PACE

POLICY BRIEF

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Meeting the Challenge:

Performance Trends in California Schools

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The key conclusion from the recent *Getting Down to Facts*[1] project was that California's entire system of school finance and governance needs to be overhauled if our state is to make any significant progress in improving its K-12 public schools. Supporting this view is the fact that California lags the nation on a number of school quality indicators, including student performance, per-pupil spending, and staff- and teacher-pupil ratios (Loeb, Bryk and Hanushek, 2007; Loeb, Grissom and Strunk, 2007). For example, only six percent of California students are in districts with per-pupil expenditures that match or exceed the national average (EdWeek, 2006) and California's ratio of 476 students per administrator is over three times as high as Texas and 50 percent higher than the average in the rest of the country (see Figure 1). Such comparisons with other states make it clear that California could be doing much better by its children.

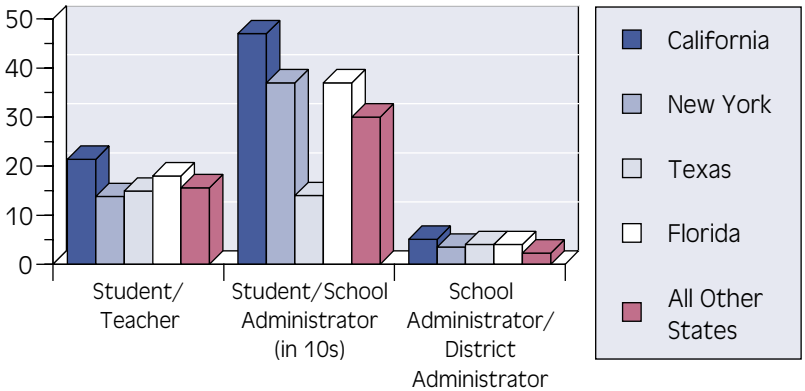
Executive Summary

There are significant signs of progress in California's schools, in spite of the tremendous challenges they face. Trends across multiple measures of student performance are fairly consistent: all students are doing better, or at least holding steady, during a time when the system is serving a larger and more diverse population of children. For example, test data indicates that the percentage of third graders who are proficient in math and reading has increased. Each sub-group of students shows improvement, but white and Asian students are still out-performing their African-American and Hispanic peers by wide margins that have remained relatively steady over time. A similar pattern holds across other grades and subjects.

California's high dropout rate remains the subject of much

continued on page 2

FIGURE 1. **Staffing Ratios in California and Other States, 2003-04**



Reproduced from Loeb, Bryk, and Hanushek, 2007

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Executive Summary (continued)

concern, yet California is one of the few states that saw an improvement in the graduation rate between 1992 and 2002. The number of high school students who have completed the "a to g" coursework required for admission to the University of California or California State University systems has also increased in recent years.

The job of educating California students is substantially more difficult today than it was even a decade ago. In 2006-07, California public schools served more than 6.2 million students, over one million more than in 1993-94. California also serves the most diverse group of students in the country, and the diversity of the population is increasing steadily over time. Over 70 percent of California's K-12 students are non-white, and just under half are poor enough to qualify for the Federal Free or Reduced Price Lunch Program.

Although the demands on K-12 public schools have grown, there has not been a commensurate growth in resources. Despite the high cost of living in California, most of the state's students attend schools where per pupil spending falls below the national average. The ratio of adults to students in California schools is dramatically smaller than in most large states across the nation. Even so, the performance of California schools has shown real improvement over the last several years.

These improvements are a testament to the dedication of California educators. Public school teachers, principals and staff are under increasing pressure to produce measurable improvements in student outcomes, and they have responded to the challenge.

Unfortunately, the achievements documented in this brief have happened in spite of many state policies, not because of them. For policymakers, the need for reform should be clear. How much better might our schools have done, and how much more might they do in the future, if California's school finance and governance systems actually supported student performance and accountability? If we are going to ask our schools for continued improvements, we must also ensure that they have the resources and support that they need to do this vital work.

