



EDUCATION

- CHILD POLICY
- CIVIL JUSTICE
- EDUCATION
- ENERGY AND ENVIRONMENT
- HEALTH AND HEALTH CARE
- INTERNATIONAL AFFAIRS
- NATIONAL SECURITY
- POPULATION AND AGING
- PUBLIC SAFETY
- SCIENCE AND TECHNOLOGY
- SUBSTANCE ABUSE
- TERRORISM AND HOMELAND SECURITY
- TRANSPORTATION AND INFRASTRUCTURE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

[Jump down to document](#) ▼

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

[Purchase this document](#)

[Browse Books & Publications](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Education](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents.

This product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

California's K–12 Public Schools

How Are They Doing?

Stephen J. Carroll, Cathy Krop, Jeremy Arkes,
Peter A. Morrison, Ann Flanagan

Supported by the William and Flora Hewlett Foundation



RAND

EDUCATION

The research described in this report was conducted by RAND Education for the William and Flora Hewlett Foundation.

Library of Congress Cataloging-in-Publication Data

California's K-12 public schools : how are they doing? / Stephen J. Carroll ... [et al.].

p. cm.

"MG-186."

Includes bibliographical references.

ISBN 0-8330-3716-1 (pbk. : alk. paper)

1. Public schools—California. 2. Education—California—Evaluation. 3. Educational equalization—California. 4. Education and state—California. I. Carroll, Stephen J., 1940-

LA243.C34 2005

371.01'09794—dc22

2004025761

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2005 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2005 by the RAND Corporation

1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

201 North Craig Street, Suite 202, Pittsburgh, PA 15213-1516

RAND URL: <http://www.rand.org/>

To order RAND documents or to obtain additional information, contact

Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Email: order@rand.org

Summary

As recently as the 1970s, California’s public schools were reputed to be excellent. Today, that reputation no longer stands. Instead, there is widespread concern that California’s schools have slipped in quality over the years and that they are no longer performing as well as they did previously or as well as schools in other states.

The primary objective of our study was to look closely at California’s public system of kindergarten through twelfth grade (K–12) schools in order to provide an accurate, comprehensive picture of the system as it is today. We describe in this report the student population and the schools’ resources, including their financial resources, teachers, and facilities. We also describe the schools’ outcomes, initially focusing on student academic achievement as measured by standardized tests, and then turning to other outcomes that may be influenced by schools and are not adequately captured in test scores. These include both educational attainment measures—high school graduation and continuation on to college—and a variety of non-academic measures—teenage pregnancy, substance abuse, and juvenile delinquency—on the grounds that the purpose of schooling goes beyond academic achievement to include students’ broader preparation for adult success and citizenship.

In looking at the student population, the resources, and the various outcomes, we also analyzed trends and compared California with other states and to the nation as a whole as much as the data would allow. In some cases, the data allowed us to focus broadly on the schools since the 1970s; in other cases, however, the available data

limited our analyses. For example, we were able to analyze academic achievement trends only for students through eighth grade and only since 1990, because there are no appropriate data on academic achievement for high school students or for years prior to 1990.

Where the data would allow, we also compared trends and patterns in California to trends and patterns in the four states that are comparable to California in that they had the largest populations of 5–18 year olds (presumably K–12 students) in the nation in 2000. After California, which ranks first in number of school-age children, these four other “most populous” states are Texas, New York, Florida, and Illinois.

K–12 Reforms in California

To place the study in context, we discuss various educational reforms that California has considered and either adopted or rejected. These reforms include school finance reform, class size reduction, charter schools, voucher programs, and California's standards and assessment system. The discussion is intended to provide information on what California has or has not done to reform its K–12 public schools and to serve as a backdrop for the trends reported.

California was the first state to implement comprehensive school finance reform. When it did so, nearly 30 years ago, spending per pupil became significantly more equal across California school districts. However, this reform may also have contributed to lower levels of spending on average, which led to larger class sizes in California's K–12 public schools.

