and most other states, the science performance of eighth graders dropped from the 1996 to the 2000 assessment, even as the national average inched upward.

What to watch for

California will have to wait until after the summer of 2002 for more meaningful indicators of student performance in history/social science and science. Measures of improvement will take even longer.

- ✓ Results on the Standards Tests in these two subjects will be reported based on performance levels in 2002.
- ✓ New Standards Tests for science in fifth grade will be administered in spring 2004, and for history/social science in eighth grade in 2003. (Pending legislation could remove the requirement for the ninth-grade history/social science test.)

Other indicators address performance of high school students

A number of other indicators of performance relate only to high school students, particularly those who are college bound. Aside from the dropout rates, these are based on courses and tests that students choose to take voluntarily. Because many factors influence students' decisions, their results should be interpreted cautiously. What is important is the pattern in performance across indicators, not the result of any single one. To the extent that the various indicators converge, California can have greater confidence in the trends they may show.

Dropout rates remain low

Along with the obvious interest in counting how many students complete their education, the dropout rate can indicate if improvements in test scores are coming at the price of more students being pushed out of school. California officially defines a dropout as a student at or above seventh grade who misses school for 45 consecutive days and does not enroll in another school.

The California Department of Education reports that the one-year dropout rate has declined from 10 years ago. Since 1998 it appears to have leveled out at an annual rate of approximately 2.8%. This rate is calculated based on the number of students who drop out between when school starts and ends in a given year. California officials also calculate a four-year dropout rate that uses data collected in a single year to estimate the percent of students who would drop out in a four-year period. Based on this calculation, the state's dropout rate is estimated at 11.1%. The variation in these two dropout rates illustrates the challenges involved in gathering and reporting accurate information of this type. The legislation creating the state's Academic Performance Index (API) also called for including the dropout rate in the calculation, but the school-level data are not considered sufficiently reliable for that to happen. California is moving toward a student data

system that should provide a more precise understanding of these indicators.

With the institution of the High School Exit Exam, dropout rates will bear careful scrutiny. Some observers have worried that the difficulty of the test may cause some students to become discouraged and drop out rather than face continued test failure that they assume will deprive them of a diploma anyway.

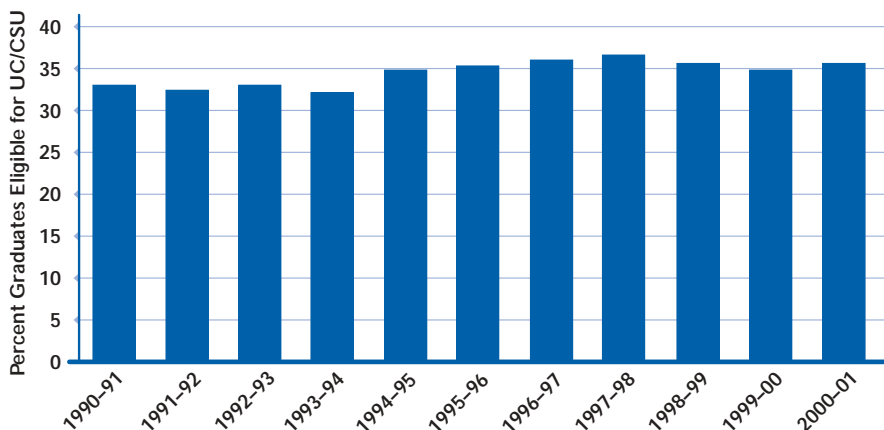
More than a third of high school students finish college prep courses

The courses students take in high school indicate their preparation and intent to go to a four-year college. Students who plan to attend the UC or CSU systems must take certain courses, known as the "a-g" (formerly "a-f") requirements. High school courses that satisfy these requirements must meet UC/CSU standards for content and rigor. Beginning with the class of 2003, students must take the following:

- ✓ (a) History/social science—two years required.
- ✓ (b) English—four years required.
- ✓ (c) Mathematics—three years required (through Algebra II); four years recommended.
- ✓ (d) Laboratory science—two years required; three years recommended.
- ✓ (e) Language other than English—two years of the same language required; three years recommended.
- ✓ (f) College preparatory electives—one year required.
- ✓ (g) Visual and performing arts—one year required.

Figure 8

UC/CSU "a-f" course completion rate, 1990–91 to 2000–01:
After some growth, rates have leveled off



Data: California Department of Education

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The rate at which graduating seniors have met these course requirements went from almost 33% to almost 36% from 1990 to 2001. The most recent data, as shown in Figure 8, signals a variation in these rates from 38% to 36% between 1997 and 2001. Whether these figures indicate a leveling off or a downward trend bears watching.