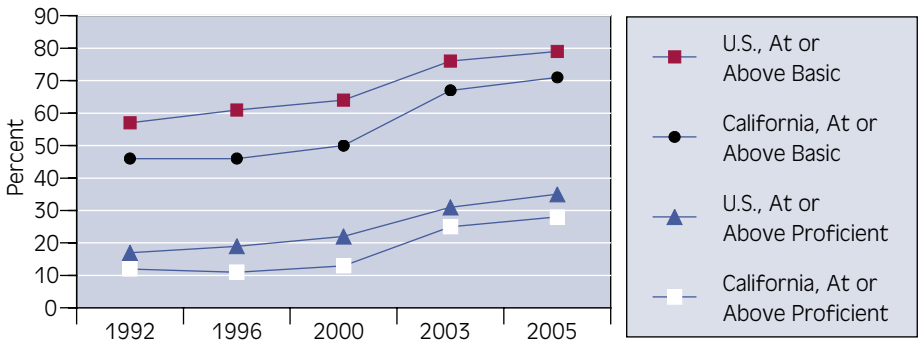
At the same time, we should also recognize the immense challenges that California schools face, challenges that have only increased over time. The job of educating California students today is substantially more difficult relative to even just a decade ago. For example, in 2006-07, California public schools served over 6.2 million students; not only is that more than any other state in the country but it is over one million more students than in 1993-94. California also serves the most diverse group of students in the country, as shown in Table 1, and that diversity has only increased over time. Over 70% of K-12 students are non-white, and just under half are poor enough to qualify for the Federal Free or Reduced Price Lunch Program. Nearly one-quarter of the students in California schools are English Learners; in fact California educates one-third of all the English Learners in the country.

TABLE 1. **Demographic Distribution of Students, California and Rest of U.S., 1998 and 2005**

	1998		2005	
	California	Rest of U.S.	California	Rest of U.S.
Total Enrollment	5,926,037	40,612,548	6,437,202	42,676,272
Non-white students (% of Total)	3,715,543 62.7%	13,555,846 33.4%	4,521,753 70.2%	16,835,837 39.5%
Students in poverty (% of Total)	2,770,686 46.8%	9,827,370 24.2%	3,063,776 47.6%	17,271,896 40.5%
English Learners (% of Total)	1,399,210 23.6%	1,268,380 3.1%	1,571,463 24.4%	2,651,652 6.2%

Source: National Center for Education Statistics

FIGURE 2. **Performance on NAEP, 1992-2005, 4th-Grade Math**

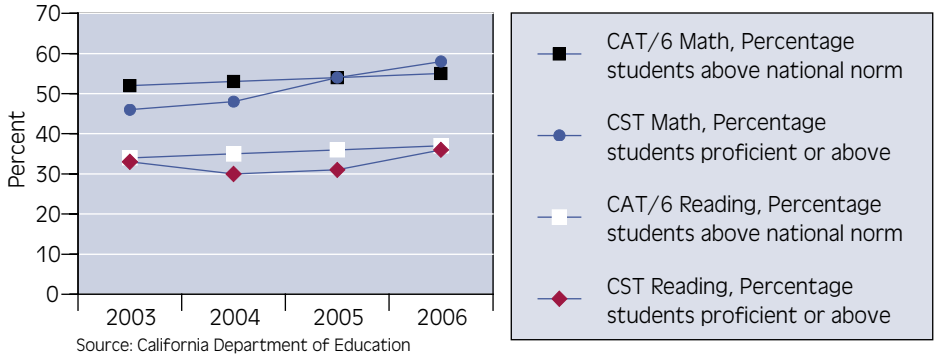


Source: National Center for Education Statistics

Although the demands on our schools have grown, there has not been a commensurate growth in resources. Pupil-teacher ratios are only marginally lower today than they were in 1990, primarily due to the smaller classes in early grades under the Class-Size Reduction policy adopted in 1996. And although California teacher salaries appear high relative to the rest of the nation, beginning teacher salaries today are actually less competitive, when compared to salaries outside of teaching, than they were in the early 1990's (AFT, 2005). Furthermore, while dealing with more challenging demographics and static resources, California's teachers and public school staff have come under increasing scrutiny, as the state has adopted strong standards-based accountability and reporting.