In 1992, California became the second state to enact charter school legislation. As of the 2002–2003 school year, the state's 452 charter schools served about 2.5 percent of all public school students. In fact, California ranks fifth among all states for the highest percentage of public school students enrolled in charter schools.

Two efforts to provide vouchers for private schools, ballot initiatives in the 1993 and 2000 elections, failed. Neither was able to capture more than one-third of the votes in California.

In 1996, California enacted a popular voluntary program to reduce class sizes for grades K–3 and 9. Although this program clearly succeeded in reducing class sizes in grades K–3, the reductions came at substantial expense, and the evidence is mixed on whether the program has improved students’ academic achievement. An unintended consequence of this effort was that the state hired many teachers lacking certification in order to meet the requirements for smaller class sizes. In addition, other programs were cut to pay for the additional teachers and to provide the extra classrooms needed. And classes in the nontargeted grades remained large. Finally, despite the class size reduction program, in 2001 California still had the second highest ratio of pupils to teachers in the nation.

California legislated an accountability system in the Public School Accountability Act (PSAA) of 1999. California now tests students in more grades than most states do, but other states test in more subjects and have more-varied types of questions.

California Demographics

California is among the most racially and ethnically diverse states, and racial/ethnic diversity is especially evident among California’s youth. Moreover, the racial/ethnic distribution of the state’s youth population is rapidly changing. The available data identify K–12 public school enrollments by race/ethnicity for four groups. They show that enrollments are presently 45 percent Hispanic, 34 percent Anglo (non-Hispanic white), 12 percent Asian and other (with “other” being mostly Filipino but also including “Asian and Pacific Islander” and a small number of American Indian), and 8 percent black. The earliest comparable data show that in 1987–1988 (15 years earlier), these percentages were 30 percent Hispanic, 50 percent Anglo, 11 percent Asian and other, and 9 percent black. It is likely that by 2012–2013, the majority of California public school children will be Hispanic.

Furthermore, nearly one in every ten Californians is a recent immigrant—i.e., a foreign-born person who entered the United

States within the past ten years. By comparison, not even one in 20 persons nationally is a recent immigrant. Consequently, California has an abundance of English learners and linguistically isolated households, both of which are disparities that heighten educational costs for affected school districts—English learners by imposing specialized and/or higher per capita staffing needs, and linguistic isolation by hampering two-way communication between schools and parents.

California has within its borders 12.8 percent of the nation's school-age population but only 11.8 percent of the nation's adult population—i.e., potential taxpayers. This means that California taxpayers shoulder disproportionate responsibility for persons of school age.

About one of every five children in California lives in a family whose income is below federally established poverty thresholds. Of the children in California who live in single-mother families, 39.7 percent live in poverty; the corresponding proportion for children living in married-couple families is 12.9. Furthermore, California, at 29.6 percent, trails the nation in the percentage of children living in high-poverty neighborhoods and currently displays a worsening trend.

Child poverty is most prevalent in a handful of counties in California's Central Valley (e.g., Tulare, Fresno, and Madera counties). The level of child poverty places several of these counties among the poorest tenth of the nation's 3,142 counties. Moreover, the continuing geographic redistribution of population within the state will amplify public school enrollment growth in these counties and in counties around Los Angeles. Inevitably, schools in these areas will be particularly strained by enrollment pressure, staffing needs, and the crowding of existing facilities.