More students are taking Golden State Exams and doing well

The Golden State Exams (GSE), developed by the California State Department of Education (CDE), are rigorous examinations of essential academic subjects. Various tests are available in the core subject areas of mathematics, language arts, history/social science, and science, as well as Spanish language. In recent years the tests have been modified to strengthen their alignment with California's academic content standards. All districts must offer the tests, but they are voluntary for students.

The GSE program aims to motivate and recognize academic excellence. Students who meet or exceed the three highest levels of performance on a test—high honors, honors, and recognition—are recognized as Golden State Scholars in the tested subject. Further, students who attain at least recognition designations on six Golden State Examinations during high school receive a special Golden State Seal Merit Diploma.

The GSE program shows a consistent pattern of increased participation. From 1998 to 2001, the total number of tests administered grew by 25%, from 965,876 to 1,215,297. Further, while the numbers of students taking the tests has increased, the proportions of students receiving recognition, honors, or high honors has remained relatively constant at 33%, meaning more and more students are being recognized as scholars. The increase in test-taking is in first-year algebra, geometry, biology, and chemistry. Social studies tests—such as U.S. history, economics, and civics—are taken less frequently and have shown less increase.

The increasing number of students taking the exams and doing well is certainly a positive trend. Yet such data is limited in its value because the test is voluntary. Student participation may vary from school to school for reasons unrelated to academic performance, such as teacher and parent encouragement and peer pressure.

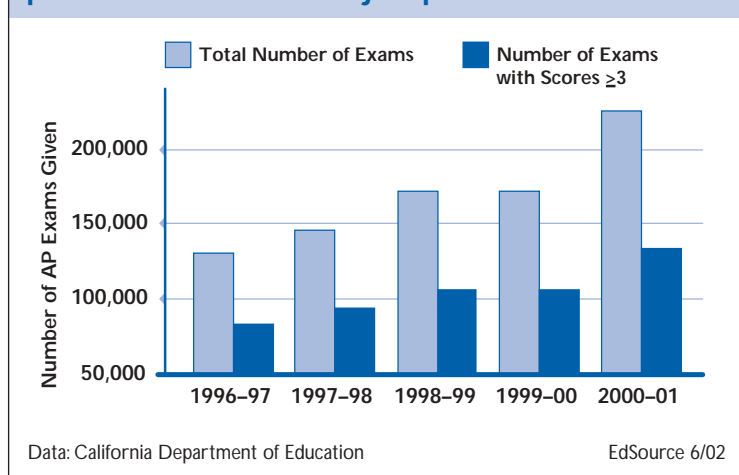
Advanced Placement participation has increased substantially since 1998

Another measure of interest is the availability of and student participation in Advanced Placement (AP) courses and examinations. AP courses require college-level course work, and students performing well on the exams (a score of three or higher) may receive college credit. Because of the rigor of the courses, students receive extra points for their grades in these courses (5 for an A, 4 for a B), which in turn gives them an advantage in college admissions.

The number of end-of-course AP exams taken increased from 1998 to 2001. (See Figure 9.) Probably reflecting a push by state policymakers to increase the availability of AP courses, the number grew from about

Figure 9

AP test-taking and exam results, 1996–97 to 2000–01:
Both the number of exams taken and the performance on them jumped in 2000–01



170,000 in 1998–99 to more than 225,000 in the 2000–01 school year. Importantly, even as the numbers of tests increased, the percentage of exams scored at the highest levels of performance held steady.

College entrance examinations show a modest improvement

College entrance examination scores also measure how California high schools are preparing students for college. State-level results are available for the SAT I and the ACT tests. While the tests are not aligned with California's standards and are intended to predict college success rather than assessing school learning, the results do provide some perspective on college readiness.

Since 1989, between 35% and 38% of California's high school seniors have taken the SAT and the ACT. A combined score of 1,000 on the verbal and mathematics section of the SAT I, the college entrance exam most commonly taken in California, is viewed as a common threshold for attendance at competitive four-year colleges. Over the last five years, the proportion of California students achieving this threshold has been inching up. In 2001, more than 19% of all high school seniors and over 52% of test-taking seniors did so.

Signs of progress at the high school level

- ✓ California's one-year dropout rate has declined compared to 10 years ago.
- ✓ Participation in the voluntary Golden State Exam program increased by 25% between 1998 and 2001.
- ✓ AP tests taken grew from 170,000 in 1998 to 225,000 in 2001, with no loss in student performance.
- ✓ A third of high school seniors took the SAT I, and more than half of them achieved a score above 1000.

How are traditionally underachieving subgroups doing? Is California narrowing the achievement gap?

The previous pages described the overall performance of California's students. However, differences in performance between groups of students are an important part of the student achievement story here and nationally.