When we consider these changes, particularly when combined with the myriad problems with the state school finance and governance system detailed in the *Getting Down To Facts* reports, perhaps what is most surprising is not that California ranks so low relative to other states but that California students perform as well as they do, and not substantially worse. Although California's performance relative to the rest of the nation is a disturbing reminder of how far we have to go, we should not lose sight of how far we have come. To that end, this brief highlights how California schools have handled the changing environment of the last decade by examining the trends in student outcomes *within* California over time, using a range of indicators.

FIGURE 3. **Percentage of California Third Graders Proficient in Math and Reading, 2003-2006**



Source: California Department of Education

Test scores

It is often pointed out that California ranks near the bottom of the country on the National Assessment of Education Progress (NAEP), whether based on scores for all students or for sub-groups (e.g., Loeb et al, 2007). This overlooks the consistent progress that California has shown over time. Hatami (2006) documents the upward trend since 1992 in the percent of all fourth graders proficient in both math and reading on the NAEP tests. The same pattern appears for eighth graders and all racial sub-groups as well. Figure 2 shows the trend for the percent of fourth-graders at the Basic or Proficient levels in math, for California and the United States. Our students are clearly improving, although California continues to lag behind the rest of the country.

While the NAEP is useful for comparisons across states, California also administers its own standardized exams, including both a nationally-normed exam (the CAT/6 since 2002 and the Stanford-9 before that) and exams tailored specifically to California's subject standards (the California Standard Tests or CSTs). Since 1999, our accountability system has been based on these state exams. Overall school performance is captured by the Academic Performance Index, a weighted average of the results across tests, subjects and grades. The API is reported with great fanfare each year, but because the composition of the API has changed every year since its inception, a cross-year comparison is not appropriate.[2] Instead, Figure 3 shows the results for

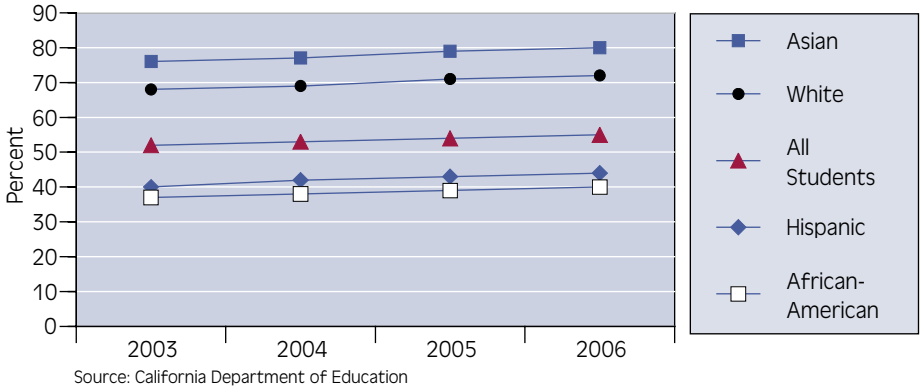
some of the tests themselves. The data here are for all third grade students in reading and math but the trends in other grades and for all racial sub-groups are similar. Unfortunately, consistent test data are only available for four years, but during this short time the pattern of test performance is one of fairly steady improvement. It is also worth noting that the most common way to discuss test performance is in terms of the percent of students above some threshold. Since overall enrollments have been increasing in California over this time period, even constant percentages would reflect growing *numbers* of students surpassing the threshold level of achievement.

This improvement in overall proficiency levels is certainly encouraging. At the same time, however, there has been little progress in closing the gaps between white and non-white students. Figure 4 shows the breakdown for third-grade math, on the CAT/6, by race. Each sub-group shows improvement but white and Asian students are still out-performing their African-American and Hispanic peers by wide margins that have remained relatively steady over time. Again, this is a pattern that is consistent across other grades and subjects.