School Funding

California has fundamentally transformed its system of public school finance. In 1970, public education in California was primarily locally

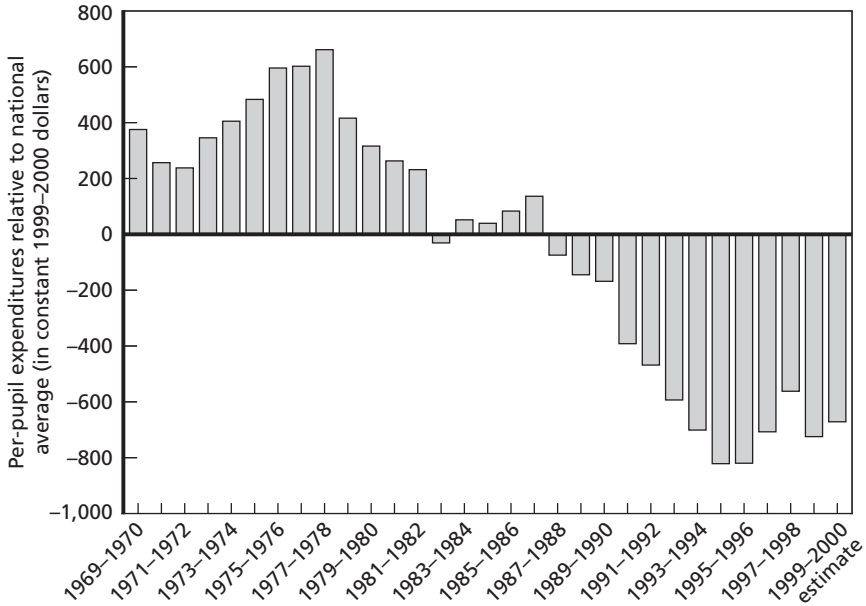
financed. School districts set their own local property tax rates, subject to the approval of the voters. Districts raised more than half of their total revenues by taxing local property. Now, however, the state controls the vast majority of school district revenues. The school districts currently have few options for raising their own funds. Further, a growing share of education dollars is being distributed as categorical, or restricted, aid, as opposed to “revenue limit,” or general purpose, aid. These trends have raised concerns about a decline in local discretion.

Proposition 13, passed by California voters in 1978 (combined with Proposition 98, approved by California voters in 1988), has had significant consequences for K–12 public education funding. In general, K–12 real revenues and expenditures per pupil grew fairly rapidly in California and the United States until the early 1980s, and California’s per-pupil spending largely tracked that of the United States. But California fell well behind the other states in the late 1980s. Beginning in the mid-1990s, California steadily added to its education funding, as did other states, with an estimated real growth of 27 percent between 1994–1995 and 2001–2002. However, after several years of more positive finances, California’s schools are again confronting the challenges that go with severe budget constraints.

Figure S.1 shows California per-pupil expenditures relative to the national average. As can be seen, spending per pupil went from about \$400 above the national average in 1969–1970 to more than \$600 below the national average in 1999–2000. Despite recent funding increases for K–12 education, California schools have continued a decade-long pattern of spending well below the national average per student.

California has a relatively high capacity to fund its schools (as measured by per capita personal income) compared with its “effort.” Figure S.2 shows public school spending as a percentage of personal income. In the early to mid-1970s, California spent about the same share of its personal income on public education as the rest of the country did, about 4.5 percent. However, in the late 1970s, the share of personal income that Californians devoted to their public schools

Figure S.1
California's K–12 Public School Per-Pupil Spending Relative to the National Average, 1969–1970 to 1999–2000



SOURCE: U.S. Department of Education, NCES, Digest of Education Statistics, various years.