The relationship between students' home background and their educational achievement is well documented. Simply stated, children with limited English skills and those from economically disadvantaged backgrounds tend to score lower on standardized tests than students with English fluency or those from economically advantaged backgrounds. Because there is often a strong relationship between students' ethnicity and their socioeconomic status, there are also well known relationships between student ethnicity and performance. Students of American Indian, African-American, and Latino heritage tend to perform more poorly than white and Asian groups. Part of the mission of educational reform is to try to narrow the achievement gap for these traditionally underachieving subgroups.

The achievement gap issue is particularly important for California because the state's school children are highly diverse, and relatively high proportions of students live in poverty.

- ✓ The percentage of students who qualify for free or reduced-price lunch was 46.8% in 2000–01. To qualify for this program in 2001–02, a family of four must have earned no more than \$32,653 a year.
- ✓ The percentage of California students with limited English proficiency has jumped from 20% in 1990–91 to 25% percent in 2000–01.

- ✓ Over the same period, the proportion of Latino students has grown from 34% to 42% and white students have decreased comparably, while other minority groups have remained substantially unchanged.

(For more details on California's student demographics, see the June 2002 EdSource publication, *Who Are California's Students?*)

API performance sheds light on student achievement gaps

An analysis by Stanford University education researcher David Rogosa provides a way to look at the achievement of the state's disadvantaged students. Rogosa's findings provide a number of important insights about the relationship between socioeconomic factors and student performance in California, as well as some optimism that the recent state reforms are having an impact.

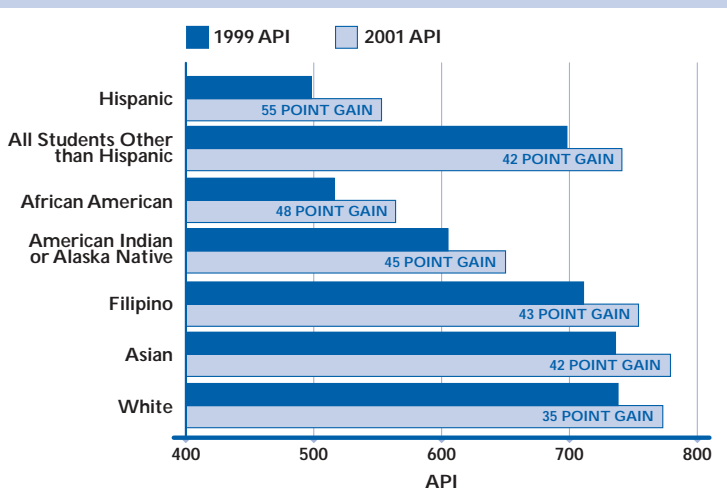
In a series of CDE reports (found online at www.cde.ca.gov/psaa/apiresearch.htm), Rogosa refutes the common misunderstanding of the strong correlation between the background characteristics (or demographics) of the students that schools serve and their API performance. Other researchers have concentrated on the high proportion of the variation in school scores that can be accounted for by school variation in these socioeconomic factors. Rogosa, on the other hand, observes the large variation in performance in schools serving similar proportions of disadvantaged students.

Rogosa uses schools' "similar schools rankings" in these analyses. The similar schools ranking divides schools into 10 groups, based on a composite that includes parent education, free or reduced-price lunch, and language status indicators. A ranking of "1" denotes the groups of schools serving the most disadvantaged students and "10" represents those serving the most advantaged. Rogosa saw a wide range of performance in each group. Particularly noteworthy is the variation he documents in the lowest bands. For example, among the elementary schools that serve the most economically disadvantaged students in the state, the top 25% in terms of performance scored as well as some of the most advantaged schools. He found similar results for middle and high schools. So while schools serving more affluent communities generally do better than those serving less advantaged students, Rogosa found plenty of exceptions in California. He concludes that it is far from the case that socioeconomic status determines school performance.

Figure 10

API, 1999 and 2001:

Hispanic students lag behind other ethnic groups, but their growth rate on the API is the highest



Data: California Department of Education, Policy and Evaluation Division

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Moreover, he notes that California's lower performing schools tended to improve more than higher performing schools from 1999 to 2001. One simple reason is that higher performing schools had less room to grow. But in addition he found that the improvement for economically disadvantaged students was as great or greater than improvements for all students. The state data show results were strongest for Hispanic students, as shown in Figure 10. Statewide, the improvement in performance among low-income students and for Latino and African-American students meets or exceeds the schoolwide results as measured by the API. These are promising findings related to closing or at least narrowing the achievement gap.

Differences in test performance are based on poverty

Despite these somewhat promising recent results, it is still true that economically and socially disadvantaged groups tend to perform substantially lower than their more advantaged peers. This is the case across every student performance measure included in this report.