Other indicators

Under *No Child Left Behind*, scores on standardized tests have become the primary measure of school performance. But changes in the tests, and their changing role in the accountability system, can make cross-year comparisons difficult to interpret. For example, the CSTs were only introduced in 2003 and at least some of the upward trend over the first few years may be attributed to teachers and students becoming more familiar with the tests, rather than to true improvements in student performance. Additional years of data are needed before drawing any definitive conclusions that these gains reflect real improvements in the quality of California's public schools. Fortunately, there are several other measures of progress in our schools that are defined consistently over somewhat longer time periods and on which improvements are not likely to be correlated with increasing familiarity with specific assessments.

FIGURE 4. **Percentage of California Third Graders above National Norm on the CAT/6 in Math, 2003-2006**



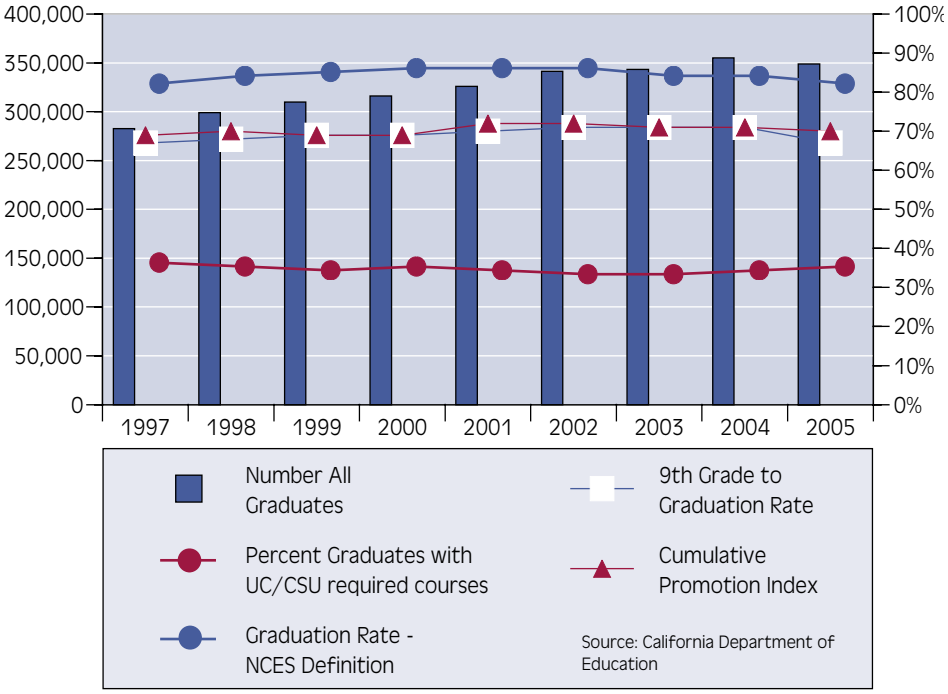
Source: California Department of Education

Graduation Rates

California's high dropout rate (and its corollary, the low graduation rate) has been the subject of much concern. Although there is a debate over the best way to measure dropouts and graduates (e.g., Swanson, 2004), California loses a disturbing number of high school students each year by any measure. On the other hand, using one of the more accepted measures, California is one of the few states that saw an improvement in its graduation rate between 1992 and 2002 (Barton, 2005).