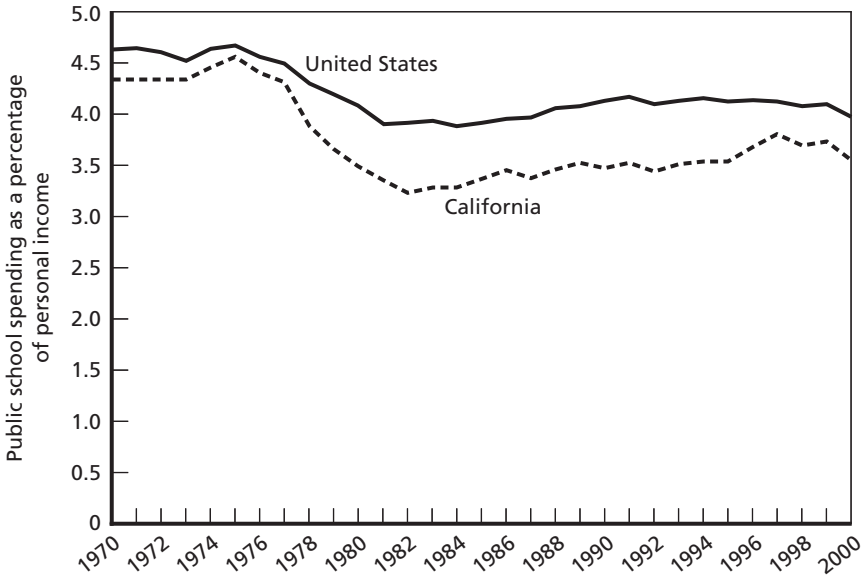
RAND MG186-S.1

fell to about 1.2 percentage points below the national average and remained well below the national average through 2000.

How does California spend its school budget? Education, especially K–12 education, is labor intensive. About 85 percent of all K–12 expenditures are devoted to personnel salaries and benefits, and close to 40 percent of all expenditures are devoted to teacher salaries and benefits.

Compared to other states, California saw relatively large dollar growth in its school districts' spending on instructional items other than teacher salaries—such as supplies, materials, and contractual services for regular, special, and vocational programs—and on school administration over the 1990s. California per-pupil spending on

Figure S.2
K–12 Public School Spending as a Percentage of Personal Income,
California and the United States, 1970 to 2000



SOURCE: U.S. Bureau of Labor Statistics, and U.S. Department of Education, NCES, Digest of Education Statistics, various years.

RAND MG186-S.2

pupil support and general administration has fallen by relatively large dollar amounts compared with spending in other states and represents a relatively small share of total spending.

Teachers

In 1999–2000, California employed 287,000 K–12 teachers, who were paid an average salary of \$47,680. Real annual teacher salaries in California in 2000–2001 were on average about the same as they were in 1969–1970, and salaries had remained relatively flat over time. California’s average annual teacher salaries have consistently placed California’s teachers in the top ten in the nation over time in terms of absolute salaries. If the dollars are adjusted to reflect pur-

chasing power, however, California's teacher salaries are actually lower than the national average. The adjusted average annual salary of \$38,845 places California last among the five most populous states and 32nd nationwide.

Figure S.3 displays the pupil-teacher ratios in California and the United States for the past 30 years. Until 1979, these state and national ratios largely tracked each other. In the late 1970s, however, California's pupil-teacher ratio grew, and it remained well above the national average through the 1980s and the early and mid-1990s. In the 1996–1997 school year, California's pupil-teacher ratio began to fall as a reflection of Senate Bill 1777, which was passed in July 1996 to promote class size reduction and provided \$650 per student for each K–3 classroom with 20 or fewer students.¹

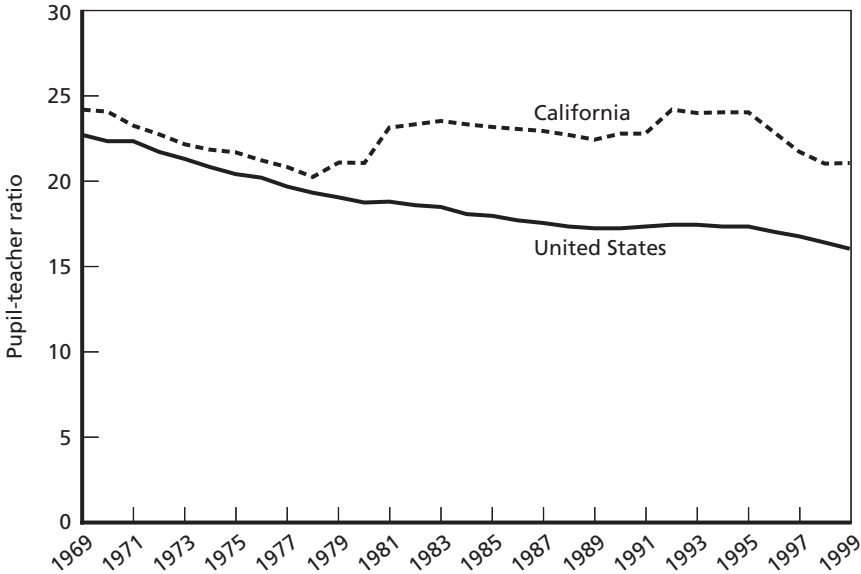
Currently, California continues to have the second highest ratio of students per teacher of any state, about 20.9 students to one teacher. The current U.S. average is 16.1.