Stanford-9 test scores, for example, show consistent differences between the performance of students categorized as socioeconomically disadvantaged (students who qualify for free or reduced-price lunch) and all students. However, based on the percentage of students scoring at or above the 50th percentile, results generally show similar growth for the economically disadvantaged as for students as a whole. The data show that gains for disadvantaged students who were performing below the 25th percentile have outstripped those for their more advantaged peers.

Analysis of the results of the Standards Tests in English/language arts shows a pattern of performance similar to the Stanford-9 and a similar gap, as Figure 11 demonstrates. Across grade levels, the average proportion of all students classified as proficient or above is 31%, while it is only 14% for socioeconomically disadvantaged students.

Results for the High School Exit Exam also show a large gap in proficiency between the two groups. Left unresolved, that gap will have serious consequences for students' futures because their high school diploma may hang in the balance.

Based on the spring 2001 administration to ninth-grade volunteers, only 45% of students classified as economically disadvantaged passed the English/language arts portion, while nearly 75% of their more advantaged peers passed. The picture in mathematics is even bleaker for both groups, where only 26% of economically disad-

Figure 11

Standards Tests English/language arts, 2001:
Students in poverty are further from meeting state standards

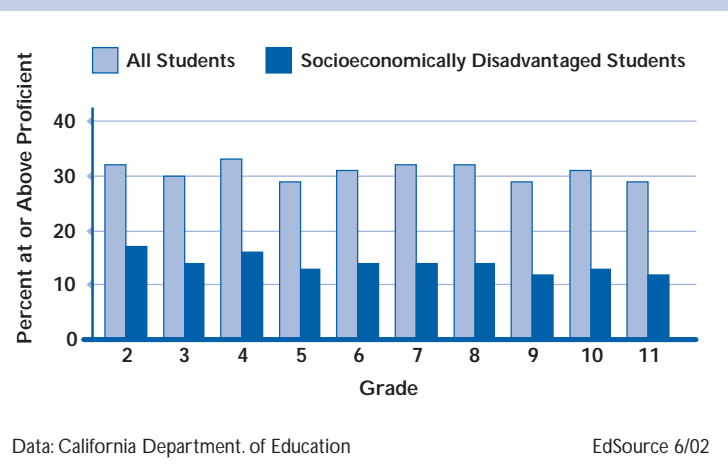
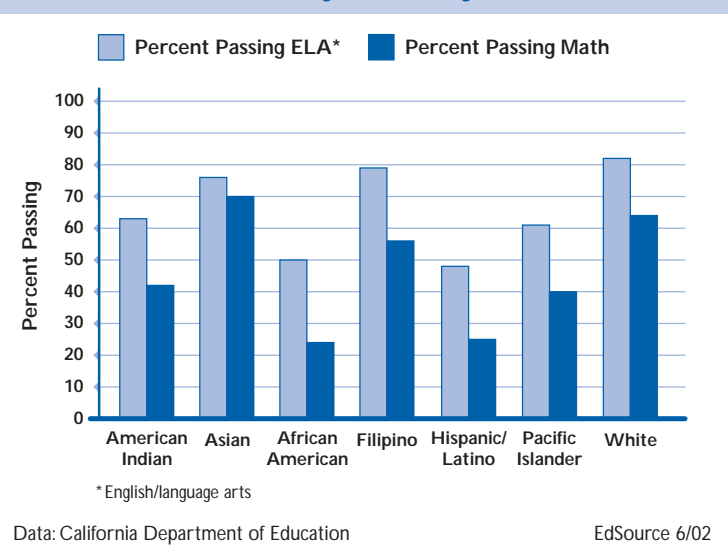


Figure 12

High School Exit Exam, 2001:
Results of the first administration show marked differences by ethnicity

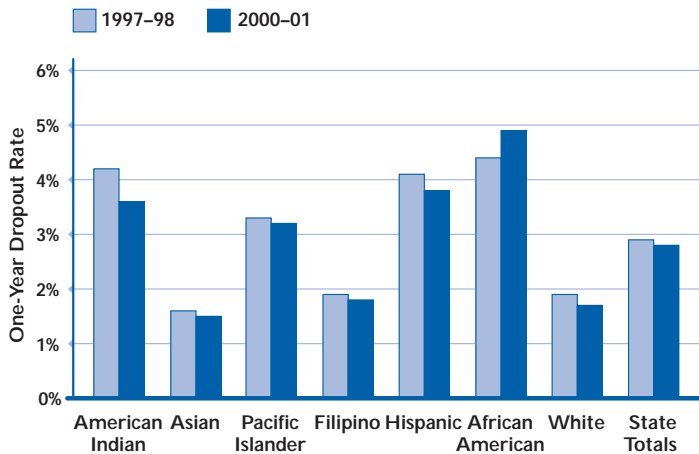


vantaged students passed and 54% of non-disadvantaged students passed.