The California Department of Education reports graduation rates calculated in two ways. One method, the calculation used by the National Center for Education Statistics, has been heavily criticized (see, for example, Civil Rights Project, 2005). It is calculated as the number of 12th-grade graduates divided by the sum of 12th-grade graduates and dropouts in the previous three years (presumably adding up to the number of students who started 9th grade four years prior).[3] The main criticism is that this relies on a direct measure of dropout and the way dropouts are defined very likely under-states the actual number of students dropping out; thus, this graduation rate is an overestimate. A slightly better measure is California's "9th-grade to graduation" rate, which is calculated as the number of 12th-grade graduates divided directly by 9th-grade enrollment four years prior.[4] Finally, the Cumulative Promotion Index developed by the Urban Institute is considered preferable to either of these methods. It is calculated using data from the most

FIGURE 5. **Graduates and Graduation Rates, 1997-2005**



Source: California Department of Education

recent two years and is the product of the retention rate for each grade (e.g., enrollment in 10th grade as a percentage of 9th-grade enrollment, etc.) and the percent of 12th-graders who graduate.[5]

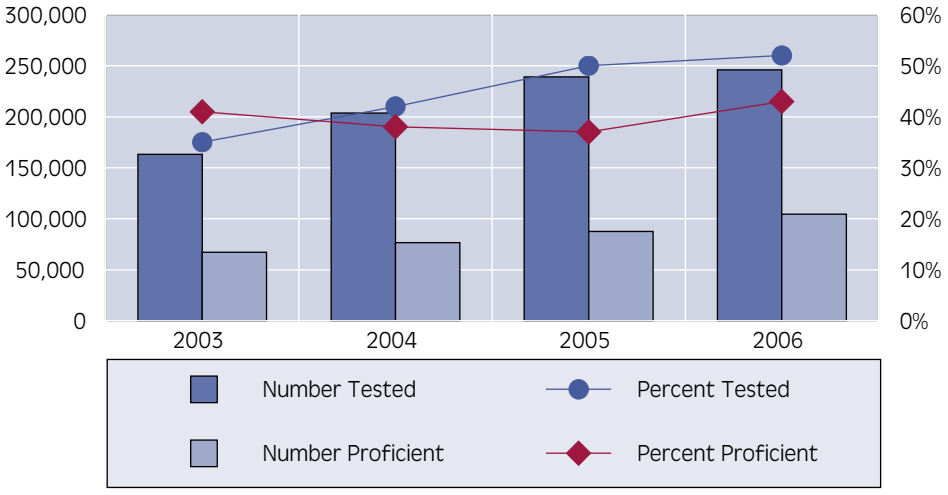
Figure 5 shows the total number of graduates and the graduation rate, calculated with these three measures. The graduation rate, however measured, rose slightly in the late 1990's but has been fairly flat or declining in the last few years. Because enrollments have grown, however, the overall trend in the *number* of graduates has been one of steady increases, although the dip in 2006 may be cause for concern. That dip may be due to the new requirement that all students must pass the California High School Exit Exam in order to graduate (Rumberger, 2007).

The number of graduates who have completed coursework to enter the University of California or California State University systems has also grown; the rate as a percentage of all graduates is fairly steady but again, because the total number of graduates is growing, this represents an increase in the *number* of UC/CSU-ready graduates. Particularly encouraging is the fact that the rate of UC/CSU-readiness has risen the most for Hispanic students, causing the Hispanic-white gap on this measure to close slightly. The gap between white and African-American students has held fairly steady.

Eighth-grade algebra

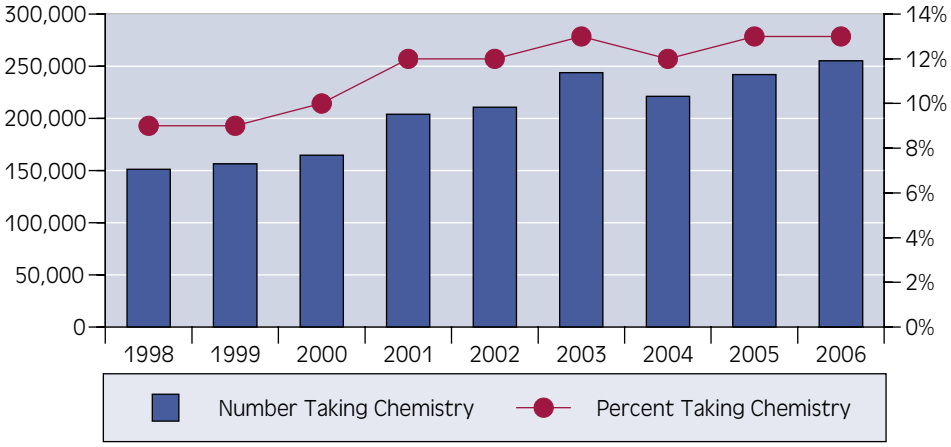
For students in eighth and higher grades, most of the California Standards Tests in math are end-of-subject exams; that is, students only take the test if they have completed, or are enrolled in, the subject. Thus, a useful measure of student progress is not only how students perform on the exams but how many students are taking the exams in particular subjects by certain grades. For example, students making normal progress in their coursework should be taking algebra in the eighth grade; thus, one measure of how well students are being prepared is to examine how many students take the algebra CST by eighth grade and how many are considered proficient at this point. This is shown in Figure 6. Over the period for which