As a group, California's public K–12 teachers are formally trained, state-certified professionals. However, by 1999–2000, newly employed teachers made up a substantial portion of the teacher workforce—about 15 percent—and the majority of these new teachers were not formally trained and state-certified. In particular, the 1990s saw a growth in those coming into teaching by way of pre-internships, internships, and emergency permits. As a result, the gap between the demand for teachers and the supply of fully credentialed teachers widened over the 1990s.

Teacher qualification requirements are generally lower in California than in other states. For example, 82 percent of school districts in the United States require full standard state certification in the subject to be taught, compared with 46 percent of districts in California. Teachers in California who have not completed all requirements for a credential are concentrated in urban schools, the lowest performing schools, and schools with high percentages of low-income and minority students.

¹ The incentive was later increased to \$800 per student.

Figure S.3
Pupil-Teacher Ratios in K–12 Public Schools, California
and the United States, Fall 1969 to Fall 1999



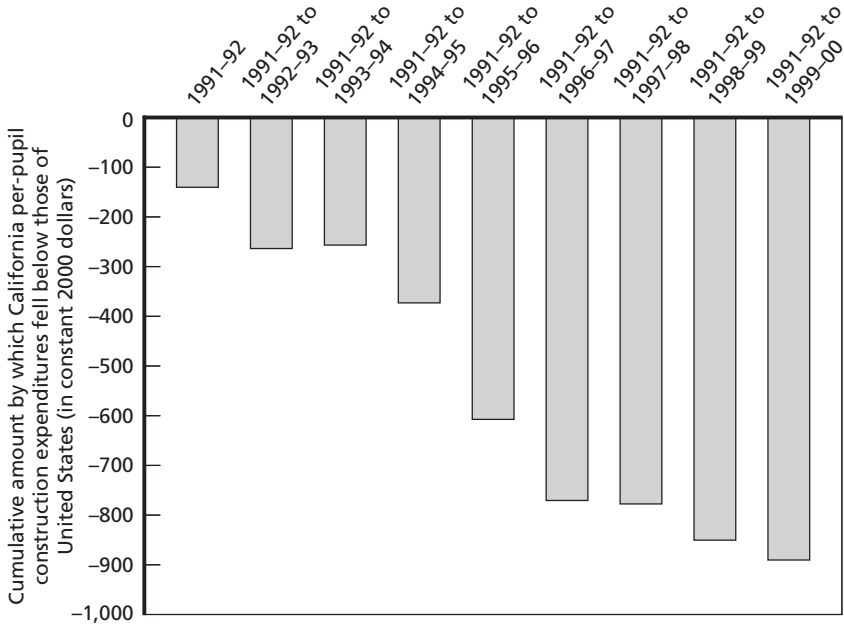
SOURCE: U.S. Department of Education, NCES, Digest of Education Statistics, various years.

RAND MG186-S.3

School Facilities

Concerns about K–12 public school facilities in California mirror those at the national level. A national study conducted in 1995 suggested that school facilities had reached the breaking point and that many schools in California were in especially bad condition. Per-pupil construction expenditures in California fell behind those of the United States—ranging from about \$5 per pupil below in 1997 to about \$235 per pupil below in 1995. Figure S.4 shows the differences in per-pupil construction expenditures between California and the United States when the annual differences between 1991–1992 and 1999–2000 are added up. Adding these differences together shows

Figure S.4
Cumulative Differences in Per-Pupil Construction Expenditures
Between 1991–1992 and 1999–2000, California and the
United States



SOURCE: U.S. Census Bureau, Public Education Finances, various years.