Of interest as well are the performance levels of ethnic groups that tend to be over-represented in poverty circumstances. As Figure 12 shows, in English/language arts, 63%, 50%, and 48% of Native American, African-American, and Latino students respectively passed the exam, compared to 82% of white students and 76% of Asian students. The results again are more discouraging in mathematics, with only 42%, 24%, and 25% of Native American, African-American, and Latino students

Figure 13

Dropout rates by ethnicity, 1997–98 and 2000–01:
Variations by ethnicity continue to be of concern



Data: California Department of Education

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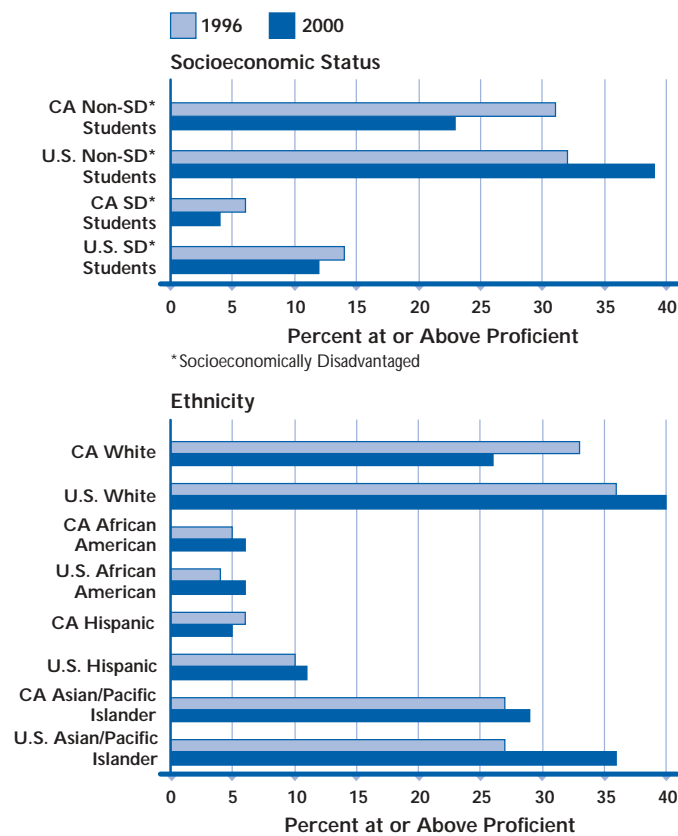
respectively achieving the passing standards for mathematics, compared to 64% of white students and 70% of Asian students.

These same patterns hold for other indicators of performance. For example, Figure 13 shows the one-year dropout rates by ethnicity over the last several years. While all groups show a stable or downward trend, it is clear that the annual dropout rates for Native American, African-American, and Latino youth are more than twice that of their white counterparts, and the rate for Pacific Islanders is approaching that level. Over a four-year period, these figures represent a substantial rate of non-completion for these subgroups.

NAEP data also show dramatic gaps in performance between African-American and Latino students and white students, and between those who are economically disadvantaged and those who are not. Figure 14 shows that performance for traditionally disadvantaged groups is worse in California than it is nationally.

Figure 14

NAEP eighth grade science, 1996 and 2000:
Low-income, Hispanic, and African-American students perform at lower levels both in California and the United States



*Socioeconomically Disadvantaged

Data: National Center for Education Statistics

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African-American and Latino students are less likely to participate in college prep classes and exams

For the same subgroups of California’s student population, some of the performance indicators related to college preparation bring up issues of equity in access or participation, as well as performance. For example, less than a quarter of African-American and Latino students—24.7% and 21.5% respectively—take and pass the “a-g” course sequence required for admission to UC and CSU. The extent to which this gap is attributable to the courses not being made available to these students versus their not choosing to take them is unclear.

AP courses provide another example. A 1998 study by The Education Trust shows the frequency with which various ethnic groups take AP examinations and contrasts those numbers with the percentages of each group in the student population. For instance, African-American students comprise 8.8 percent of the public school population, 3.5 percent of students taking the English AP examination, and 2.5 percent of students taking the calculus test. In contrast, students of Asian ethnicity comprise 11.2 percent of the student population, but account for 28.1 percent of the English AP test-takers and a whopping 42.8 percent of those sitting for the AP calculus examination.

In California, concerns about limited access to AP courses in many schools—particularly for African-American, Hispanic, and economically disadvantaged students—prompted new programs in 2000 to encourage more AP courses. One immediate result, either of the

new policies or the attention, appears to be a jump in the number of AP courses taken and passed with a score of 3 or more. The extent to which the identified groups of students were represented in this increase is unclear.

New indicators shed light on performance of English learners

Approximately one quarter of California's K–12 students are not fully proficient in English. These students represent a special challenge for California's education and accountability systems. It is particularly difficult to know, at this point, how well these students are progressing in learning English or other academic subjects.