FIGURE 6. **Students Taking and Passing Eighth Grade Algebra, 2003-2006**



Source: California Department of Education

FIGURE 7. **Number and Percent High School Students Taking Chemistry Courses**



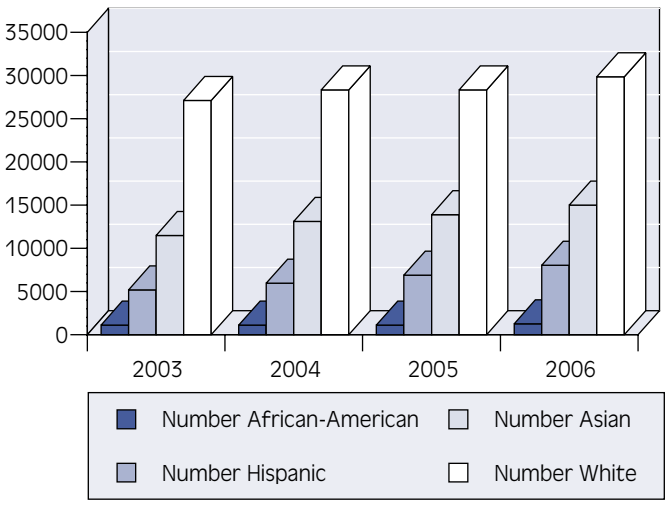
Source: California Department of Education

data are available, both the number and percent of eighth-grade students who take the algebra exam have increased substantially. The *number* of students who are proficient has also increased, but the percentage of test-takers who are proficient fell in 2004 and 2005. It was back up in 2006 and it will be important to see what happens in the future. On the one hand, it is a sign of progress that students appear to be moving through their coursework on track and more students are completing algebra prior to entering high school. On the other hand, simply having more students *taking* algebra earlier does not necessarily mean much if they are not actually *learning* algebra. Also, the gaps between white students and their African-American and Hispanic classmates, in both percent of 8th-graders taking algebra and the percent proficient, have been up and down but show no consistent evidence that they are closing.

Advanced math and science

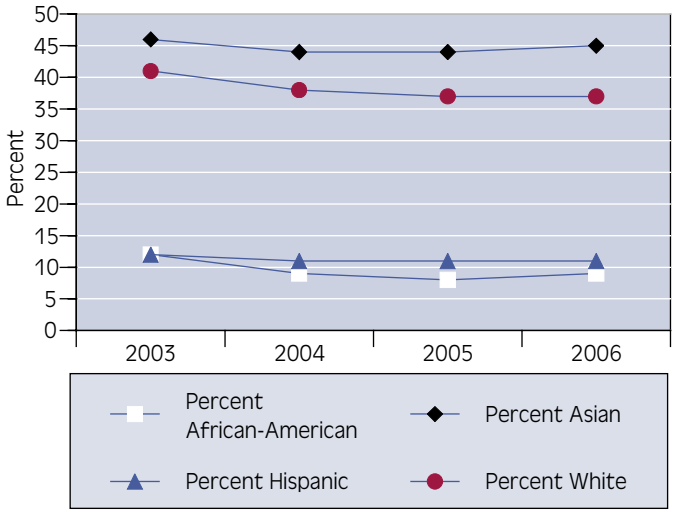
As another indicator of how students are progressing through their coursework, the California Department of Education also tracks how many high school students are enrolled in advanced math and science courses. For example, Figure 7 shows the number and percent of high school students enrolled in chemistry classes from 1998 to 2006. Overall, both the number and percentages have been going up; the trend in advanced math and physics classes is similar (through the trend in physics is flatter). It is more difficult to say that students are doing better in these subjects. Figures 8 and 9 show that the *percent* of students performing at the proficient or advanced level on the Chemistry CST has fallen slightly among African-American, Hispanic and white students; however, because more students are taking chemistry, the *number* of students performing at the proficient or advanced level has increased for all sub-groups. This