RAND MG186-S.4

that cumulative California per-pupil spending on construction came to about \$890 less per pupil than the national average over that period.

California has made progress in addressing K–12 facility needs, largely due to voter approval of several large state general obligation bonds and a variety of legislative changes that have enabled districts to approve local general obligation bonds. In 2002 alone, voters approved the issuance of over \$11 billion in state bonds and close to \$10 billion in local bonds. The recent passage of Proposition 39 suggests that progress will continue to be made in addressing the state’s facility needs.

However, even with this progress, California still lags the nation and the other large industrial states in terms of the adequacy of the school buildings' environmental and other features, and per-pupil construction expenditures. These inadequacies are concentrated in central cities serving high minority and low-income populations, as well as in rural areas. The court decisions that lessened the financial disparities between low- and high-income districts have pertained primarily to the state's role in providing for instruction, not buildings. The past 25 years have seen a general increase in the state's involvement in facilities-related matters; but districts still contribute to facilities costs, and the extent to which state funding will address the differences between districts is not yet clear.

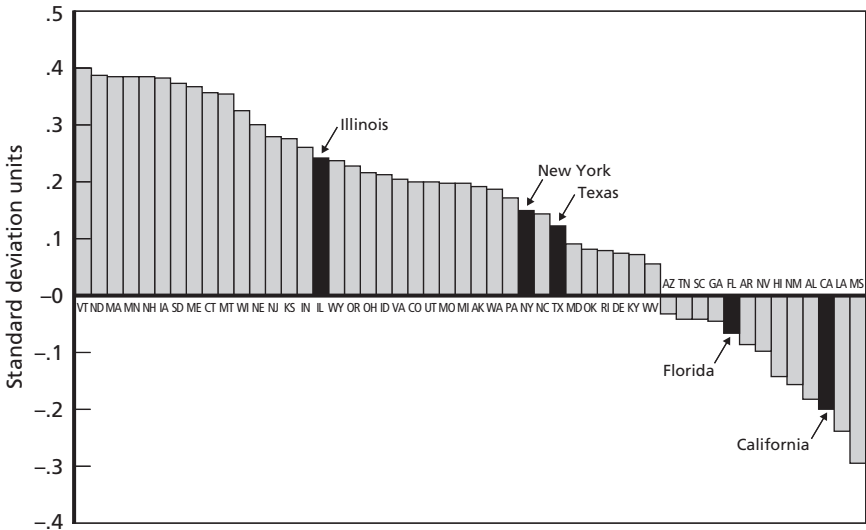
Student Academic Achievement

A variety of standardized tests have been administered in California. The longest running statewide testing program was the California Assessment Program (CAP), which began in 1973 and ended in 1992. The most recent assessment program, Standardized Testing and Reporting (STAR), continues to collect standardized test score data.

The raw data from California's CAP test are no longer available, making it impossible to track student performance from the beginning of statewide testing in California. A California Department of Education publication in 1986 provided some historical data on student performance in California relative to that in the nation, but these comparative analyses of early California state test scores rely on a set of outdated national norms from several different publishers and are therefore unreliable.

The only assessment that allows for reliable comparative analyses of student academic achievement among states is the National Assessment of Educational Progress (NAEP), a national test administered in all states. Figure S.5 shows the ranking of states by average performance on NAEP tests between 1990 and 2003 (the NAEP scores have been converted to standard deviation units). The data

Figure S.5
Average State Performance on NAEP Reading and Mathematics,
Grades 4 and 8, 1990–2003



RAND MG186-S.5

show that California performs at the bottom end of the distribution of states, just above Louisiana and Mississippi. Also depicted in the figure are the average NAEP scores for the four other most populous states. As can be seen, California falls well below these states in student performance.