California's English Language Development Test (CELDT) measures English learners' (EL) progress toward English language proficiency. Designed to match the state's standards for English language development, the test includes components to assess students' speaking/listening, reading, and writing. Results are to be used to classify student proficiency, to inform instructional planning, and to be part of the API eventually. The test is still being refined and has been the subject of some controversy because of the costs and reliability of the test administration, the timeliness of results, the congruence of the test with modern theories of language acquisition, and its alignment with the state's English Language Development standards. However, the initial results from 2001 may provide some indication of the range of English ability among these students. Based on test results, a quarter of the 1.25 million continuing students would be eligible for reclassification as fully English proficient, and another 40% would be placed at the intermediate level. The test results rated the remaining third of students as either beginning or early intermediate in their English ability. Another 335,000 students new to California schools—59% of whom were kindergarteners—were given an initial assessment.

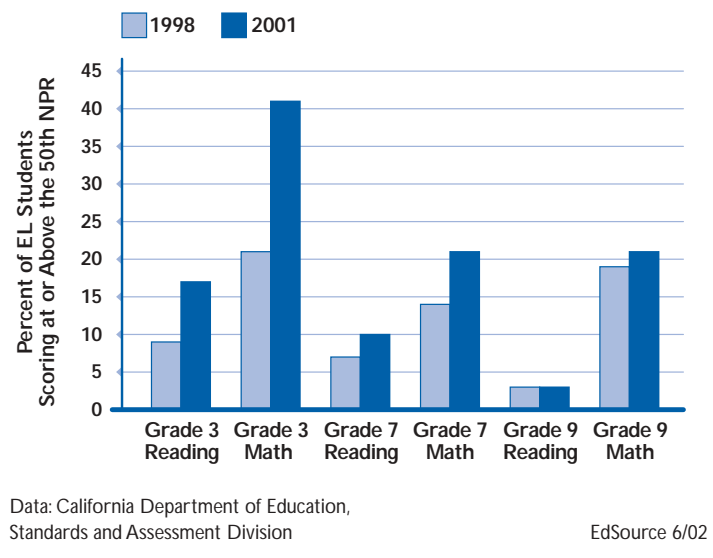
The state requires that English learners also take the other state tests, which are in English. It is not hard to predict that students who do not understand English will fare poorly when compared—as on the Stanford-9—to a national norm group consisting of only 2% of non-English proficient students. Furthermore, students who do not fully understand the language in which a test is written are likely to find it difficult to demonstrate their subject matter knowledge, even in mathematics or science.

California's English learners perform substantially lower than their English-speaking counterparts on all the Stanford-9 portions of the state's assessments. However, test results between 1998 and 2001 show substantial growth in the percentage of EL students at the

Figure 15

Stanford-9, selected grades, 1998 and 2001:

Young English learners show notable progress



elementary and middle school levels scoring above the 50th percentile. Figure 15, which shows only selected grade levels, also makes clear the lack of similar progress among high school students.

Similarly, on the Standards Tests for English/language arts, very few EL students scored at or above the proficient level. During the first trial of the High School Exit Exam, only 30% of students designated as EL passed the English/language arts test, and only 17% passed the mathematics assessment. As with the Stanford-9 reading results, the proportion of designated EL students achieving proficiency on the English/language arts test raises questions about the accuracy of students' EL designation. That is, should students who achieve proficiency in English/language arts or those who score at or above the 50th percentile on the Stanford-9 be considered less than proficient in English?

Results show few differences by gender

By most measures, girls and boys in California perform similarly. On those measures where differences are notable, boys tend to perform worse than their female counterparts:

- **UC/CSU course completion rate:** Girls 39%; boys 32%.
- **Dropout rates (one-year rate):** Girls 2.5%; boys 3.0%.
- **Stanford-9 performance based on percent scoring at or above the 50th national percentile rank (NPR):**
Math: Performance identical at 53% for girls and boys.
Reading: Girls 46%; boys 42%.

One rationale for including EL students in the English language assessment system is to make sure that schools feel accountable for these students' progress and that their educational needs receive full attention. For the same reason, many districts with large numbers of Spanish speakers have historically chosen to test their Spanish-speaking students using a standardized test written in Spanish.

Starting in 1999, those districts were required to use the SABE-2, a norm-referenced test intended to parallel the content of the Stanford-9, but normed on a Spanish-speaking student population. The state pays for Spanish-speaking students to take this test their first year in a California school.

The results on the SABE-2 indeed are higher. For all except 11th grade, the majority of EL students tested scored at or above the national norm group in reading (Spanish language), and the majority in grades 2–6 were at or above the national norm group in mathematics. Like the English language results, scores were substantially lower at the high school level. However, because not all Spanish-speaking EL students in the state take the test, the results are not fully representative and therefore difficult to interpret.