FIGURE 8. **Chemistry CST, Number of Students Proficient, by race**



Source: California Department of Education

FIGURE 9. **Chemistry CST, Percent Students Proficient, by race**



Source: California Department of Education

pattern also holds for advanced math and physics. Thus, on one hand, one could say that more students are mastering advanced math and science subjects than ever before; unfortunately, on the other hand, one could also say that more students are *not* mastering these subjects than ever before.

Discussion

The preceding analyses make it clear that California's schools have been improving over the last several years. Although one may quibble with any one indicator, the trend across multiple measures of performance is fairly consistent: all students are doing better, or at least holding steady, during a time when the system is serving a larger and more diverse population of children. This is a testament to the dedication of our public school teachers, principals and staff.

At the same time, gaps between white and non-white students are not closing. These state-level statistics also mask huge variation across schools. For example, in some schools virtually all 8th-graders take algebra while in other schools none do. There is clearly still much work to be done. Nevertheless, it is important that we recognize the accomplishments of our schools as well as their deficiencies. Teachers, administrators and staff are under increasing pressure to produce measurable improvements in student outcomes and they have responded admirably to the challenge.

Unfortunately, as the *Getting Down to Facts* report made clear, the achievements documented in this brief have happened in spite of many state policies, not because of them. For policymakers, the need for reform should be clear. How much better might our schools have done, and how much more might they do in the future, if California's school finance and governance systems actually supported student performance and accountability? If we are going to ask our schools for continued improvements, we must also ensure that they have the strong support that they need to do this vital work.

Endnotes

1 Getting Down to Facts is a research project of more than 20 studies requested by the Governor's Committee on Education Excellence, former Secretary of Education Alan Bersin, the President Pro Tem of the California Senate, the Speaker of the California Assembly, and the Superintendent of Public Instruction. The studies are intended to provide information on the current state of California's school finance and governance systems and, as a group, address the three questions: What do California school finance and governance systems look like today? How can we use the resources that we have more effectively to improve student outcomes? And to what extent are additional resources needed so that California's students can meet the goals that we have for them?

2 For example, in 1999 and 2000, the API was based entirely on performance on the Stanford-9, a nationally-normed exam. In each year since 2000, results on the California Standards Tests have been added, with new subjects added each year and the weights given each exam changing each year. Thus, comparing API scores over time is not an apples to apples comparison.

3 Specifically, the NCES graduation rate is calculated as: $\frac{G_t}{(G_t + D^{11}_{t-1} + D^{10}_{t-2} + D^{9}_{t-3})}$ where G_t is 12th grade graduates in year *t*, and D^y_t is dropouts in grade *y*, year *t*.

4 Specifically: $\frac{G_t}{N^9_{t-3}}$ where N^y_t is enrollment in grade y, year t.

5 Specifically: $\frac{N^{10}_t}{N^9_{t-1}} \times \frac{N^{11}_t}{N^{10}_{t-1}} \times \frac{N^{12}_t}{N^{11}_{t-1}} \times \frac{G_{t-1}}{N^{12}_{t-1}}$ where the first three terms represent the retention rate for each grade while the last term is the 12th-grade graduation rate.

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