Our analyses of NAEP scores show the following:

- California NAEP scores are significantly lower than the average scores in the nation and are the lowest scores of the five most populous states.
- California's low NAEP scores cannot be accounted for by the state's high percentage of minority students. When students' family backgrounds are controlled for, California's scores are the lowest in the nation (–0.18 standard deviations below the mean). This suggests that California's low scores must be in

some part a result of the schools, rather than simply a result of family characteristics in the state.

California is making gains in NAEP scores. California's scores on the 2002 reading test and the 2003 mathematics and reading tests show some relative progress. California's rank using the average score across the 2002 and 2003 NAEP is 45th out of 50 states. California's rank over the period 1990 to 2002 was 48th out of 50 states. This increase in relative standing can be attributed to the large gains made on the 2003 grade 4 mathematics NAEP. Between 1996 and 2003, California gains in grade 4 mathematics scores were larger than the gains made in the nation and by any of the four other most populous states. While this is promising, California is still the lowest scoring of the five most populous states.

Other Indicators of Student Progress

Academic achievement is only one measure of how well schools are serving California's young people. Schools can influence (with health education, counseling, and after-school programs, for example) educational attainment outcomes such as high school graduation and college continuation, as well as behavioral outcomes, such as teenage pregnancy, substance abuse, and juvenile delinquency.

Relative to other states, California has a low rate of students continuing on to college, but California's trends for high school graduation are favorable compared to those of other states.

The average pregnancy rate for 15–17 year olds is higher in California (9.5 percent per year) than in any state except the District of Columbia. However, the teenage pregnancy rate is declining faster in California than in most states, even when racial/ethnic differences are adjusted for.

California teenagers compare favorably to teenagers in other states with respect to cigarette and alcohol use and property crime arrests. And when the racial/ethnic composition of the states is adjusted for, California keeps its strong marks, retaining its low rates of

cigarette and alcohol use and property crime arrests, and it ranks well with respect to arrests for violent crimes as well.

Conclusions

Californians were once proud of their state's public K–12 education system, but there have been signs in the last few decades that the system has slipped badly relative to its own past performance and that of other states' school systems. We found reason to be concerned about California's public K–12 schools. The results are not uniformly discouraging; California's schools compare favorably to those in other states in some respects. But overall, the comparisons are unfavorable to California more often than not. And in many instances, the results support the impression that California's relative standing in the nation has declined over the last three decades, and especially since the finance reform legislation in the 1970s.

California's demography presents extraordinary challenges to public education and it may be the case that these challenges cannot be effectively met unless the state's K–12 system is funded at relatively high levels. However, California school districts have experienced comparatively low levels of funding compared to funding in most other states. California's schools have been further stressed by extreme fluctuations in real spending per pupil. These relatively low funding levels in California's K–12 schools reflect comparatively low effort relative to the state's capacity.

The comparatively low funding afforded K–12 public education in California can be seen in the resources the schools are able to make available to their students. A substantial portion of the state's teachers are not fully qualified and state certified. California continues to have the second highest pupil-teacher ratio of any state. And despite substantial progress in dealing with school facilities over the past 10 years, California continues to lag the nation in addressing K–12 facility needs.

The combination of a student population with relatively great needs, relatively low funding levels, and relatively inadequate re-

sources may have contributed to California's comparatively low levels of student academic achievement. California NAEP scores are at the bottom of the distribution of participating states; California's minorities' scores are particularly low. There is, however, a bright spot: California is making statistically significant annual gains in mathematics scores.

California students' nonacademic outcomes present a mixed picture. California lags other states in terms of high school graduation rates but is catching up. California generally lags other states in college continuation and is falling further behind. Teenage pregnancy rates are much higher in California than in most other states, but they are rapidly decreasing. And California is roughly similar to other states in the rates of substance abuse and teenage crime arrests.