Many California school districts serve students representing a multitude of language backgrounds, more than 50 in some cases. So while Spanish is spoken by about 83% of English learners, the challenge of helping all these students learn to speak, read, and write in English is in some schools extremely complex.

Signs of progress in addressing the achievement gap

- ✓ Among elementary schools that serve the most economically disadvantaged students, the top 25% had API scores equal to some of the most advantaged schools.
- ✓ Based on the API scores, Hispanic and African-American subgroups of students were making the largest gains in achievement.
- ✓ The improvements on the Stanford-9 for economically disadvantaged students and EL students were as great or greater than improvements for all students, and greater than improvements for their more advantaged peers.
- ✓ Students who previously performed below the 25th percentile showed substantial improvement.

To Learn More

Sources for performance data

The California Department of Education (CDE) website has summary data—and in many cases results for each school and district—for all the state performance measures. They can be found at the following places on the CDE website:

- ✓ Academic Performance Index (API): <http://api.cde.ca.gov/>
- ✓ Standardized Testing and Reporting (STAR) program scores: <http://star.cde.ca.gov/>
- ✓ California High School Exit Exam (CAHSEE) scores: <http://cahsee.cde.ca.gov/>
- ✓ Number of high school graduates who meet California State University (CSU)/University of California (UC) eligibility criteria: <http://data1.cde.ca.gov/dataquest/> (Choose “graduates” from the pull-down menu.)
- ✓ Advanced Placement (AP) test-taking and results: www.cde.ca.gov/ope/research/ap/
- ✓ SAT I scores: www.cde.ca.gov/ope/research/sat/

CSU college remediation rate information can be found at: <http://www.asd.calstate.edu/performance/remediation.shtml>

National Assessment of Educational Progress (NAEP) results for California and nationally—including newly released nationwide results for history—are available at: <http://nces.ed.gov/nationsreportcard/sitemap.asp> (The new NAEP history test does not provide state-by-state results.)

Related EdSource publications available free at www.edsource.org:

- ✓ *Who Are California's Students?* (June 2002)
- ✓ *California's Student Data System: In Need of Improvement* (May 2002)
- ✓ *Is California on the Right Track? Speakers debate how best to meet rising expectations for K–12 education* (May 2002)
- ✓ *California's New High School Exit Exam* (Parent Guide in English and Spanish, October 2001)

California's overall student performance shows mixed results

The results reviewed here show a mixed picture and suggest the educational challenges that California faces.

Statewide results present both progress and problems

Stanford-9 results generally show improvement in student performance, particularly in elementary schools and, to a somewhat lesser extent, in middle schools. Students are showing improvement in reading, language arts, and mathematics, with the majority of California students in grades 2–8 scoring at or above the national norm group in language arts and mathematics. Reading scores lag a bit behind.

- ✓ An API analysis by subgroup and Stanford-9 results suggest some progress in reducing the gap in student performance, particularly among Hispanic students.
- ✓ Performance results on California's new Standards Tests in English/language arts suggest that the state has instituted rigorous standards and has a considerable distance to go in assuring that students achieve them.
- ✓ The latest NAEP science results are a wake-up call, as the already low science performance of eighth graders dropped from 1996 to 2000, even as the national average inched upward. Given the emphasis on improving performance in reading and mathematics in recent years, science and other subject areas may have received short shrift.
- ✓ Even with some lingering doubts about the test itself, low performance on the Stanford-9 in high schools signals problems that will need substantial attention. The percentage of high school students scoring at or above the national average in reading remains stubbornly low, with less than 40% of students scoring at this level. Results are only moderately better in language arts and mathematics, and little progress is being made.
- ✓ Preliminary results from the first administration of the High School Exit Exam reinforce the concern that substantial improvement is necessary at the high school and lower school levels to assure that all students will be able to at least pass the exam.
- ✓ Pockets of promise exist with other indicators at the high school level, particularly for those students who may be college bound. More students are taking and doing well on the Golden State Exams, Advanced Placement courses, and college entrance exams. However, the proportion of high school graduates taking and passing coursework to permit their admission to UC or CSU may have reached a plateau.

Gaps in achievement persist

The results continue to show a strong relationship between students' socioeconomic status (SES) and their performance. The achievement gap continues, though it shows a slight lessening in the current data. Students who live in poverty perform less well than their more affluent peers across all measures. Lower performance is also associated with ethnic groups who are disproportionately represented in low economic circumstances, particularly Native Americans, African Americans, Pacific Islanders, and Latinos. These groups continue to be more frequent dropouts and to be less likely to take the coursework or assessments associated with college entry.

However, at the same time, the API data strongly show that SES does not determine performance. Some schools serving the lowest SES communities are high performing. The state also continues to grapple with how to evaluate the performance of its large number of English learners and to assure that these students too will meet standards.


Classroom instruction remains the key to improved achievement

California's elementary and middle schools must continue their progress in helping students meet rigorous standards and assure that students receive a balanced curriculum. The findings in science suggest what may happen when some subjects get priority while others get little attention. As California's Standards Tests are phased in across subject areas and become part of the accountability system, some of this problem will be alleviated; but the place in the curriculum for subjects or skills that are not tested should continue to be a concern. High schools, as noted, appear to need special additional attention.

Academic improvement will take more than testing and accountability. Californians must also guard against a curriculum of test preparation and assure that increasing test scores signal real improvements in learning and not just teaching to the test. A state-led, standards-based accountability system can establish the target and inform all stakeholders about progress, but it alone cannot improve educational opportunities for students. The challenge now is for local schools to turn the standards into effective classroom instruction. To do so, schools need effective principals and teachers who know how to help their students attain the standards. That requires appropriate training, subject-matter knowledge, experience, and sometimes extra professional support. Teachers, in turn, need to have appropriate and adequate instructional materials. And schools must be able to provide extra support,

including both time and personnel, for students who are struggling. The persistent gap between advantaged and less advantaged students must continue to get priority attention at both the state and local level. The problem is particularly acute for the most at-risk students.

The journey to reach these rigorous standards continues, as does the state's ambitious plan for monitoring and supporting student

progress. This report describes what is known about California's progress toward its academic goals for K–12 education. It also indicates what is coming next in testing and accountability. These evolving systems should be brought further into alignment with the instructional goals and must be honed so they provide increasingly accurate information about how California students and schools are progressing along this challenging path. 



EdSource thanks the National Center for Research on Evaluation Standards and Student Testing (CRESST) for its generous and extensive contribution of time and expertise to this project.

A Glossary of Assessment Terms

(Excerpted from the EdSource Online Glossary, found at: www.edsource.org)

CSIS

California School Information Services, a state program created in 1997, is a voluntary data collection system with the goal of enhancing school districts' ability to collect data, transmit information, and transfer individual student records from school to school. In 2002, 219 districts and county offices of education were participating. For more information, go to www.csis.k12.ca.us or see the EdSource EdFact, *California's Student Data System: In Need of Improvement* (May 2002) at: www.edsource.org

Criterion-referenced test

A test that measures specific performance or content standards, often along a continuum from total lack of skill to excellence. These tests can also have cut scores that determine whether a test-taker has passed or failed the test or has basic, proficient, or advanced skills. Criterion-referenced tests, unlike norm-referenced assessments, are not primarily created to compare students to each other. Typically the goal is to have everyone attain a passing mark.

Disaggregated data

The presentation of data broken into segments, such as test scores for students from various ethnic groups, instead of in the aggregate for the entire student population.

Longitudinal data

Data that is tracked over time, for example achievement data for a specific student or group of students. In education, the ability to track students as they progress through the school system is seen as important for evaluating the contribution schools, specific programs, and teachers make to student performance, and for accurately tracking the progress of specific subgroups of students.

Norm-referenced assessment

An assessment in which an individual or group's performance is compared to a larger group. Usually the larger group is representative of the cross-section of all U.S. students.

Percentile ranks

Percentile ranks compare a given child, class, school, or district to a national norm. Students in the first percentile are outranked by everyone who took the test. Students in the 99th percentile outrank everyone. Students at the 50th percentile are at the average. Percentiles are ranks, not scores.

Reliability

In testing, reliability is a measure of consistency. For example, if someone took the same test on two different days, scores on both tests should be similar.

Standardized test

A test that is in the same format for all takers. It often relies heavily or exclusively on multiple-choice questions. The testing conditions—including instructions, time limits, and scoring rubrics—are the same for all students, though sometimes accommodations on time limits and instructions are made for disabled students. Reporting of scores to parents, students, or schools is the same. The procedures used for creating the test and analyzing the test results are standardized.

Validity

Tests can have content validity, criterion validity, construct validity, consequential validity, and face validity. A test has content validity if it measures what it says it is measuring. Criterion validity, also called predictive validity, occurs if a test predicts something that the test administrators are interested in predicting. For example, the SAT I is meant to predict freshman grades in college. Construct validity is used to measure psychological constructs such as intelligence, anxiety, or self-esteem. If a test measures these constructs as it says it is measuring them, it has construct validity. Consequential validity refers to the consequences of a test or inferences made from the test. For example, the consequence of a number of students failing a test may be that teachers change their curriculum. A test has face validity if it appears appropriate or relevant to the test-taker. If a test does not have face validity, the test is compromised and that can affect other kinds of validity as well.

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